WHC/21/44.COM/INF.8B2

IUCN World Heritage Evaluations 2020 and 2021

IUCN Evaluations of nominations of natural and mixed properties to the World Heritage List

IUCN REPORT FOR THE WORLD HERITAGE COMMITTEE, EXTENDED 44TH SESSION, 16-31 JULY 2021, FUZHOU (CHINA) / ONLINE

United Nations Educational, Scientific and Cultural Organization
World Heritage Convention

Cover photos: Elephant at Langoué Baï, Ivindo National Park, Gabon (left).

Mtirala National Park. View from Mtirala Mountain, Georgia (right).

Preliminary remarks

The IUCN evaluations in the present report have been compiled and completed during the ongoing global Covid-19 pandemic. The 44th session of the World Heritage Committee, initially scheduled to take place in 2020, was postponed to 16-31 July 2021 to be held as the Extended 44th session of the World Heritage Committee. As the World Heritage Committee has to examine nominations of both the 2019/2020 and 2020/2021 cycles, this report consolidates both evaluation cycles into one document under the document code WHC/21/44.COM/INF.8B2 and is divided into two parts:

The first part (**Volume I**) contains IUCN's evaluation reports of the 2019/2020 cycle as completed in spring 2020 in conformity with the timelines set out in the *Operational Guidelines*. At the time of finalisation, the postponement of the 44th Session of the World Heritage Committee to an unknown date had been announced, in response to the outbreak of the Covid-19 pandemic. The reports in Volume I were thus finalised based on the statutory deadline of 28 February 2020 for information supplied by the State Party.

The second part (**Volume II**) contains IUCN's evaluation reports of the 2020/2021 cycle as completed in spring 2021 in conformity with the timelines set out in the *Operational Guidelines*. At the time of finalisation, the new dates of the extended 44th Session of the World Heritage Committee had been announced. The reports in Volume II were finalised based on the statutory deadline of 28 February 2021 for information supplied by the State Party.

IUCN Evaluations of Nominations of Natural and Mixed Properties to the World Heritage List

Preliminary remarks

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IUCN World Heritage Evaluations 2020

IUCN Evaluations of nominations of natural and mixed properties to the World Heritage List

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Cover photo: Mtirala National Park. View from Mtirala Mountain, Georgia

IUCN Evaluations of Nominations of Natural and Mixed Properties to the World Heritage List

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DISCLAIMER

The designation of geographical entities in this book, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of IUCN concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

EXECUTIVE SUMMARY TABLE OF IUCN EVALUATIONS TO THE WORLD HERITAGE COMMITTEE

State Party	Name of the property (ID number)	Note	OUTSTANDING UNIVERSAL VALUE											Further mission required	IUCN Recommendation
			Meets one or more natural criteria				Meets conditions of integrity				Meets protection and management requirements				
			Criterion (vii)	Criterion (viii)	Criterion (ix)	Criterion (x)	Integrity	Boundaries	Threats addressed	Justification of serial approach	Protection status	Management	Buffer zone / Protection in surrounding area		
Paragraphs of the Operational Guidelines for the Implementation of the World Heritage Convention			77	77	77	77	78, 87-95	99-102	78, 98	137	78, 132.4	78, 108-118, 132.4, 135	103-107		
Japan	Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island (1574)		–	–	–	yes	yes	yes	part	yes	yes	yes	yes	no	I
Republic of Korea	Getbol, Korean Tidal Flat (1591)		–	no	no	part	no	no	part	yes	yes	part	no	yes	D
Georgia	Colchic Rainforests and Wetlands (1616)		–	–	yes	yes	yes	yes	yes	yes	yes	yes	part	no	I
Slovenia	Classical Karst (1615)		no	no	no	no	no	no	part	–	no	no	_	no	N
Ethiopia	Holqa Sof Umar: Natural and Cultural Heritage (Sof Umar: Caves of Mystery) (1516)		no	no	–	–	no	no	no	–	yes	no	no	no	N

KEYS

yes	met	I	inscribe / approve
part	partially met	N	non inscribe / not approve
no	not met	R	refer
–	not applicable	D	defer

ALPHABETICAL INDEX

IUCN FIELD EVALUATORS

Site	Name
Holqa Sof Umar: Natural and Cultural Heritage (Sof Umar: Caves of Mystery)	Stephen Swabey
Colchic Rainforests and Wetlands	Josephine Langley and Angie Stringer
Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island	Ulrika Aberg and Wendy Strahm
Getbol, Korean Tidal Flat	Bastian Bertzky and Sonali Ghosh
Classical Karst	Kyung-sik Woo and Oliver Avramoski

It should be noted that the IUCN field evaluators are part of a broader evaluation approach detailed in the introduction of this report.

THE IUCN RED LIST OF THREATENED SPECIES

Throughout the report we have indicated the conservation status of each species as recorded in the *IUCN Red List of Threatened Species* at the time of the evaluation, where available; for more information please visit http://www.iucnredlist.org.

Keys to abbreviations:
CR: Critically Endangered
EN: Endangered
VU: Vulnerable
NT: Near threatened
LC: Least Concern
NE: Not Evaluated

THE WORLD HERITAGE CONVENTION
IUCN TECHNICAL EVALUATION REPORT OF WORLD HERITAGE NOMINATIONS
MAY 2020

1. INTRODUCTION

This technical evaluation report of natural and mixed properties nominated for inclusion on the World Heritage List has been conducted by the World Heritage Programme of IUCN (International Union for Conservation of Nature). The World Heritage Programme co-ordinates IUCN's input to the World Heritage Convention in close cooperation with the IUCN Global Protected Areas Programme (GPAP) and other units of IUCN both at headquarters and in the regions. It also works particularly closely with IUCN's World Commission on Protected Areas (WCPA), the world's leading expert network of protected area managers and specialists, with the IUCN Species Survival Commission (SSC) and other IUCN Commissions, as well as the many members and partners of IUCN.

IUCN's evaluations are conducted according to the *Operational Guidelines for the Implementation of the World Heritage Convention* that the World Heritage Committee has agreed, and which are the essential framework for the application of the evaluation process. This framework was updated and revised in 2015, and a revised process documented in Annex 6 of the *Operational Guidelines*, following discussion by the World Heritage Committee. In carrying out its function under the World Heritage Convention, IUCN has been guided by four principles:

(i) ensuring the highest standards of quality control, institutional memory and consistency in relation to technical evaluation, monitoring and other associated activities;

(ii) increasing the use of specialist networks of IUCN, especially WCPA, but also other relevant IUCN Commissions and specialist partner networks;

(iii) working in support of the UNESCO World Heritage Centre and States Parties to examine how IUCN can creatively and effectively support the World Heritage Convention and individual properties as "flagships" for conservation; and

(iv) increasing the level of effective partnership between IUCN and the World Heritage Centre, ICOMOS and ICCROM.

Members of the expert network of WCPA carry out the majority of technical evaluation missions, supported by other specialists where appropriate. The WCPA network now totals almost 3000 members, protected area managers and specialists from over 140 countries. In addition, the World Heritage Programme calls on relevant experts from IUCN's other five Commissions (Species Survival, Environmental Law, Education and Communication, Ecosystem Management, and Environmental, Economic and Social Policy); from international earth science unions, non-governmental organizations and scientific contacts in universities and other international agencies. This highlights the considerable "added value" from investing in the use of the extensive networks of IUCN and partner institutions.

These networks allow for the increasing involvement of regional natural heritage experts and broaden the capacity of IUCN with regard to its work under the World Heritage Convention. Reports from field missions and comments from a large number of external reviewers are comprehensively examined by the IUCN World Heritage Panel, as key inputs to each evaluation. The IUCN World Heritage Programme prepares the final technical evaluation reports, which are presented in this document, and represent the corporate position of IUCN on World Heritage evaluations. IUCN has also placed emphasis on providing input and support to ICOMOS in relation to those cultural landscapes which have important natural values.

IUCN has continued to extend its cooperation with ICOMOS, including coordination in relation to the evaluation of mixed sites and cultural landscapes. IUCN and ICOMOS have also enhanced the coordination of their panel processes as requested by the World Heritage Committee. This cooperation is regularly reported at the sessions of the World Heritage Committee under Item 9B, where IUCN and ICOMOS exchange and coordinate their advice to the Committee, as also noted in the relevant specific reports.

IUCN has endeavoured wherever possible to work in the spirit of the Upstream Process, as will be debated in the relevant items on the Committee's agenda.

2. EVALUATION PROCESS

In carrying out the technical evaluation of nominations, IUCN is guided by the *Operational Guidelines*, specifically Annex 6, which spells out the evaluation process. The evaluation process is carried out over the period of one year, from the receipt of nominations at IUCN in March and the submission of the IUCN evaluation report to the World Heritage Centre in April / May of the following year. The process involves the following steps:

1. **External Review.** The nomination is sent to independent experts knowledgeable about the nominated property or its natural values, including members of WCPA, other IUCN specialist Commissions and scientific networks or NGOs working in the region. IUCN received over 50 external reviews in relation to the properties examined in 2019 / 2020.

2. **Field Mission.** Missions involving one, or wherever possible two or more IUCN experts, evaluate the nominated property on the ground and discuss the nomination with the relevant national and local authorities, local communities, NGOs and other stakeholders. IUCN endeavours, where possible, to ensure mission experts have knowledge and experience in the relevant region. Missions usually take place between July and October. In the case of mixed properties and certain cultural landscapes, missions are jointly implemented with ICOMOS.

3. **IUCN World Heritage Panel Review.** The Panel intensively reviews the nomination dossiers, field mission reports, comments from external reviewers and other relevant reference material, and provides its technical advice to IUCN on recommendations for each nomination. A final report is prepared and forwarded to the World Heritage Centre in April / May for distribution to the members of the World Heritage Committee.

4. **Comparative Analysis**. IUCN commissions UN Environment WCMC to carry out a global comparative analysis for all properties nominated under the biodiversity criteria (ix) and (x) to a standard and publicly available IUCN / WCMC methodology. Following inscription, datasheets are compiled with WCMC.

5. **Communities.** IUCN has enhanced its evaluation processes through the implementation of a series of measures to evaluate stakeholder and rights holder engagement during the nomination process (see below for further details).

6. **Final Recommendations.** IUCN presents, with the support of images and maps, the results and recommendations of its evaluation process to the World Heritage Committee at its annual session in June or July, and responds to any questions. The World Heritage Committee makes the final decision on whether or not to inscribe the property on the World Heritage List.

It should be noted that IUCN has increasingly sought, over many years, to develop and maintain a dialogue with the State Party throughout the evaluation process to allow the State Party every opportunity to supply all the necessary information and to clarify any questions or issues that may arise. IUCN is available to respond to questions at any time, however, there are three occasions on which IUCN may formally request further information from the State Party. These are:

- **Before the field mission.** IUCN sends the State Party, usually directly to the person organizing the mission in the host country, a briefing on the mission, in many cases raising specific questions and issues that should be discussed during the mission. This allows the State Party to prepare properly in advance;

- **Directly after the field mission.** Based on discussions during the field mission, IUCN may send an official letter requesting supplementary information before the IUCN World Heritage Panel meets in December, to ensure that the Panel has all the information necessary to make a recommendation on the nomination; and

- **After the first meeting of the IUCN World Heritage Panel (December).** IUCN continues its practice of ongoing communication with the nominating State/s Party/ies following its Panel meeting. In line with Annex 6 of the *Operational Guidelines,* this communication comprises an interim report to the Parties on the status of the evaluation, sent by the end of January. If the Panel finds that some questions are still unanswered, or further issues need to be clarified, this letter may request supplementary information by a specific deadline. That deadline must be adhered to strictly in order to allow IUCN to complete its evaluation. In view of the importance of the requests for supplementary information, IUCN seeks to complete these letters at least one month before the requested deadline of 31st January. In the present cycle, these letters were all sent before the end of December 2019. It should be noted that in a number of cases, the Panel may not have additional questions, but nevertheless dialogue is invited in all cases.

  It is expected that supplementary information will be in response to specific questions or issues and should not include completely revised nominations or substantial amounts of new information. It should be emphasized that whilst exchanges between evaluators and the States Parties during the mission may provide valuable feedback, they do not substitute for the formal requests for supplementary information outlined above. IUCN has continued to promote additional dialogue with States Parties on the conclusion of its panel process, to allow for discussion of issues that have been identified and to allow more time to prepare discussions at the World Heritage Committee. This has involved face to face meetings in Paris, and in IUCN's offices in Switzerland, and conference calls via Skype or dial-in conferences.

In the technical evaluation of nominated properties, global biogeographic classification systems, such as Udvardy's biogeographic provinces, and the Terrestrial Ecoregion of the World (similarly, freshwater and marine ecoregions of the world in respective environments), are used to identify and assess comparable properties at the global level. These methods make comparisons of natural properties more

objective and provide a practical means of assessing similarity and contrasts at the global level. At the same time, World Heritage properties are expected to contain special features, habitats and faunistic or floristic peculiarities that can also be compared on a broader biome basis. It is stressed that these systems are used as a basis for comparison only and do not imply that World Heritage properties are to be selected based on these systems alone. In addition, global conservation priority-setting schemes such as Key Biodiversity Areas (KBAs) (www.keybiodiversityareas.org), including Important Bird Areas, Alliance for Zero Extinction sites, and systems such as WWF's Global 200 Priority Ecoregions, Conservation International's Biodiversity Hotspots and High Biodiversity Wilderness Areas, Birdlife International's Endemic Bird Areas, and IUCN/WWF Centres of Plant Diversity, provide useful guidance. IUCN in partnership with UN Environment WCMC continues to explore the use of new comparative analyses. The decisive principle is that World Heritage properties are only exceptional areas of Outstanding Universal Value.

The evaluation process is also aided by the publication of a series of reference volumes and thematic studies. In early 2012, a resource manual on the preparation of World Heritage nominations was published under joint lead authorship of IUCN and ICOMOS, and has provided further details on best practices, including the key resources that are available to support nominations. IUCN's range of thematic studies and key references that advise priorities on the World Heritage List are available at the following web address: https://www.iucn.org/theme/world-heritage/resources.

IUCN members adopted a specific resolution on these matters at the IUCN World Conservation Congress in 2012, which remains current, and this resolution *(WCC-2012-Res-047-EN Implementation of the United Nations Declaration on the Rights of Indigenous Peoples in the context of the UNESCO World Heritage Convention)* is available at the following address: https://portals.iucn.org/congress/assembly/motions.
IUCN has continued to implement a range of improved practices within its evaluation process in response to these reviews and reflections, which are focused on the inclusion of a specific section headed "Communities" within each evaluation report, to ensure transparency and consistency of IUCN's advice to the World Heritage Committee on this important issue. These measures include a standard screening form for all evaluation missions, additional consultation with networks specialised in this field, and an expert advisor supporting the IUCN World Heritage Panel.

In 2013, IUCN updated its format for field evaluation reports to include specific questions on communities and to clarify a range of questions and expectations on feedback from evaluators to ensure consistency of reports from field missions. This material is all publicly available at the following web address: https://www.iucn.org/theme/world-heritage/our-work/advisor-world-heritage/nominations.

IUCN has also been actively supporting processes under the mandate of the Ad Hoc Working Group (Decision 43 COM 12) which seek to reform the nomination processes within the frame of the World Heritage Convention and *Operational Guidelines*. IUCN welcomes this constructive dialogue to evolve the working methods of the Convention and considers the work of the Ad Hoc Working Group provides a good model for possible continued dialogue towards effective new procedures for the evaluation process. IUCN has also actively contributed to the Drafting Group to propose concrete changes for the *Operational Guidelines* concerning Preliminary Assessments.

IUCN notes that reform of the evaluation process is constrained fundamentally by the current calendar, and that many of the expectations of States Parties regarding increases in dialogue and transparency require more time to be provided for the evaluation, especially for nominations that are found to not meet requirements of the *Operational Guidelines*. Given the interlinkages between various processes, IUCN considers it essential that a fully integrated package of reforms is agreed as a central priority, and continued reflection on options and additional resources will be required to enable it to be effective, equitable to States Parties, and appropriate in supporting a balanced and representative World Heritage List.

3. THE IUCN WORLD HERITAGE PANEL

Purpose: The Panel advises IUCN on its work on World Heritage, particularly in relation to the evaluation of World Heritage nominations. The Panel normally meets face to face once a year for a week in December. Provisional recommendations are made at this December meeting of the Panel and reviewed at a second meeting or conference call the following March. Additionally, the Panel operates by email and/or conference call, as required.

Functions: A core role of the Panel is to provide a technical peer review process for the consideration of nominations, leading to the formal adoption of advice to IUCN on the recommendations it should make to the World Heritage Committee. In doing this, the Panel critically examines each available nomination document, the field mission report, any supplementary information from States Parties, the UN Environment WCMC Comparative Analysis, comments from external reviewers and other material. This material is then used to help prepare IUCN's advice, including IUCN recommendations relating to inscription under specified criteria, to the World Heritage Committee (and, in the case of some cultural landscapes, advice to ICOMOS). The Panel may also advise IUCN on other matters concerning World Heritage, including the State of Conservation of World Heritage properties and on policy matters relating to the Convention. Though it takes account of the policy context of IUCN's work under the Convention, its primary role is to deliver independent, high quality scientific and technical advice to IUCN, which has the final responsibility for corporate recommendations made to the World

Heritage Committee. Panel members agree to a code of conduct, which ensures ethical behaviour and avoids any conflict of interest.

Membership: Membership of the Panel is at the invitation of the IUCN Director General (or Deputy Director General under delegated authority) through the Director of the World Heritage Programme. The members of the Panel comprise IUCN staff with responsibility for IUCN's World Heritage work, other relevant IUCN staff, Commission members and external experts selected for their high level of experience with the World Heritage Convention. The membership of the Panel comprises:

- The Director, IUCN Nature Culture Initiative (Chair – non-voting)
- The Director, IUCN World Heritage Programme (Non-voting)
- At least one and a maximum of two staff of the IUCN Global Protected Areas Programme
- The IUCN World Commission on Protected Areas (WCPA) Vice Chair for World Heritage
- A representative of the IUCN Species Survival Commission (SSC) appointed on recommendation of the Chair, SSC
- Up to seven technical advisors, invited by IUCN and serving in a personal capacity, with recognised leading expertise and knowledge relevant to IUCN's work on World Heritage, including particular thematic and/or regional perspectives
- As of 2017 / 2018 one position for a specialist in geological heritage, appointed by IUCN following consultation with the International Union of Geological Sciences (IUGS) and the UNESCO Earth Sciences has been introduced.

In the course of 2016, and as previously agreed following the recommendation of the Committee's Ad Hoc Working Group, IUCN introduced a fixed term for Panel members (four years renewable once) and an internal application process, open to IUCN Commission members and IUCN members, to fill vacancies for technical advisors when they arise.

The Panel's preparations and its meetings are facilitated through the work of the World Heritage Evaluations and Operations Officer. Information on the members of the IUCN World Heritage Panel, together with its Terms of Reference (TOR) and the formats for IUCN documentation related to the evaluation process is posted online at the following link: https://www.iucn.org/theme/world-heritage/our-work/advisor-world-heritage/iucn-world-heritage-panel. A senior manager in IUCN (currently the IUCN Global Director, Biodiversity Conservation) is delegated by the Director General to provide oversight at senior level on World Heritage, including with the responsibility to ensure that the Panel functions within its TOR and mandate. This senior manager is not a member of the Panel, but is briefed during the Panel meeting on the Panel's conclusions. The Panel meeting may also be attended by other IUCN staff, Commission members (including the WCPA Chair) and external experts for specific items at the invitation of the Chair.

4. EVALUATION REPORTS

Each technical evaluation report presents a concise summary of the nominated property, a comparison with other similar properties, a review of protection, management and integrity issues and concludes with the assessment of the applicability of the criteria and a clear recommendation to the World Heritage Committee. IUCN also submits separately to the World Heritage Centre its recommendation in the form of a draft decision, and a draft Statement of Outstanding Universal Value for all properties it recommends for inscription. In addition, IUCN carries out field missions and/or external reviews for cultural landscapes containing important natural values, and provides its comments to ICOMOS. This report contains a short summary of these comments on each cultural landscape nomination reviewed.

5. NOMINATIONS EXAMINED IN 2019 / 2020

Nomination dossiers and minor boundary modifications examined by IUCN in the 2019 / 2020 cycle included:

- 4 natural property nominations;
- 1 mixed property nomination, where a joint mission was undertaken with ICOMOS;
- 1 referred nomination;
- 3 cultural landscape nominations; all 3 were commented on by IUCN based on internal and external desktop reviews;
- 2 minor boundary modifications.

6. COLLABORATION WITH INTERNATIONAL EARTH SCIENCE UNIONS

IUCN implements its consideration of earth science values within the World Heritage Convention through a global thematic study on Geological Heritage published in 2005. In addition, collaboration agreements with IUGS and the International Association of Geomorphologists (IAG) focus on strengthening the evaluation process by providing access to the global networks of earth scientists coordinated through IUGS and IAG. IUCN would like to record its gratitude to IUGS and IAG for their willingness to provide support to IUCN in fulfilling its advisory role to the World Heritage Convention.

7. RECOMMENDATIONS TO THE WORLD HERITAGE COMMITTEE

In the 2019 / 2020 cycle, IUCN has sought to ensure that States Parties have the opportunity to provide all the necessary information on their nominated properties through the process outlined in section 2 above. As per the provisions of the *Operational Guidelines*, and Decision 30 COM 13 of the World Heritage Committee (Vilnius, 2006), IUCN has not taken into consideration or included any information submitted by States Parties after 28 February 2020, as evidenced by the postmark. IUCN has previously noted a number of points for improvement in the

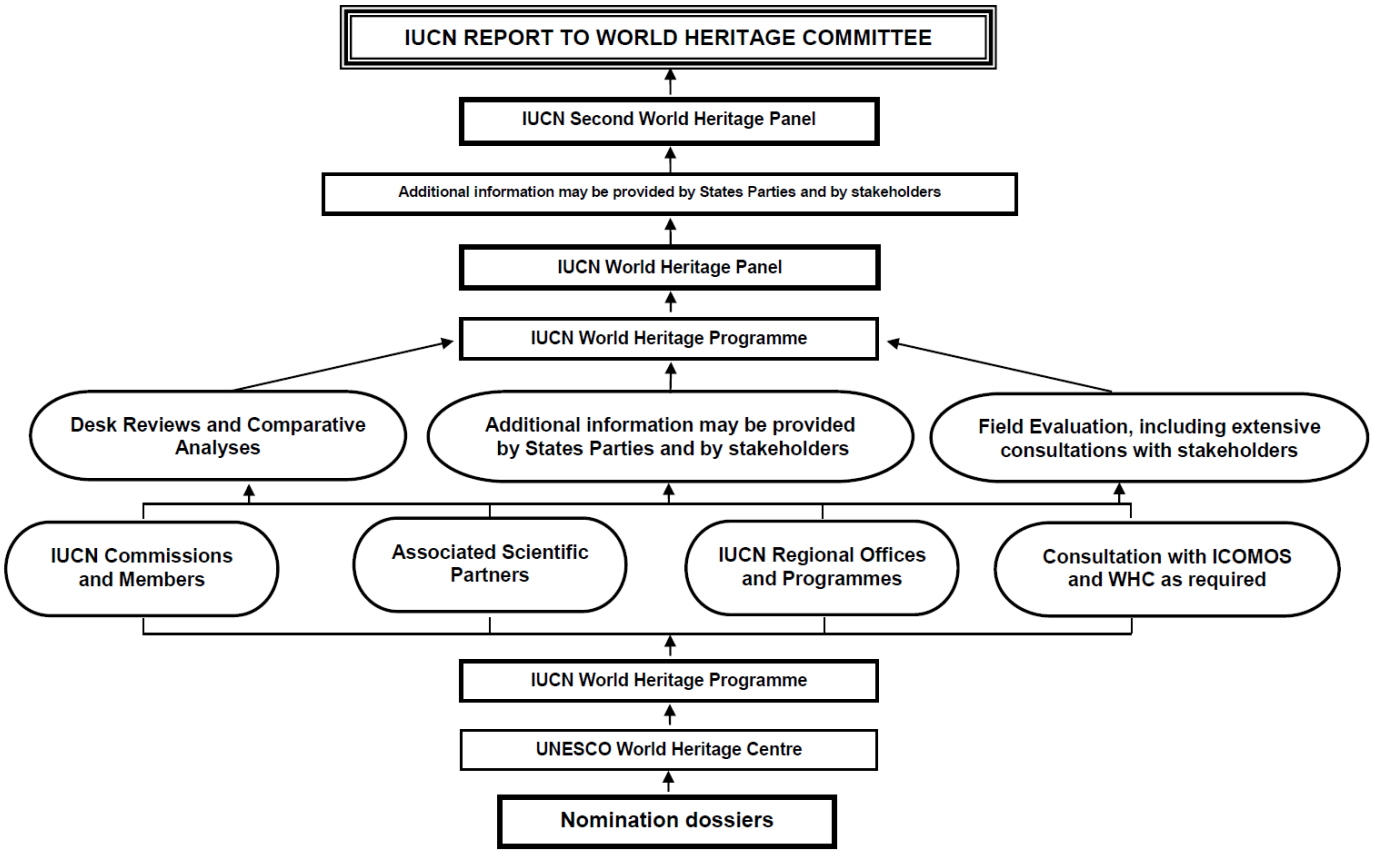
evaluation process, and especially to clarify the timelines involved.

The finalisation of this IUCN evaluation report took place following the required calendar for evaluations, and was finalised on 11 May 2020. At the time of finalisation the postponement of the 44th Session of the World Heritage Committee had been announced, in response to the outbreak of the COVID-19 pandemic, but a new date for the meeting that will consider the present evaluation report has not been announced. The reports in this evaluation book were finalised based on the statutory deadline of 28 February 2020 for information supplied by the State Party, and thus all information that has been considered dates at the latest from the time of the second and final IUCN World Heritage Panel, held in March 2020. At the time of submission of this report it is anticipated that the World Heritage Committee will be postponed, to an unknown date.

8. ACKNOWLEDGEMENTS

As in previous years, this report is a group product to which a large number of people have contributed. Acknowledgements for advice received are due to the external evaluators and reviewers, many of them from IUCN's members, Commissions and Networks, and numerous IUCN staff at Headquarters and in IUCN's Regional and Country Offices. Many others contributed inputs during field missions. This support is acknowledged with deep gratitude.

Figure 1: IUCN Evaluation Process



A. NATURAL PROPERTIES

A1. NEW NOMINATIONS OF NATURAL PROPERTIES

ASIA / PACIFIC

AMAMI-OSHIMA ISLAND, TOKUNOSHIMA ISLAND, NORTHERN PART OF OKINAWA ISLAND, AND IRIOMOTE ISLAND

JAPAN

Akatsuchiyama Viewpoint in Amamigunto National Park on Amami-Oshima Island © IUCN / Ulrika Åberg

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

AMAMI-OSHIMA ISLAND, TOKUNOSHIMA ISLAND, NORTHERN PART OF OKINAWA ISLAND, AND IRIOMOTE ISLAND (JAPAN) – ID N° 1574

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To inscribe the property under natural criterion (x).

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: This nomination was first submitted in 2017. IUCN recommended to defer the nomination as the nominated property did not meet the integrity requirements of the *Operational Guidelines*. Protection and management requirements were met; however, protection and management, including buffer zones, would need to be reconsidered as part of the revisions required to the nomination. The nomination was withdrawn at the request of the State Party (Decision 42 COM 8B.8) with a new nomination submitted in 2019.

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1. DOCUMENTATION

a) Date nomination received by IUCN: Original nomination received in February 2017. New nomination received in February 2019.

b) Additional information officially requested from and provided by the State Party: Following the IUCN field mission, the State Party submitted additional information on the nominated property, including details on boundaries, existing and planned infrastructure, and measures against invasive species. Following the IUCN World Heritage Panel a progress report was sent to the State Party on 27 December 2019. This letter advised on the status of the evaluation process and sought responses and clarifications on timber extraction, river restoration, potential buffer zone extensions, tourism management and climate change. The State Party submitted additional information on 26 February 2020.

c) Additional literature consulted: Various sources, including: Itô, Y., Miyagi, K. and Ota, H. (2000). Imminent extinction crisis among the endemic species of the forests of Yanbaru, Okinawa, Japan. *Oryx* 34(4): 305-316; Jemali, N.J.N.B., Shiba, M., and Zawawi, A.A. (2015). Strategic forest management options for small-scale timber harvesting on Okinawa Island, Japan. *Small-scale forestry,* 14(3): 351-362; Motokawa, M. (2000). Biogeography of Living Mammals in the Ryukyu Islands. *Tropics* 10(1): 63-71; Natori, Y., Kohri, M., Hayama, S., and De Silva, N. (2012). Key Biodiversity Areas identification in Japan Hotspot. *Journal of Threatened Taxa,* 4(8): 2797-2805; Ota, H. (1998). Geographic patterns of endemism and speciation in amphibians and reptiles of the Ryukyu Archipelago, Japan, with special reference to their paleogeographical implications. *Researches on Population Ecology,* 40(2): 189-204; Ota, H. (2000). The Current geographic faunal pattern of reptiles and amphibians of the Ryukyu Archipelago and adjacent regions. *Tropics* 10(1): 51-62; Ozaki, K., Yamamoto, Y., Yamagishi, S. (2010). Genetic diversity and phylogeny of the endangered Okinawa Rail, Gallirallus okinawae. *Genes and Genetic Systems,* 85: 55-63; Saitoh, T., Kaji, K., Izawa, M., and Yamada, F. (2015). Conservation and management of terrestrial mammals in Japan: its organizational system and practices. *Therya,* 6(1): 139-153; Somiya, K. (2015). Conservation of landscape and culture in southwestern islands of Japan. *Journal of Ecology and Environment*, 38(2): 229-239; Song, D. and Kuwahara, S. (2016). Ecotourism and world natural heritage: Its influence on islands in Japan. *Journal of Marine and Island Cultures*, 5(1): 36-46; Sugimura, K., Sato, S., Yamada, F., et al. (2000). Distribution and abundance of the Amami rabbit Pentalagus furnessi in the Amami and Tokuno Islands, Japan. *Oryx.* 34: 198-206; Suzuki, M., Inoue, E., Ito, K., and Fujita, S. (2017). Assessment of the Impact of Wildlife Tourism on Animals: A Case Study of Amami-Oshima Island. *Future Collaboration on Island Studies between Pattimura University and Kagoshima University*, p.45; Watanabe, S., Nakanishi, N., and Izawa, M. (2005). Seasonal abundance in the floor-dwelling frog fauna on Iriomote Island of the Ryukyu Archipelago, Japan. *Journal of Tropical Ecology*, 21(1): 85-91; WWF Japan (2009). Nansei Islands Biological Diversity Evaluation Project Report, Tokyo: WWF Japan; Yamada, F. (2008). A Review of the Biology and Conservation of the Amami Rabbit (*Pentalagus furnessi*). In: Alves, P.C., Ferrand, N., Hackländer, K. (eds) *Lagomorph Biology*. Springer, Berlin, Heidelberg.

d) Consultations: 5 desk reviews received, in addition to 10 desk reviews of the 2017 nomination. The field evaluation mission met with a wide range of stakeholders including senior officials from the Ministry of Environment (and rangers for each island), the Forestry Agency (national and district), the Japanese Wildlife Research Center; all 12 mayors of the municipalities in the nominated area and senior members of Kagoshima and Okinawa Prefectures; senior managers of the airline operating in the region;

various representatives of ecotourism and non-profit organisations; and a brief meeting with the US military Director of Environmental Affairs on Okinawa.

e) Field Visit: Ulrika Åberg and Wendy Strahm, 5-12 October 2019

f) Date of IUCN approval of this report: May 2020

2. SUMMARY OF NATURAL VALUES

The nominated property "Amami-Oshima Island, Tokunoshima Island, the northern part of Okinawa Island, and Iriomote Island" encompasses 42,698 ha of subtropical rainforests on four islands on a chain located in the southwest of Japan. The serial nominated property includes five entirely terrestrial component parts on four islands, which stretch over 700 km from the northeast to the southwest. This island arc lies on the boundary of the East China Sea and Philippine Sea, and consists of more than 900 islands (about 70 inhabited). The highest point in the nominated property is Mount Yuwandake on Amami-Oshima Island with an elevation of 694 m.a.s.l.

District	Nominated component parts	Area (ha)	Buffer zones (ha) as in nomination	Buffer zones (ha) as amended in suppl. information
Kagoshima	Amami-Oshima Island	11,640	14,505	14,663
	Tokunoshima Island (a)	1,724	1,813	1,813
	Tokunoshima Island (b)	791	999	999
Okinawa	Northern part of Okinawa Island	7,721	3,398	3,398
	Iriomote Island	20,822	3,594	3,594
	TOTAL	42,698	24,309	24,467

Table 1. Component parts constituting the nominated property, Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island

The coastal areas of the islands are for the most part highly modified, but relatively large tracts of subtropical rainforest remain in the mountains and hills. These forests are not pristine, having been historically heavily exploited, but following protection measures the forests have recovered rapidly and are in good condition. Since the forests are essential watersheds for the populated islands (Okinawa has 1.4 million people living mostly in the south, Amami-Oshima 73,000, Tokunoshima 12,000 and Iriomote 2,300), there are also a number of dams and modified rivers occurring within the component parts.

However, the nominated property is entirely uninhabited by humans, as is almost the entire buffer zone. High biodiversity values, with a very high percentage of endemic species, have for the most part been conserved. The habitats of the nominated property support many globally threatened species and each component part has its own characteristic endemic species. The islands show a marked biogeographic stratification from north to south, and fall into an important biogeographic transition zone between the Palearctic and Indo-Malayan realms, where subtropical, tropical and temperate species mix. The nominated area lies within two Udvardy biogeographical provinces. Amami-Oshima Island, Tokunoshima Island and Okinawa Island are located in the Palearctic Realm and within Udvardy's Ryukyu Islands Biogeographic Province (RIBP), Iriomote Island lies in the Indo-Malayan Realm and within Udvardy's Taiwan Biogeographic Province (TBP).

While this nominated property covers only a small land area of Japan, it supports an exceptionally large proportion of the country's flora and fauna. Most importantly, it hosts a high proportion of endemic species, including plants, mammals, birds, reptiles, amphibians, inland water fish and decapod crustaceans. These include for instance the Amami Rabbit (*Pentalagus furnessi* - EN) and the Ryukyu Long-haired Rat (*Diplothrix legata* - EN)] that represent ancient lineages and have no living relatives anywhere in the world. Five mammal species, three bird species, and three amphibian species in the nominated property have been identified globally as Evolutionarily Distinct and Globally Endangered (EDGE) species. There are also a number of different endemic species confined to each respective island that are not found elsewhere in the nominated property. The serial site also overlaps with three Key Biodiversity Areas and two Alliance for Zero Extinction sites.

The major changes compared to the original nomination include, firstly, that new nomination no longer proposes inscription under criterion (ix) and focuses on criterion (x) only, in line with IUCN's recommendation of 2018. Secondly, the new nomination incudes a merge and combination of 24 small and scattered component parts into five larger component parts, as well as the integration of a part of the Northern Training Area, a military area returned to Japan from the USA, into the Okinawa Island component part. More details on the original nomination can be found in the IUCN World Heritage Evaluations 2018 (WHC/18/42.COM/INF.8B2).

With the revised boundaries, the nomination intends to improve connectivity to more effectively represent and protect above-mentioned natural values.

3. COMPARISONS WITH OTHER AREAS

In its 2018 evaluation, IUCN considered that the nominated property is seeking to protect values clearly of outstanding importance within the Japan biodiversity hotspot. The Committee's attention is drawn to that previous comparative analysis, which is not repeated here for brevity, and remains relevant to the revised nominated property.

The comparative analysis in the new nomination dossier compares the nominated property to the other four natural World Heritage properties in Japan as well as 11 properties in other countries for regional and

global comparison. In the national comparison, the nominated property records more species than the other properties in most taxa (insects, amphibians, reptiles, and birds). It is second only to the Yakushima property in vascular plants and in terrestrial mammals it is second only to the Shiretoko property (which is in a very different ecosystem).

In addition to plants, the nomination highlighted seven groups of animals with high biodiversity values, which included mammals, birds, reptiles, amphibians, inland water fish, insects and inland water decapod crustaceans. However, the comparative analysis only focused on EDGE species (Evolutionarily Distinct and Globally Endangered, i.e. mammals, birds, reptiles and amphibians), excluding aquatic species. A more comprehensive analysis would have been useful to understand the importance of freshwater biodiversity in comparison with other places, as highlighted by the nomination, and relevant to understand integrity issues concerning aquatic species in the nominated property.

IUCN recalls that in collaboration with UN Environment Programme World Conservation Monitoring Centre, supplementary comparative analysis was undertaken in 2017. The reconfigured nominated property overlaps at more than 95% with two protected areas listed amongst the top 1% most irreplaceable in the world for the conservation of mammals, birds and amphibians: Iriomote Island overlaps with Iriomote National Park, while the northern part of Okinawa Island overlaps with Kinsakubaru. It should however be noted that recently designated national parks, which could overlap with the nominated property, are not yet integrated in the World Database on Protected Areas (WDPA) and therefore could not be included in the irreplaceability analysis.

The nominated property is found in the Nansei Shoto Archipelago Forests terrestrial Global 200 priority ecoregion, which is represented by only one site on the World Heritage List: Yakushima, in Japan, inscribed under criteria (vii) and (ix). Yakushima is located in the North of the archipelago and belongs to a different Udvardy's biogeographical province (Japanese Evergreen Forest). The nominated property is also part of an Endemic Bird Area (EBA), Nansei Shoto, already represented by one site on the World Heritage List, also Yakushima. This EBA comprises all islands lying between Kyushu and Taiwan.

The UN Environment WCMC analysis compared species numbers in the nominated property with natural World Heritage sites both in the same terrestrial hotspot and tropical or subtropical islands of similar size. The nominated property includes more documented species of plants and birds than any of the compared World Heritage properties, and higher for all except two in mammal and fish species. The insect biodiversity of the nominated property is also notable, with a total of 6,148 species inhabiting the four islands, mostly Coleoptera (beetles) and Lepidoptera (butterflies and moths) that account for half of the number of insect species.

In summary, and noting also the evaluation of the previous nomination, IUCN considers that comparisons strongly support the justification for inscription in relation to criterion (x).

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

Most of the nominated property is situated in the most strictly protected zones (Class I and Special Protection Zone) of three National Parks (IUCN Category II or higher), with smaller areas in "Preservation Zones" and "Forest Ecosystem Reserves", still under Class I protection. A few small areas occur in Class II protection zones, but the State Party states that the landowners have agreed for these areas to also have Class I protection. Therefore, the nominated property receives the highest national protection in the Japanese protected area system.

The buffer zones are also legally protected and in very good condition. In many places, it is impossible to distinguish between the nominated core area and the buffer zone, and some buffer zones could probably have been included in the nominated property. However, the State Party has been very careful about only including the most highly protected areas in the core area.

Almost all of the component parts of the nominated property on Okinawa, Tokunoshima and Iriomote are public lands owned and managed by a public body (national or local government), with only 4% under private or unknown ownership. Amami-Oshima Island currently includes more private land (33%) although it is stated that there is an ongoing process of gradual transition to public ownership. For the buffer zone, in total 49% is public land with the remainder under private ownership. While the areas under private ownership mostly belong to forestry companies, owners are reportedly in agreement with the constraints of the forestry management system imposed by the National Park (see section 4.5).

IUCN considers that the protection status of the nominated property meets the requirements of the *Operational Guidelines*.

4.2 Boundaries

Boundary and design issues identified in the 2017 nomination were thoroughly reviewed in the first evaluation, and subsequent to the first evaluation these have been reviewed by the State Party, who also received input from the original field evaluators..

That process of advice following the original nomination recommended that land returned to Japan from the United States' Northern Training Area on Okinawa be included in the nomination. More than half of the Northern Training Area, now called the Jungle Warfare Training Center (JWTC), was returned to Japan in December 2016, with 2,793 ha incorporated into the nominated property. However, there is an

anomaly in the configuration of the Okinawa component part of the nominated property, with a long strip of the JWTC protruding into the nominated property, but not included in it.

It was further recommended that the previous 24 component parts of the nomination be reduced in number and consolidated to improve connectivity. This has been achieved through the integration of some of the original buffer zone areas into the nominated property, the removal of smaller, isolated component parts that could not be connected, and the addition of some less strongly protected areas to improve the configuration of the buffer zone (in compliance with *Operational Guidelines* on buffer zones). Additional private land on Amami-Oshima was purchased to improve connectivity.

In supplementary information, the State Party confirmed the extension of the buffer zone on Amami-Oshima Island by 158 ha to include (a) the Yakugachi River mouth and mangrove forest and (b) Katoku River and the neighboring beach areas. The latter extension was agreed with the respective municipalities and local communities on the condition that an already approved seawall would proceed to construction on Katoku Beach in order to protect a settlement. The State Party also confirmed that Katoku River, the last free-flowing river within the Amami-Oshima Island component part, will not be subject to any new constructions of river structures in the future. The State Party noted that the seawall would be distant enough to avoid negative impacts on the river. Environmental monitoring will be continued after the construction works have finished with the possibility of improvement plans in case of unexpected negative impacts.

Overall, IUCN considers that the boundaries of the five component parts have been carefully selected to ensure that they capture the key values and that the entire nominated property has high levels of protection. Connectivity has been greatly improved with boundary changes modified from the 2017 nomination. There remain some compromises, but the result represents an effective solution to protect the OUV of the nominated property.

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

4.3 Management

There is a comprehensive Management Plan for the nominated property, as well as for the buffer zones and surrounding conservation areas. IUCN considers that the nominated property has an adequate management plan, but notes the large number of action plans yet to be implemented, given the relatively recent designation of the protected areas. The extent and resources for comprehensive monitoring, especially of endemic and endangered species, habitat quality and invasive alien species, has been highlighted as an issue, with the State Party providing supplementary information showing how they plan to monitor the nominated property. A “Master Plan of the Amami Island Group Sustainable Tourism” has been implemented for Amami-Oshima and Tokunoshima since 2016, while the “Sustainable Tourism Master Plan of the Northern Part of Okinawa Island” and the “Visitor Control Master Plan for Sustainability of Iriomote Island” were only completed in February 2020, with several regulations and measures to control visitor numbers still to be realised.

While the Ministry of the Environment (MOE) is responsible for the management of the National Parks, a Regional Liaison Committee, bringing together the different administrations responsible for management (MOE, Forestry Agency, Agency for Cultural Affairs, Kagoshima and Okinawa Prefectures, and 12 municipalities) has been established to coordinate their work. Under this Regional Liaison Committee, meetings with local stakeholders have been set up, and regional action plans formulated to effectively carry out conservation and management of the nominated property. There is also an advisory Scientific Committee contributing to management decisions.

The information provided on finance referred to the National Park system and Forestry Agency as a whole, rather than giving specific budgets for each of the component parts in the nomination. However, as the nominated property is part of the National Park and Forest Reserve system, funding appears to be assured, with the prefectures and municipalities also providing funding.

IUCN considers that the management of the nominated property meets the requirements of the *Operational Guidelines*.

4.4 Community

There are no people living within the boundaries, and only two villages within the buffer zones, on Amami-Oshima. IUCN received a number of letters stating that public consultation and consent had not been adequate, particularly on Iriomote Island, and there still seem to be a number of residents on Iriomote opposed to inscription. The management authority on the other hand listed the number of public consultations and contends that public consultation and information have been adequate. IUCN notes that some stakeholder concerns relate to wider matters than World Heritage listing. Based on the inputs from two field missions, and the exchanges with the State Party, IUCN considers that there is acceptable evidence of community support for the nomination, noting that there will be a continued need for the State Party to engage with and support local communities, and to listen to and respond on any issues that are raised.

4.5 Threats

The management of the nominated property is contending with many invasive alien species as well as feral cats and several measures have been put in

place to address the issue. The Indian Mongoose (*Herpestes edwardsi*), introduced during the 20th century, has nearly been eradicated from Amami-Oshima, but is still posing a major threat to endemic and threatened species on Okinawa. Cane Toads (*Rhinella marina*) have been eradicated from Iriomote, but there is danger of reintroduction from the neighboring island of Ishigaki. There are action plans and local community efforts to control several invasive plant species, including "Mile-a-minute" (*Mikania micrantha*) and "Creeping Daisy" (*Sphagneticola trilobata*) present in the nominated property.

Illegal collection of plants and animals, including orchids and ginger, reptiles, amphibians and beetles, is an issue of great concern. An action plan including municipal night patrols and closure of roads to traffic at night has been put in place. However, there is an urgent need for increased and stricter conservation measures to be taken, especially with regard to the collection of freshwater turtles and other species.

Species such as the Amami Rabbit, Iriomote Cat, Okinawa Rail and various snakes are frequently killed on the roads that cross the nominated property. Nine Iriomote Cats were killed in traffic accidents in 2018, out of an estimated population of only 100 cats. While there are numerous warning signs, speed bumps, speed limits of 30 km/h and underpasses, there are still a large number of threatened species being killed. With increased tourism and vehicles in the protected areas, the risk of roadkill is anticipated to increase.

Tourism in the region has been increasing, with more than seven million visitors in 2013, increasing to more than 10 million in 2017. On Iriomote alone, the least-developed island, there is an average of 352,000 visitors per year, a ratio of more than 150 tourists per inhabitant. While on Iriomote most of the tourists visit the nominated area, it is more difficult to identify the percentage of people visiting the respective nominated areas on the other islands. In addition to roadkill, threats caused by tourism include the increased likelihood of introducing and spreading invasive alien species and poaching threatened wildlife. In the supplementary information, the State Party provided newly completed tourism master plans for Iriomote Island and the Northern part of Okinawa Island, in addition to the master plan for the Amami Island Group provided in the nomination file.

The State Party has confirmed in supplementary information that no forestry operations are allowed within the nominated property, and logging in the buffer zone is limited to two-hectare plots, and not adjacent to past sites still regenerating. While forestry and soil run-off could still pose a threat to the OUV, at this point in time, the risks of significant impact appears to be minor as long as intervention levels are not increased or implemented closer to the nominated property. IUCN is concerned that some of the forestry techniques in the buffer zone appear to be clear felling, and considers that there is a need to limit further the forestry operations in the buffer zone over time.

The State Party has made assurances that no new infrastructure is intended to be built in addition to the existing facilities already present in the nominated property. There is an on-going court case about the construction of a sea wall in Katoku beach on Amami-Oshima, which, following the boundary changes confirmed in the supplementary information, is now included in the buffer zone (see section 4.2). In general, the rivers on the islands have been subject to significant modification for water use and flood protection, negatively impacting several endemic and threatened species dependent on natural freshwater processes and habitats. However, the State Party reports nature-oriented river management and measures are nowadays pursued to reduce hard engineering river structure impacts on inland water species.

Overall, IUCN notes with concern the number of threats that have the potential to affect the OUV of the nominated property, but acknowledges the State Party's commitment and actions to address them. The effectiveness of the measures will need to be assessed carefully and regularly, informing adaptive management and additional action, where necessary.

In conclusion, IUCN considers that the integrity, protection and management of the nominated property meet the requirements of the *Operational Guidelines*.

5. ADDITIONAL COMMENTS

5.1 Consideration in relation to serial properties

a) What is the justification for the serial approach?
For criterion (x), there is no one large block of subtropical rainforest which contains a sufficiently high percentage of the biodiversity values of the archipelago to demonstrate its OUV. Therefore, the proposal to present five large and mostly intact areas of subtropical rainforest on four islands in the geological chain, which include some 90% of the endemic and threatened species of the Central and Southern Islands of the archipelago, is justified.

b) Are the separate component parts of the nominated property functionally linked in relation to the requirements of the Operational Guidelines?
Despite the distance between the islands, they are linked by having the same geological history and very similar subtropical forest habitat and associated flora and fauna. The component parts share the same general evolutionary and ecological processes which together support most of the relevant endemic and threatened terrestrial biodiversity.

c) Is there an effective overall management framework for all the component parts of the nominated property?
The MOE is responsible for the management of the National Parks. Further, a Regional Liaison Committee, bringing together the different administrations responsible for management has been established to coordinate their work. However, it is noted that more engagement between the two prefectures (Kagoshima Prefecture to the north, and

Okinawa Prefecture to the south) would be desirable.

6. APPLICATION OF CRITERIA

Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island (Japan) has been nominated under natural criterion (x).

Criterion (x): Biodiversity and threatened species
The nominated property contains natural habitats of outstanding importance for in situ conservation of the unique and diverse biodiversity of the central and southern part of the archipelago in which the nominated property is located. The five component parts constituting the nominated property are located in one of the 200 ecoregions considered most crucial to the conservation of global biodiversity. The subtropical rainforests of the nominated property are the largest remaining in the region and harbour a very rich flora and fauna, boasting at least 1,819 vascular plants, 21 terrestrial mammals, 394 birds, 267 inland water fish, 36 terrestrial reptiles and 21 amphibians. These include approximately 57% of the terrestrial vertebrates of the biodiversity hotspot of Japan, including 44% of species endemic to Japan as well as 36% of Japan's globally threatened vertebrates.

Among species listed on IUCN Red List of Threatened Species are the Amami Rabbit, only found on Amami-Oshima and Tokunoshima Islands and the only species in its genus, with no close relatives anywhere in the world, and the flightless Okinawa Rail, endemic to the Northern part of Okinawa Island. Spiny rats form an endemic genus consisting of three species endemic to each of the three respective islands, and the Iriomote Cat, which only inhabits Iriomote.

Speciation and endemism are high for many taxa. For example, 188 species of vascular plants and 1,607 insect species are endemic within the four islands of the nominated property. Rates of endemism among terrestrial mammals (62%), terrestrial reptiles (64%), amphibians (86%), and inland water crabs (100%) are also high. Twenty species are identified as Evolutionarily Distinct and Globally Endangered (EDGE) species, including the Okinawa Spiny Rat, Ryukyu Black-Breasted Leaf Turtle, and Kuroiwa's Ground Gecko.

IUCN considers that the nominated property meets this criterion.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B and WHC/20/44.COM/INF.8B2;

2. Inscribes **Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island (Japan)** on the World Heritage List under criterion (x);

3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis
Amami-Oshima Island, Tokunoshima Island, the northern part of Okinawa Island, and Iriomote Island is a terrestrial serial property covering 42,698 ha comprised of five component parts on four different islands (with Tokunoshima Island having two component parts). Influenced by the Kuroshio Current and a subtropical high-pressure system, the property has a warm and humid subtropical climate and is covered mainly with evergreen broadleaved subtropical rainforests.

The formation of the Okinawa Trough in late Miocene resulted in the separation of a chain from the Eurasian Continent, forming an archipelago of small islands. Terrestrial species became isolated on these small islands and evolved to form unique and rich biota. The islands included in the property support many examples of endemic species of terrestrial vertebrate groups and plants that were not able to cross between these islands or adjoining landmasses.

Thus, the property is of high global value for the protection of many endemic and globally threatened species, and contains the most important and significant remaining natural habitats for in-situ conservation of the unique and rich biodiversity of the central and southern part of the archipelago.

Criteria

Criterion (x)
The property contains natural habitats of outstanding importance for in-situ conservation of the unique and diverse biodiversity of the central and southern part of the archipelago in which the property is located. The five component parts constituting the property are located in one of the 200 ecoregions considered most crucial to the conservation of global biodiversity. The subtropical rainforests of the property are the largest remaining in the region and harbour a very rich flora and fauna, boasting at least 1,819 vascular plants, 21 terrestrial mammals, 394 birds, 267 inland water fish, 36 terrestrial reptiles and 21 amphibians. These include approximately 57% of the terrestrial vertebrates of the biodiversity hotspot of Japan, including 44% of species endemic to Japan as well as 36% of Japan's globally threatened vertebrates.

Among species listed on IUCN Red List of Threatened Species are the Amami Rabbit, only found on Amami-Oshima and Tokunoshima Islands and the only species in its genus, with no close relatives anywhere in the world, and the flightless Okinawa Rail, endemic to the Northern part of Okinawa Island. Spiny rats form an endemic genus consisting of three species endemic to each of the respective three islands, and the Iriomote Cat, which only inhabits Iriomote Island.

Speciation and endemism are high for many taxa. For example, 188 species of vascular plants and 1,607 insect species are endemic within the four islands of the property. Rates of endemism among terrestrial mammals (62%), terrestrial reptiles (64%), amphibians (86%), and inland water crabs (100%) are also high. Twenty species are identified as Evolutionarily Distinct and Globally Endangered (EDGE) species, including the Okinawa Spiny Rat, Ryukyu Black-Breasted Leaf Turtle, and Kuroiwa's Ground Gecko.

Integrity

The property is the best representation of the archipelago in which it is located and contains the richest biota in Japan, one of the world's biodiversity hotspots. The boundaries of the five component parts have been carefully selected to ensure that the entire property is strictly protected and that they capture the key values and demonstrate a generally high degree of connectivity, wherever it is possible to achieve this. It will be crucial to ensure that buffer zones are actively managed to support the attributes of the property's OUV and that activities such as logging do not create adverse impacts.

The four islands that host the property consist of mountains and hills with intact and contiguous subtropical rainforests that secure particularly stable habitats for approximately 90% of native species, endemic species and globally threatened species of the central and southern part of the archipelago. There are important naturally functioning freshwater systems, but with some natural values that have been impacted by hard, engineered infrastructure and which could be restored to a more natural function.

The five component parts of the property have intact subtropical forests and other habitats, including many areas of substantial size. These are selected to include the most important current and potential distributional areas of endemic species and threatened species, and are key attributes expressing the Outstanding Universal Value of this property.

Protection and management requirements

The property is under the strictest protection in the Japanese system of nature conservation areas, and its component parts are designated as Special Protection Zones or Class I Special Zones managed by the Ministry of the Environment and/or Preservation Zones of Forest Ecosystem Reserves managed by the Forestry Agency. In addition, the property is designated as a National Wildlife Protection Area and Natural Monument Protection Area. The property thus receives adequate management resources and appropriate long-term protection. Some of the endemic species and/or threatened species of the property, such as the Amami Rabbit, three species of the Spiny Rat, Okinawa Rail and Iriomote Cat, have been designated and legally protected as National Endangered Species and/or National Natural Monuments.

The four islands of the property are inhabited, with residential areas and industrial activities located close to the habitats for endemic and threatened species. Buffer zones are included adjacent to the property, mainly in the Class II Special Zone of a national park and/or the Conservation and Utilization Zone of a Forest Ecosystem Reserve. In addition, Surrounding Conservation Areas encompassing the property and the buffer zones are designated under the Comprehensive Management Plan.

Administrations at all levels, i.e. the Ministry of the Environment, the Forestry Agency, the Agency for Cultural Affairs, Kagoshima and Okinawa Prefectures, and 12 municipalities, have established a Regional Liaison Committee to facilitate and coordinate management of multilayered protected areas and the protection of designated species. They manage the property according to a Comprehensive Management Plan, which covers conservation measures not only in the property but also in the buffer zones and surrounding conservation areas.

Key threats to the property include potential impacts from tourism, posing significant threats to wildlife in some areas, including Iriomote Island. Further threats include impacts from invasive alien species such as the small Indian Mongoose and cats, wildlife roadkill and the illegal collection of wild rare and threatened species. In order to address these threats, the risks to the property are prevented or mitigated by various measures implemented through collaboration among related administrative agencies, private organizations and local communities. In recent years, the tourism industry has increased and sustainable levels of tourism need to be fully assessed and continuously monitored. Invasive alien species and roadkill, especially the potentially critical impact of traffic on endangered species including the Iriomote Cat, need to be kept at an absolute minimum and strictly monitored, and illegal collection of wild rare and threatened species prevented. There is the need to develop a comprehensive river restoration strategy in order to transition wherever possible from hard infrastructure to employ nature-based techniques and rehabilitation approaches. Activities in the buffer zones, including very limited traditional timber extraction that takes place, also require continued vigilance and to be strictly limited and monitored.

4. Commends the State Party for its commitment towards the conservation of this property and for its efforts in revising its original nomination (42 COM 8B.8) to address questions of integrity.

5. Requests the State Party to take immediate steps to improve the protection and management of the property, including by:

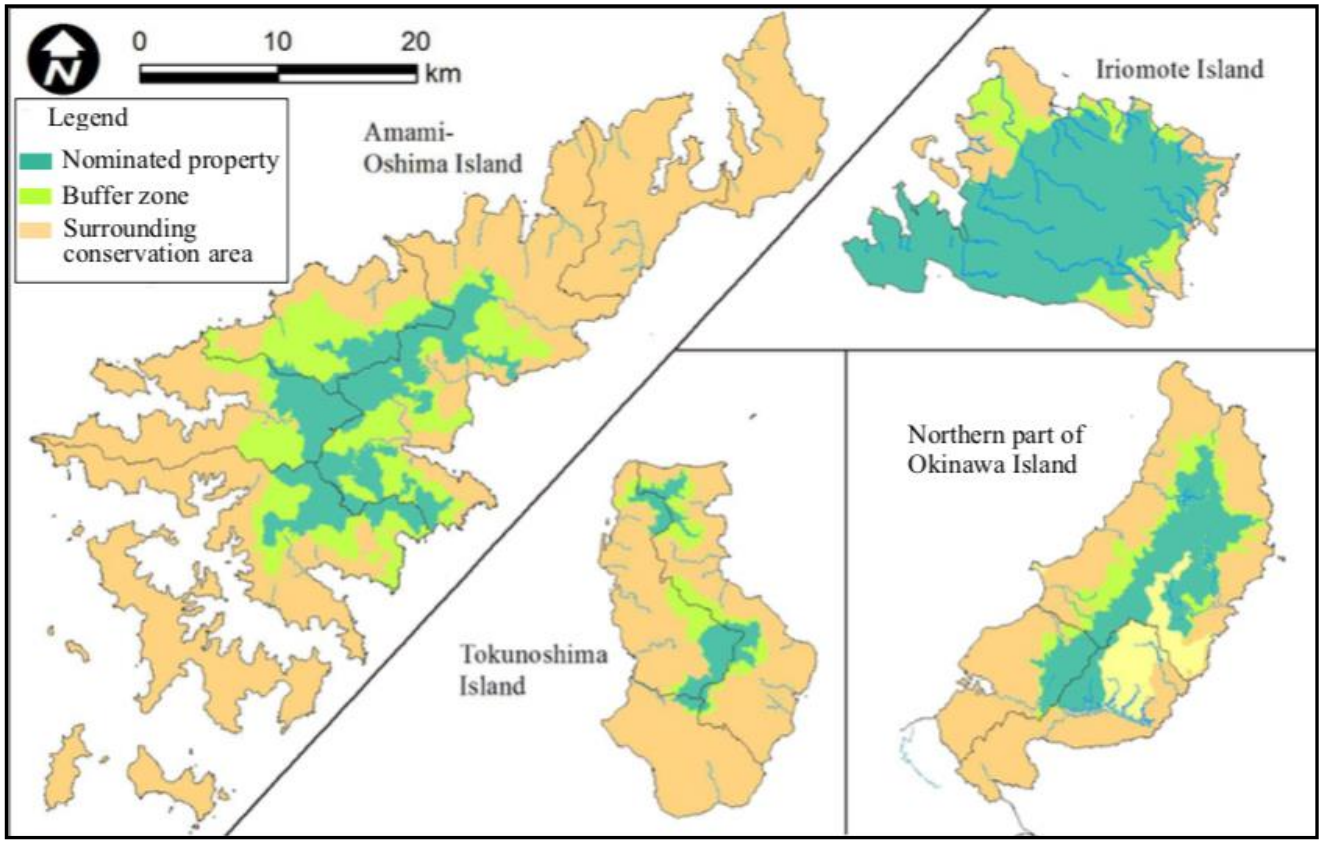
a) Capping or reducing levels of tourist visitation from current levels, especially on Iriomote Island, until a critical evaluation of tourism carrying capacity and impacts can be conducted and integrated into a revised tourism management plan,
b) Urgently reviewing the effectiveness and strengthening if necessary the traffic management measures designed to reduce road fatalities of endangered species

(including but not limited to Amami Rabbit, Iriomote Cat, and Okinawa Rail);

c) Developing a comprehensive river restoration strategy in order to transition wherever possible from hard, engineered infrastructure to employ nature-based techniques and rehabilitation approaches such as replenishment, vegetation, and the formation of different habitat types;
d) Capping or reducing logging operations in the buffer zones from current levels, both in number and combined size of individual harvesting areas, and ensuring that any logging remains strictly limited to the buffer zones;

6. Also requests the State Party to report on progress and the results of these actions to the World Heritage Centre, for review by IUCN, by **1 December 2022**.

Map 1: Nominated property and buffer zone



ASIA / PACIFIC

GETBOL, KOREAN TIDAL FLAT

REPUBLIC OF KOREA

Aerial view of Shinan Getbol © IUCN / Bastian Bertzky

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

GETBOL, KOREAN TIDAL FLAT (REPUBLIC OF KOREA) – ID N° 1591

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To defer the nomination under natural criteria

Key paragraphs of Operational Guidelines:
Paragraph 77: Nominated property does not meet World Heritage criteria (viii) and (ix), and has potential, if revised, to meet criterion (x).
Paragraph 78: Nominated property does not currently meet integrity requirements and only partially meets protection and management requirements.

Background note:
The Committee's attention is drawn to Decision 43 COM 8B.3, taken in 2019, through which it inscribed the Migratory Bird Sanctuaries along the Coast of Yellow Sea-Bohai Gulf of China (Phase I), China, on the World Heritage List on the basis of criterion (x). This serial property is located in the same flyway as the nominated property, and the decision also makes some recommendations relevant to the present nomination.

1. DOCUMENTATION

a) Date nomination received by IUCN: Original nomination received in March 2019.

b) Additional information officially requested from and provided by the State Parties: Following the IUCN field mission, the State Party of the Republic of Korea submitted additional information, as well as a revised management plan. Following the IUCN World Heritage Panel a progress report was sent to the State Party on 30 December 2019. This letter advised on the status of the evaluation process and sought clarifications on a number of points including rationale for the selection and the delineation of boundaries of component parts and the degree of impacts arising from anthropogenic modifications and related potential threats by infrastructure and development plans. The State Party submitted additional information on 25 February 2020.

c) Additional literature consulted: Various sources, including: Birds Korea (2010). The Birds Korea Blueprint 2010 for the conservation of the avian biodiversity of the South Korean part of the Yellow Sea; Choi, Y.R. (2014). Modernization, Development and Underdevelopment: Reclamation of Korean tidal flats, 1950s–2000s, *Coastal & Ocean Management Volume 102, Part B*; Hong, S.K., Lee, J.A., Ihm, B.S., Farina, A., Son, Y., Eun-Shik, K. and Choe, J.C. eds. (2007). Ecological Issues in a Changing World: Status, Response and Strategy. Springer Science & Business Media; Crockford, N.J., Millington, S. and Provencher, J. (2018). Challenges and opportunities for transboundary conservation of migratory birds in the East Asian Australasian Flyway. Conservation Biology 32(3): 740-743; Hong, S.K. (2012). Tidal-flat islands in Korea: exploring biocultural diversity. *Journal of Marine and Island Cultures*, 1(1):11-20; Kim, B.-S. (2017). Comparative Study of Inscription Process of Islands Property on UNESCO's World Heritage List: Focusing on The Southwestern Coast Tidal Flats' in Korea and the Sacred Island of Okinoshima and Associated Sites in the Munakata Region' in Japan. *Journal of Marine and Island Cultures,* 6(2): 50-63. Kim, R. E. (2011). Is Ramsar Home Yet? A Critique of South Korean laws in light of the continuing Wetlands Reclamation. *Columbia Journal of Asian Law*, 24 (2):437-476; Koh, C.-H. and Khim, J.S. (2014). The Korean tidal flat of the Yellow Sea: Physical setting, ecosystem and management, *Coastal & Ocean Management Volume 102, Part B*; Lee, H.J., Kim, Y.H., and Chu, Y.S. (1998). Sedimentology of tidal flats on the west coast, Korea. *Ocean Research 20:* 153-165; MacKinnon, J., Verkuil, Y.I. and Murray, N. (2012). IUCN situation analysis on East and Southeast Asian intertidal habitats, with particular reference to the Yellow Sea (including the Bohai Sea). *Occasional Paper of the IUCN Species Survival Commission No. 47*, IUCN, Gland, Switzerland and Cambridge, UK; Miththapala, S. (2013). Tidal flats. *Coastal Ecosystems Series 5*, Colombo, Sri Lanka: IUCN; Moores, N., Young, L., Millington, S., Xia, S., Yu, L., Yu, X., Ri, K.S., Kim, T.S., Lim, J. and Glenk, F. (2019). National actions and international frameworks for the conservation and wise use of tidal flats and other coastal wetlands in the Yellow Sea. *Wetlands: Ecosystem Services, Restoration and Wise Use* (pp. 159-184), Springer, Cham; Murray, N.J., Ma, Z. and Fuller, R.A. (2015). Tidal flats of the Yellow Sea: A review of ecosystem status and anthropogenic threats. *Austral Ecology 40*, 472–481; Sato, M. and Koh, C.H. (2004). Biological richness of the Asian tidal flats and its crisis by human impacts. *Ecological Issues in a Changing World* (pp. 135-155), Springer, Dordrecht; Studds, C.E. et al. (2017). Rapid population decline in migratory shorebirds relying on Yellow Sea tidal mudflats as stopover sites. *Nature Communications* 8:14895. Yasumara, S., Wang, Y., Chae, E.S., Kim, T., Yoshida, M., Tsuji, K., Yamamoto, A. and Kim, E. (2014). The comprehensive report of the Yellow Sea eco-region support project 2007-2014, WWF, Kiost, Tokyo.

d) Consultations: 13 desk reviews received. The mission met with a wide range of stakeholders including State Party representatives, academia,

NGOs, local community representatives (including village leaders and fishing cooperative leaders), individual experts and others.

e) Field Visit: Bastian Bertzky and Sonali Ghosh, 30 September – 8 October 2019

f) Date of IUCN approval of this report: May 2020

2. SUMMARY OF NATURAL VALUES

The nominated property is located in the Yellow Sea, between China and the Korean Peninsula. Over 60 major and approximately 80 smaller rivers discharge sediment deposits into this semi-enclosed sea, including the Yellow and Yangtze Rivers in China and the Geumgang River in the Republic of Korea. This combination of high sediment loads and the partially enclosed geography of the Yellow Sea has resulted in the formation of one of the largest areas of tidal flats in the world.

However, damming of rivers and extensive coastal zone reclamations, paired with pollution and overharvesting have heavily altered the tidal flat ecosystems of the Yellow Sea. The 2012 IUCN situation analysis on East and Southeast Asian intertidal habitats notes a 35% loss of intertidal habitat from the six key habitat areas of the Yellow Sea since the early 1980s. The very poor overall conservation status of Yellow Sea tidal flats means that under criteria set by IUCN, this ecosystem as a whole is currently considered to be endangered on the IUCN Red List of Ecosystems. It is likely that habitat loss is the principal driver of declines of species that depend on the Yellow Sea during migration on the East Asian-Australasian Flyway (EAAF), a flyway for bird populations of at least 21 countries.

The nominated property lies on the eastern side of the Yellow Sea on the southwestern and southern coast of the Republic of Korea. It comprises a series of four component parts (see Table 1) – Seocheon Getbol, Gochang Getbol, Shinan Getbol (the largest, with 85.1% of the total area) and Boseong-Suncheon Getbol. It has a total area of 129,346 ha and the component parts are within buffer zones that total 74,497 ha.

The component parts exhibit a complex combination of geological, oceanographic and climatologic conditions that have led to the development of coastal sedimentary systems with diverse tidal flat ecosystems. Whilst all component parts are representative of archipelagic tidal flats in the Yellow Sea, each component part represents one of four tidal flat subtypes of Getbol: the estuarine type, open embayed type, archipelago type and semi-enclosed type. The proposed OUV of the property nominated under criteria (viii), (ix) and (x) lies in the diversity of these tidal flat ecosystems and its associated geological, geomorphological and ecological features and processes, and its high biodiversity.

No	Nominated component parts	Area (ha)	Buffer zone (ha)
1	Seocheon Getbol	6,809	3,657
2	Gochang Getbol	6,466	1,785
3	Shinan Getbol	110,086	67,254
4	Boseong-Suncheon Getbol	5,985	1,801
	TOTAL	**129,346**	**74,497**

Table 1: Component parts constituting the nominated property, Getbol, Korean Tidal Flat

The selection of these component parts (as explained in some depth in the supplementary information provided) has sought to ensure that each component part responds to all three of the selected World Heritage criteria, to include a) significant areas of sand flats, mud flats, mixed flats and rocky habitats that are home to complex ecological communities; b) critical habitats for migratory birds and some endemic species; and c) geological and geomorphological features such as sand spits, sand-gravel strings, cheniers, tidal channels, tidal gullies, and numerous islands. Protection and management status has been another important aspect to focus the selection on areas where local communities are supportive and where an integrated protection and management system could be put in place.

Regarding criterion (viii), the nomination describes the nominated property as the only example of an island-studded high geodiversity tidal flat with a macrotidal range, set in a monsoonal environment. It has the world's thickest Holocene mud formation, deposited over a period of more than 8,500 years. Each of the four component parts has been selected to reflect geological and geomorphic features and processes that differ from the other three, whilst sharing the same main sediment source – the Geumgang River. The Shinan component part is unique in that it consists predominantly of mud flats, which have been created by the protection of a large group of islands against energetic winds and waves from the north and northwest generated during the Asian-monsoon winter. The considerably smaller Boseong-Suncheon component part is also characterized by mud flats, whilst the other two component parts, Gochang and Seocheon, show sand-dominant environments in an open-bay setting.

Regarding criterion (ix), the nomination focuses on complex ecological communities in muddy, sandy and rocky habitats that support various trophic levels. In the mudflats, Mud Octopuses (*Octopus minor*) are a top predator and keystone species, and deposit feeders like Japanese Mud Crabs (*Macrophthalmus japonica*), Fiddler Crabs (*Uca lactea*), and Polychaetes (bristle worms) are dominant species. On the sand flats, waterbirds are keystone species. Deposit feeders including Stimpson's Ghost Crabs (*Ocypode stimpsoni*), Yellow Sea Sand Snails (*Umbonium thomasi*), and Polychaetes as well as various suspension feeders like clams are dominant species.

Regarding criterion (x), the nominated dossier highlights the essential function of the nominated component parts as feeding and staging sites for

migratory birds in the Yellow Sea along the East Asian-Australasian Flyway (EAAF), one of the world's most jeopardized flyways. The nominated property supports internationally endangered species, whose habitats have shrunk to a small number of suitable stopover sites and breeding and feeding grounds. 22 globally threatened or near-threatened species, such as the Critically Endangered (CR) Spoon-billed Sandpiper (*Calidris pygmaea*), use the nominated property. According to the nomination dossier, the large number, both in terms of species and individuals, of shorebirds is supported by extremely high primary production and biodiversity of 375 benthic diatoms, 152 marine macroalgae and 857 macrobenthos among tidal flats under temperate climates worldwide. A total of 2,150 species of flora and fauna have been reported, including 47 endemic and 5 endangered marine invertebrate species besides a total of 118 migratory bird species.

The nomination highlights the links between geodiversity and biodiversity, and also describes how cultural diversity and human activity depend on the natural environment. Traditional use has evolved over time in the nominated property and is viewed as an integral part of the ecosystem. Multiple fishing businesses and village fraternities, which exist in association with the nominated property, seek to manage their communal fishing grounds in a sustainable way by means of self-governing rules, joint operations and coordination of timing, location, and size of catches.

3. COMPARISONS WITH OTHER AREAS

The nomination dossier provides a comparative analysis that is undertaken in considerable technical depth, and has brought together inputs from a network of specialists with global experience. The analysis compares 40 sites representing ocean and coastal wetland ecosystems, including tidal flats. Six World Heritage properties were shortlisted (Wadden Sea, Banc d'Arguin National Park, Sundarbans National Park, Halong Bay, High Coast / Kvarken Archipelago and Galapagos) for the analysis, which concluded that the Wadden Sea was the only site outside the Yellow Sea region that hosted wide tidal flats under a temperate climate similar to the nomination, but that it has different geology, geomorphology, oceanography, productivity and biodiversity. Within the Yellow Sea region, the Migratory Bird Sanctuaries along the Coast of Yellow Sea-Bohai Gulf of China (Phase 1) is the most comparable site, but similarly the analysis cites the different geology, geomorphology and oceanography, and that this property has been inscribed under criterion (x) only.

IUCN notes however that the analysis poses a number of questions and issues, which are also discussed in the following sections related to integrity. Firstly, there are some more sites in the region that could have been compared, such as the Mundok Migratory Bird Reserve, a Ramsar and East Asian-Australasian Flyway Partnership (EAAFP) site on the west coast (along Chongchon and Taeryong River estuaries) of the Democratic People's Republic of Korea, which appears to possess a similar tidal flat landscape and geodiversity. Some literature also notes the importance of the Ariake Sea in western Kyushu, Japan, as it has similar environmental characteristics. In terms of other tidal flat sites in the Republic of Korea, additional information by the State Party supplements the comparison of the selected component parts and other sites in the sedimentary system of Geumgang River of the nomination with tidal flats influenced by the Hangang River system. Besides a number of data deficiencies, the selected component parts do not appear to clearly stand out compared to these sites. Some of them appear to contain similar geomorphological attributes and comparable or higher waterbird counts. This poses fundamental questions for integrity, as the selected nominated component parts do not appear to contain the full range of attributes necessary to express OUV.

Regarding criterion (viii), a key element of comparison that is not considered is the relatively large size of the Wadden Sea, as the most directly comparable existing World Heritage Site, comprising a single contiguous system of more than 1.1 million hectares. In contrast only the Shinan Getbol is a relatively large area with extensive mud flats, but still less than 10% of the size of the Wadden Sea, whilst the three other component parts together make up only 5% of the area of Shinan. Undoubtedly, Shinan Getbol presents an impressive and extensive set of ongoing geological processes, however the remaining component parts are limited in demonstrating extensive coastal systems, and the arguments for their meeting criterion (viii) depend on the definition of a rather specialized classification of Getbol, which advances an argument that the selected areas as adequate to represent four different tidal flat types. Two other, significantly smaller, component parts, Gochang and Seocheon, show sand-dominant environments in an open-bay setting. The last one, Boseong-Suncheon is also dominated by mud flats, but it exhibits simple geomorphology except for scenic views of salt marshes. Whilst the complex coastlines and numerous islands with a macro-tidal regime and significant sediment input of Shinan Getbol, set in a monsoonal environment is undoubtedly impressive, this does not imply that the nominated property as a whole can be considered globally outstanding.

Regarding criterion (ix), the dossier puts forward the nominated property's diversity and primary production, arguing the latter as higher than in the compared sites. However, primary production is the only data provided for the biological and ecological processes, and the productivity of the areas included in the nomination is a small part of the overall mud flat ecosystems within the Republic of Korea (and more widely in the Yellow Sea). The nomination falls short in providing the scientific evidence to support this criterion. More ecological research seems to be required to support a case under criterion (ix) and to inform the choice and extent of component parts. As with criterion (viii), the small size of component parts is limiting, and again the obvious comparison with the much larger area of the Wadden Sea is striking. The comparison in terms of integrity is also limited. Whilst it is stated that the

nominated property contains complex food webs in numerous microhabitats within a "unique, pristine and interconnected terrestrial-coastal-marine ecosystem", IUCN notes that the connection between terrestrial, coastal and marine parts of the ecosystem has been severely disturbed by anthropogenic modifications, and is not pristine (see section 4.5). Finally, it is important to note the level of compromise to the overall integrity of ecosystem within the wider Yellow Sea system due to reclamation, development and pollution (further discussed in section 4).

Regarding criterion (x), the analysis could have been strengthened with comparisons to other Yellow Sea sites, especially with the Migratory Bird Sanctuaries in China. With the exception of the 110,086 ha component part of Shinan, the component parts provide very limited areas ranging from 5,985 ha to 6,809 ha, which do not compare with the two component parts of the Migratory Bird Sanctuaries of 144,839 ha and 43,804 ha respectively, or with the more extensive systems of the Wadden Sea. In terms of the selected component parts, the entire dossier lacks long-term status, occurrence and trend information on bird species and populations. Such data on migratory bird species should have been applied to assess how the component parts are placed within the regional Flyway-wide context. This is especially relevant considering that, at a global scale, the most important biodiversity conservation value of the intertidal and coastal systems in the Yellow Sea is their vital role as hub of the East Asia-Australasia Flyway (EAAF).

EAAF is characterised by the largest number of Endangered (EN) and, in some cases, Critically Endangered (CE) species, and is among the most threatened flyways worldwide. Whilst the entire EAAF faces various threats, the Yellow Sea is the focus of greatest concern, according to the 2012 IUCN situation analysis on East and Southeast Asian intertidal habitats. This IUCN study identified the eastern Yellow Sea Coast of the Republic of Korea with nine Important Bird Areas (IBAs) as a key area for shorebirds and waterbirds in the EAAF. However, the component parts of the nominated property cover only the central and southern part of this key area and only partially the respective IBAs.

IUCN, in collaboration with UN Environment WCMC, has undertaken supplementary comparative analysis, focusing on criteria (ix) and (x), finding that the biodiversity that the nominated property seeks to represent is of global significance, especially with regard to possible application of criterion (x). Getbol, Korean Tidal Flat, overlaps with the freshwater ecoregion of Southeastern Korean Peninsula, which is not yet represented on the World Heritage List under biodiversity criteria. However, the Yellow Sea marine priority ecoregion is already represented. The nominated property is not found in a biogeographical unit, which has been mentioned as a gap on the World Heritage List, but the Eastern Yellow Sea Coast, more broadly, is highlighted in IUCN situation analysis on East and Southeast Asian intertidal habitats as one of the key areas having the greatest values in terms of shorebird diversity.

The supplementary comparative analysis notes that the nominated property provides important stopover sites for migratory birds that travel along the EAAF, especially since the reclamation of Saemangeum. Compared to other World Heritage properties with important tidal wetlands inscribed under biodiversity criteria, the nominated property appears to show a comparable level of biodiversity, based on the available data. The tidal flats have a high level of endemism to the Yellow Sea and host a number of globally threatened bird species, either residing or migrating through the site, such as the Spoon-billed Sandpiper (*Calidris pygmaea*), which is Critically Endangered (CR) and one of the key species whose habitat is found within the recently inscribed Migratory Bird Sanctuaries Along the Coast of Yellow Sea-Bohai Gulf of China (Phase 1).

Taken as a whole, IUCN concludes that the comparative analysis, whilst having many aspects that are commendable and thorough, does not adequately consider questions of integrity in framing its conclusions, and thus remains an unconvincing analysis in relation to the application of the natural criteria. The nomination's approach to identify sites with attributes that match all three criteria at the same time, with a superimposed filter on protection and management, has resulted in a limited selection of four component parts. Three of these component parts are relatively small, and the approach has omitted areas that would have been important to express OUV and meet integrity requirements under each of the three criteria. The resulting limited areas are surpassed by the comparative scale of the Wadden Sea with its significantly larger component parts containing contiguous and intact tidal flats.

Nevertheless, IUCN underscores that the wider ecosystem within the Yellow Sea region is of global significance especially under criterion (x), which could potentially be demonstrated through a re-designed nomination that would seek to more fully capture key EAAF sites and IBAs. In terms of criterion (ix), there would be a clear need to gather and generate scientific evidence that may potentially demonstrate significance and inform the choice and design of potential component parts. For all three criteria, the component parts lack size to represent complete and intact geomorphological processes (viii), ecological processes (ix) and habitats (x).

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

The Republic of Korea has 100% ownership of the nominated property including the marine buffer zones. The Ministry of Oceans and Fisheries has the authority over all tidal areas below the high tide mark. The Ministry of Environment is responsible for estuaries, feeding into the nominated areas, as well as the biodiversity, including migratory waterbirds.

The four component parts of the serial nominated property are legally protected in their entirety as Wetland Protected Areas (WPAs) under the Wetlands Conservation Act (WCA). Various other laws and regulations, including the Conservation and Management of Marine Ecosystems Act, apply in the nominated property and buffer zones, potentially restricting damaging activities.

A strong addition to the legal framework for conservation is the Tidal Flat Act, adopted in 2019, which epitomizes a shift in policy moving from reclamation policies to tidal flat conservation. According to supplementary information by the State Party, the act intends to restore reclaimed tidal flats in 25 locations and to sustain healthy tidal flats, which are destined for either conservation, safe management, resting, or production and experience. A 2019-2023 action plan for tidal flat ecosystem restoration has been developed with the objective to expand areas for tidal flat restoration projects and to enhance restoration incentives and project management systems.

Traditional fishing activities are allowed to continue at current levels and subject to self-governed rules by the fishing cooperatives in accordance with the Fisheries Act and Wetland Conservation Act. The inherent interests of, and traditional management by, the local communities play an important role in ensuring the effective protection of the nominated property given that healthy tidal flats underpin many local livelihoods.

The nominated property also overlaps with four Ramsar sites (Seocheon, Gochang, Jeungdo and Suncheon Bay) and three UNESCO Biosphere Reserves (Shinan Dadohae, Gochang and Suncheon), but integrated management arrangements between these other designations do not appear to be in place. Furthermore, areas that appear important for inclusion in the nominated property have apparently been excluded due to their being insufficiently protected. As the biodiversity and geodiversity of the nominated property depend on the processes and ecosystems that extend far beyond the component parts, safeguards and protection measures would be required in the wider region, including the Geumgang river catchment.

IUCN considers that the protection status of the nominated property meets the requirements of the *Operational Guidelines*.

4.2 Boundaries

The boundaries of the nominated property reflect geoheritage values and respond to some critical sites for key migratory bird species and their habitats. They also reflect existing human activities and anticipated development needs, and administrative boundaries. The boundaries of the nominated property have been delineated primarily based on extent of the tidal flats, taking into account, firstly, the survey results of the tidal flat area measurements conducted every five years by the Ministry of Oceans and Fisheries (MOF), and secondly the intertidal wetlands as stipulated in the Ramsar Convention and subtidal areas including tidal channels less than six metres in depth.

However, IUCN notes significant shortcomings regarding the integrity of the nominated serial property, both in terms of intactness and completeness. In terms of intactness, IUCN notes that the nominated property is in many areas surrounded by heavily modified, urban, industrial and agricultural landscapes linked to large-scale land reclamation. The intactness of the overall mudflat system seems to be questionable in light of the fact that 22% of the tidal flats have been reclaimed according to the nomination dossier. 31% of the coastline has been modified by constructed embankments, from some of which subsequent sedimentary structures have developed. The Saemangeum Reclamation Project and other large infrastructure projects (e.g. bridges and ports) have also affected parts of the nominated property.

The modified areas often belong to neighboring municipalities that have chosen a different development path compared to those municipalities involved in the nomination. The boundaries of the nominated property therefore encompass mostly areas where protection and management requirements might be met and correspond exactly to the extent of the Wetland Protected Areas (WPAs) designated under the national Wetlands Conservation Act. However, with the exception of Shinan Getbol, they include only small areas that may still be relatively intact within a much wider compromised setting. Importantly though, uninhabited islands are generally included in the nominated property, not the least because they provide important resting areas for birds, whereas the, usually larger, inhabited islands are included in the buffer zone.

In terms of completeness, the most obvious issue regarding boundaries is that only four component parts were selected for this nomination, although tidal flats extend along most of the west coast of the Republic of Korea. The supplementary information by the State Party explains the approach to the selection of component parts in the nomination, and this confirms that the goal of the nomination is that each component part responds to all three of the selected criteria for the nomination. The result is that the boundaries appear to reflect an emphasis on the presentation of geoheritage values (related to the Geumgang River sedimentation system), and do not include many areas supporting biodiversity values justifying consideration under criterion (x).

Reviewers note that the nominated property does not include several tidal flats, and their hinterlands, which are internationally important for waterbirds, such as in Incheon (Ganghwa, Yeongjong, Song Do) and Gyeonggi (Hwaseong and Asan Bay). Important habitats and breeding sites for several globally threatened species are missing, including for Chinese Crested Tern (*Thalasseus bernsteini* – CR), Black-faced Spoonbill (*Platalea minor* – EN), Chinese Egret (*Egretta eulophotes* – VU), Saunders's Gull

(*Chroicocephalus saundersi* – VU) and Swan Goose (*Anser cygnoid* – VU). This is epitomized by the omission of a number of Important Bird Areas / Key Biodiversity Areas (IBAs / KBAs) and other priority areas for nature conservation.

Where there is overlap with IBAs, the boundaries in detail appear to not reflect the main areas of importance. For example, the Shinan Getbol component part of the nominated property overlaps only partially with the Muan Tidal Flat Important Bird Area (IBA), and leaves out the Hampyeong Bay IBA. Another instance is the Ganghwa tidal flat, designated as a Natural Reserve, which has not been included in the nomination, even though it serves as the largest breeding site for the endangered Black-faced Spoonbills (*Platalea minor*) in the Republic of Korea, whilst exhibiting comparable or higher values in terms of biodiversity indicators and primary production as well as a comparable geodiversity.

Regarding criteria (viii) and (ix), the selection of four component parts, three of which are of limited size and geomorphological extent, lacks sufficient scale to cover complete intertidal mudflat systems, leaving out elements necessary to fulfill conditions of integrity. Only the Shinan Getbol component part consists of a large and particularly complex system of mud flats. Boundaries would need to include inshore marine areas, estuaries of feeder rivers and the hinterland, and in particular areas that support high concentrations of fish and waterbirds. Reviewers also noted that criterion (ix) is compromised by heavily altered shorelines, which would need to be restored. All four component parts exclude adjacent habitats which are linked by ecological processes, including omissions of contiguous tidal flats which are depended upon by waterbirds and other mobile species. Therefore, the nominated property does not represent the interconnected terrestrial-coastal-marine ecosystem and does not provide large-scale 'ridge-to-reef' continuity and connectivity.

Similarly, the proposed buffer zones do not function as a sufficient additional layer of protection that would capture adjacent habitat. The nominated property is only provided with narrow 500-m-seaward and 100-m-landward buffer zones. In response to concerns raised by the IUCN World Heritage Panel, the State Party concurs in supplementary information, that further expansion of the buffer zones is needed and commits to enhance the buffer zones "within two years following a possible inscription" by adding important wetlands and farmlands.

The nomination dossier notes that the comparative analysis indicates the possibility of an expansion of the nominated property when protection and management is in place. There is an indication of this nomination being the first step in a phased approach, and IUCN has sought further information from the State Party on its future intention. At this stage, the plans for further phases of nomination envisage a second phase for tidal flats fed by the Hangang River sedimentation systems. However, the level of detail for such a second phase is very limited, and there is not yet a vision of a larger, phased approach. In contrast, such a vision with specific sites was provided as part of the nomination in the recently inscribed phase I of the Migratory Bird Sanctuaries along the Coast of Yellow Sea-Bohai Gulf of China World Heritage property.

In summary, IUCN considers that the boundaries established in the nomination are not currently adequate: Firstly, the component parts, with the possible exception of Shinan Getbol, are not sufficiently extensive, by a considerable margin, to demonstrate the representation of the large-scale geomorphological and ecological processes of the Yellow Sea in the Republic of Korea, and thus undermine the case for criteria (viii) and (ix). Secondly, the component parts omit key areas of significance adjacent to the current areas, and also omit other Key Biodiversity Areas that could strengthen the series under this criteria. When viewed through the lens of biodiversity values, the boundaries selected appear to be in need of considerable amendments. Thirdly, taken as a whole, the buffer zones proposed are insufficient in size to provide protection for the nominated property.

IUCN considers that the boundaries of the nominated property do not meet the requirements of the *Operational Guidelines*.

4.3 Management

The agency in charge of the management of coastal wetlands is the Ministry of Oceans and Fisheries (MOF), and Regional Environmental Offices and Wetlands Centres collaborate with local governments in the management of coastal WPAs. The proposed integrated management system for the nominated property will involve the three provincial governments and five local governments involved in the nomination, plus the Ministry of Oceans and Fisheries (MOF) and the Cultural Heritage Administration (CHA).

The Ministry of Environment (MOE) and Korean National Parks Service (KNPS), being responsible for inland wetlands, were not extensively involved in the nomination. Only Shinan Getbol has a national park within its boundaries. In supplementary information, the State Party outlines several mechanisms in which the MOE and KNPS will be consulted in management. Supplementary information states that "*MOE's participation in the integrated management system as a cooperative institution will be discussed*" in case of inscription. However, noting the importance of inland wetlands and other inland habitats for many bird species, IUCN considers that systematic coordination between tidal flat management and management of inland habitat would need to be strengthened considerably and be put in place before or in the course of the nomination process.

The nominated property has adequate financial and technical resources, including staffing in all authorities involved, and these would be expected to be further increased upon inscription. There are many activities underway by different levels of government, non-

governmental organizations and local communities that support the effective management and enforcement of the WPAs that make up the nominated property. The on-the-ground management, conservation and restoration efforts are expected to be further strengthened, in collaboration with relevant partners, were the nominated property to be inscribed. There are also many measures in place to prevent, reduce and respond to risks (e.g. those related to natural and anthropogenic disasters).

Each of the four component parts has a site-level management plan, some of which are in the process of being updated. There is a documented governance and management system, key elements of which are already in place, including the Local Management Committees and the overall coordination by the World Heritage Promotion Team since 2014. The Getbol World Heritage Integrated Management Committee, the Getbol World Heritage Center, the Local Management Offices and the Network of Local Management Committees are proposed to be established after inscription. The integrated management plan, currently tentative, and an integrated monitoring system would also be implemented after inscription. IUCN considers that the integrated management plan would need to be complemented with more details on specific management interventions that would be required for supporting and maintaining the potential OUV.

Overall, IUCN notes that important management instruments, whilst triggered by inscription, are currently not in place. IUCN also considers that the focus of the management plan should be extended beyond the nominated property to also address the management of its buffer zone and surrounding area.

IUCN considers that the management of the nominated property partially meets the requirements of the *Operational Guidelines*, pending the update and implementation of the integrated management plan and all management instruments.

4.4 Community

Over 42,000 people inhabit the buffer zone of the nominated property, and many more people are using the nominated property and its buffer zone for various activities, including fisheries and tourism. Some of the local communities are still dependent on the tidal flats for their food requirements. Extensive consultation processes preceded the designation of the WPAs and the preparation of the nomination. In some areas, it had taken many years to overcome initial resistance and to finally secure support for the nomination. Overall, there appears to be strong stakeholder support for the nomination, and good collaboration among different levels of government and a wide range of stakeholders in the governance and management of the nominated property and its surrounding area. Local residents have become important stakeholders in the WPA Management Committee that has been established for each component part. Through these Committees resdients are involved in the management and decision-making processes on the nominated property. While the local communities and fishing cooperatives appear to be involved in these processes, some national NGOs have expressed an interest in being further consulted and involved.

Populations in many of the villages in the region around the nominated property are in decline due to outmigration to urban areas. It is projected that many island villages will be empty by 2030. This loss of people would also result in the loss of traditional ecological knowledge and values that sustained the nature-culture linkages in the tidal flat ecosystems. Historically tidal flat fisheries have been recognized to be intrinsically associated with local communities' livelihoods and culture. The nominated property is one of the places where one can experience four traditional activities of nationally important fisheries heritage (seaweed/laver farming, bare-hand fishing, salt-panning and use of Peolbae and other traditional fishing equipment). Continuation of such traditional practices has strengthened the cultural rights of the communities and is already contributing in some areas to sustainable ecocultural tourism activities. Both the provisions of the Wetlands Conservation Act and the objectives of the UNESCO Man and Biosphere Programme have helped to formally recognize and support the livelihood and benefit-sharing of the local communities. The communities are also self-regulated with their own rules and regulations pertaining to harvesting, including spatial and temporal closures (e.g. closure months for oyster and cockle harvesting differ in each county).

4.5 Threats

The coastal zones of the Republic of Korea have been severely impacted by past reclamation projects: when assessed in 2008 the total intertidal flat area reclaimed in the Republic of Korea was 60,800 ha, according to the Ministry of Land Transportation and Maritime Affairs, representing 22% of the total wetland area of the country. Coastal development has resulted in a decline of more than 65% of tidal flat area since the 1950s.

It is positive that, policy is shifting from large-scale reclamation towards tidal flat conservation and that restoration works are being carried out for some reclaimed sites. This is exemplified by the recent adoption of the Tidal Flat Act, and the adoption of other acts since the late 1990s, such as the Wetlands Conservation Act, and the Conservation and Management of Marine Ecosystems Act. As noted in the nomination, the Saemangeum Reclamation Project has had the biggest impact on the nominated property, affecting the sediment supply and biodiversity of both the Gochang Getbol and Shinan Getbol. Now both the nominated property and its buffer zone are legally protected from future reclamation and there are no new large-scale reclamation projects planned in the surrounding area.

The nomination dossier states that the long-term sustainability and viability of the Getbol is dependent on ongoing, regular, long-term supply of terrestrial sediment from several major rivers. Further to the request by the IUCN World Heritage Panel on impact monitoring and mitigation concerning river modifications and catchment areas, the State Party responded that following construction of the Geumgang River dam sedimentation in tidal flats in Seocheon Getbol Yubudo became more muddy. However, today the area is approaching a new equilibrium in tidal flat sedimentation with stabilized distribution pattern and water quality in good condition since 1997. The information provided does not address any upstream protections or monitoring to maintain sediment loads nor regulate nutrients arriving in the tidal areas.

Marine pollution is a major issue that is impacting all the component parts. Marine litter originates from both inland areas as well as internationally from marine sources. The country's Marine Trash Management Basic Plan 2019-2023 aims to reduce marine waste by 50% by 2030 and there are many activities underway. For example, the authorities provide support to fishers for the collection and safe disposal of the marine litter, including through many collection points both on land and in the sea. However, larger efforts appear to be required to address this issue in the nominated areas. Another potential issue is pollution of the tidal flats from inland sources, though this may be mitigated by a network of sewage treatment plants in the area.

Yellow Sea shipping lanes immediately adjacent to the Getbol are some of the busiest in the world, and in 2009 large parts of the Getbol were severely impacted by the Hebei Spirit oil spill with oil drifting from Daesan in the north to the southern tip of the peninsula. Oil tankers must now stay 10-25 miles offshore, and single-hulled tankers are not allowed in ports.

While fisheries within the nominated property are traditional, self-regulated and limited, fishing grounds outside the nominated property are intensively exploited in the Korean west sea. More than 250 target species are harvested by about 80,000 fishing vessels. Although knowledge of the status of many species harvested in commercial fisheries is limited, stocks are generally considered to be declining overall.

Tourism is concentrated in only a few places of the nominated property and its buffer zone (notable around Suncheon City), whereas many of the more remote areas (many of the smaller islands) have little or no tourism

The impact on shorebirds from habitat loss along the flyway is increasingly well documented; however, the threats faced by land birds are less well understood. Habitat loss has also been hypothesized to be a driver of decline for forest-dependent migrants such as flycatchers and thrushes overwintering in Southeast Asia. Evidence from temperate Asia has revealed that many migratory passerine populations have declined even with little habitat loss in the breeding grounds. Recent studies now show that hunting is also a major threat to many migratory land birds.

Climate change and sea level rise pose a major threat but their exact impacts on the nominated property are not very well understood. The nomination outlines a range of planning, monitoring and adaptation strategies undertaken by the Republic of Korea in this respect.

In summary, there are significant issues with the nomination in that it does not meet the requirements of integrity, notably in relation to the boundaries that are considered currently too limited in scope. The approach to limit the selection to component parts that respond to all three criteria at the same time has resulted in a nominated property that is incomplete under each of the three criteria. The area is subject to a range of significant threats that are being met by a protection and management approach that is essentially sound within the areas proposed for nomination. However, despite welcome progress in strengthening protection, such as in relation to tackling the damage from past reclamation in the coastal zone, there remain a number of significant weaknesses when considering the wider protection of the processes and ecosystems on which the biodiversity and geodiversity of the nominated property depend.

5. ADDITIONAL COMMENTS

5.1 Consideration in relation to serial properties

a) What is the justification for the serial approach?
The justification for the serial approach is based in particular on the approach to recognizing OUV under criterion (viii) and, to a lesser extent, criterion (x). The four component parts all belong to a broader sedimentary circulation system of Geumgang River. Although all component parts represent island-type (archipelagic) tidal flats, each component part has a different coastal geomorphology with distinctive circulation sedimentation patterns. There are also notable differences in the ecological and biological values of the different component parts, including species composition, distribution and interaction. IUCN considers that there is a justification to consider a serial approach to nomination, given the lack of protection and management of large parts of the intertidal areas of the Republic of Korea. However, there is a fundamental problem created in the approach to component selection, which has resulted in the omission of key areas that respond to criterion (x) from the nomination. In the view of IUCN, this has resulted from a site selection approach that has been too restrictive in the filtering of component parts. In a serial approach made under several criteria it is possible to include component parts that respond to only some of the overall criteria for the series as a whole. Specifically, in this case, it would be possible to include in the nomination intertidal areas that respond primarily to criterion (x) and to a lesser extent to criterion (viii). In addition, the lack of protection and management systems in certain places, combined with missing support from local communities, seems to

have prevented the identification of a vision for a finite series of phased component parts.

b) Are the separate component parts of the nominated property functionally linked in relation to the requirements of the Operational Guidelines?
The four component parts are functionally linked in that they share the main sediment source, the Geumgang River, and serve, in the view of the nomination, to represent contrasting elements of the Getbol. However, the level of connectivity and integrity of the nominated property is compromised by the hard coastlines, river barriers, surrounding land use, past land reclamation projects and large infrastructure projects, and there are few direct functional linkages between the component parts, except in relation to their cumulative support to migratory species.

c) Is there an effective overall management framework for all the component parts of the nominated property?
The nomination dossier outlines a tentative integrated management plan for the whole nominated property to be fully activated after inscription, including the Getbol World Heritage Integrated Management Committee, Getbol World Heritage Center and Local Management Offices and a Network of Local Management Committees. There is a documented governance and management system, key elements of which are already in place, including the Local Management Committees and the overall coordination by the World Heritage Promotion Team since 2014.

6. APPLICATION OF CRITERIA

Getbol, Korean Tidal Flat has been nominated under natural criteria (viii), (ix) and (x).

Criterion (viii): Outstanding examples representing major stages of earth's history

The contention that the nominated property is the best, and perhaps only, example of island-type tidal flats in a macro-tidal setting in a warm temperate climate, and the fact that it contains the thickest known Holocene intertidal mudflat are important, and well documented in the nomination. However the arguments are not convincing in relation to the demonstration of OUV, being somewhat specialized and narrow in scope, tending to emphasize distinctive features of relatively small scale, rather than an approach integrated with conservation values in the Yellow Sea as a whole. Only one of the component parts, Shinan Getbol, consists predominantly of a particularly complex system of mud flats, and other component parts are either limited in their geomorphological extent and/or primarily demonstrating values that are surpassed in the large-scale inscription of the Wadden Sea.

IUCN further considers that the limited selection of four component parts, three of which are of small size, lacks sufficient scale to adequately capture the diversity of the intertidal mudflat system, and does not include all the necessary elements to fulfill the conditions of integrity. The integrity of the series is also compromised by heavily modified coastlines and other human activites. A very much larger and significantly reconfigured area would need to be proposed for this criterion to potentially be applicable.

IUCN considers that the nominated property does not meet this criterion.

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

The nominated property supports nationally and regionally significant values but there are several comparable examples of tidal mudflat systems of enormous ecological complexity along the world's coasts, often at a larger scale and within more intact overall ecosystems. The values documented in the component parts of the nominated property as currently nominated are not unique to these areas and, in most cases, their global significance has not been convincingly proven in terms of quality or quantity. There are many larger, more diverse and/or more pristine World Heritage sites encompassing interconnected terrestrial-coastal-marine ecosystems and the relatively small land and sea areas, beyond the tidal flats, included in the nominated property do not provide the same large-scale 'ridge-to-reef' continuity and connectivity of other properties. While the ecological and biological processes at play include many notable and illustrative elements, the nomination does not make a convincing case for these being of OUV.

Integrity considerations are also significant, and, with the exception of Shinan Getbol, the nominated property encompasses relatively small areas that are subject to a long history of human use. There is a high proportion (31%) of artificially hardened coastlines, and most major rivers are modified through river barriers (including the Geumgang and the Yeongsan River). The nominated property has only a narrow terrestrial buffer zone and is in many areas surrounded by heavily modified landscapes (urban, industrial and agricultural). The Saemangeum Reclamation Project and other large infrastructure projects (e.g. bridges and ports) have also affected parts of the nominated property. These limit the wholeness and intactness of the ecological and biological processes compared to the original natural state, given the small scale of the areas selected for inclusion in the series. For this criterion to potentially be applicable, a very much larger and significantly reconfigured area would need to be proposed that comprises important elements for the representation of ecological processes, such as the hinterlands and estuaries of feeder rivers.

IUCN considers that the nominated property does not meet this criterion.

Criterion (x): Biodiversity and threatened species

The nominated property contains a number of crucial natural habitats for in-situ conservation of the biodiversity of the Yellow Sea region, including threatened and endemic species. It supports 47 endemic (to the Yellow Sea) and 5 endangered marine invertebrate species. Reflecting its habitat diversity (including islands, rocky shores, beaches, sand flats, mud flats and salt marshes), some 2,150 plant and animal species have been recorded. The nominated property encompasses some of the critical stopover sites for several globally threatened species of migratory birds (at least one Critically Endangered, five Endangered and six Vulnerable) along the East Asian – Australasian Flyway (EAAF).

However, the selection of the areas for inclusion in the nominated property does not yet fully meet integrity requirements in terms of wholeness, and it only overlaps partially with four Ramsar sites, three EAAF flyway network sites and several Key Biodiversity Areas (KBA), whilst omitting adjoining areas of these priority sites, and leaving out completely other KBAs located along the coast. The proposed configuration of very narrow buffer zones does not appear to adequately support the protection of habitats, leaving out important parts of the hinterland and not providing an additional layer of protection against impacts from nearby intensive anthropogenic activity.

IUCN considers that the nominated property has potential to meet this criterion, subject to significant revision following further review and extension of the boundaries of component parts to include areas crucial for biodiversity conservation, supported by sufficiently sized and increased buffer zones and adequate protection and management arrangements.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B and WHC/20/44.COM/INF.8B2;

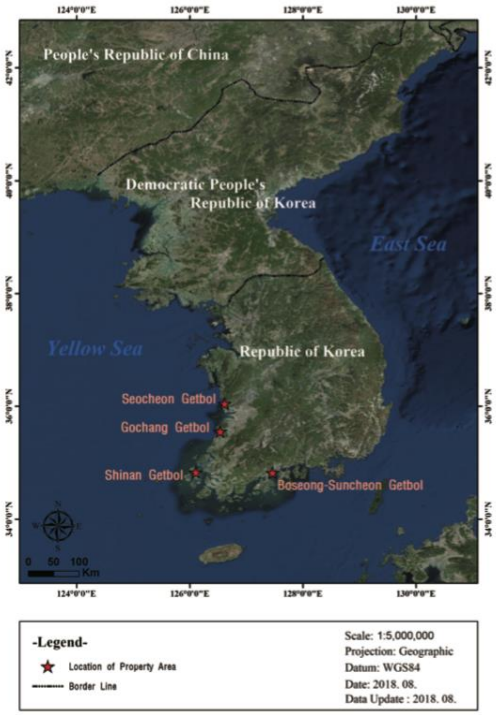
2. Defers the nomination of **Getbol, Korean Tidal Flat (Republic of Korea)**, taking note of the significant biodiversity values of this region that are potentially of Outstanding Universal Value (OUV), in order to allow the State Party to prepare a new nomination focused on criterion (x), and taking account of the need to:

a) Critically review the selection of the component parts and configurations from the perspective of conservation of biodiversity and threatened species, taking into account species occurrence and abundance, particularly with respect to migratory birds and endemic marine invertebrates, and including appropriate areas of recognized international conservation significance,
b) Revise the justification of Outstanding Universal Value in line with a reconfigured nomination focused on criterion (x),
c) Critically review, for a reconfigured nomination, buffer zone design and effectiveness, expanding proposed buffer zones beyond 100 meters wherever possible, and ensuring that buffer zone regimes mitigate the potential impact of activities in areas surrounding the nominated property,
d) Further develop the integrated management plan for a reconfigured nomination, with an increased emphasis on the protection and management of biodiversity and threatened species;

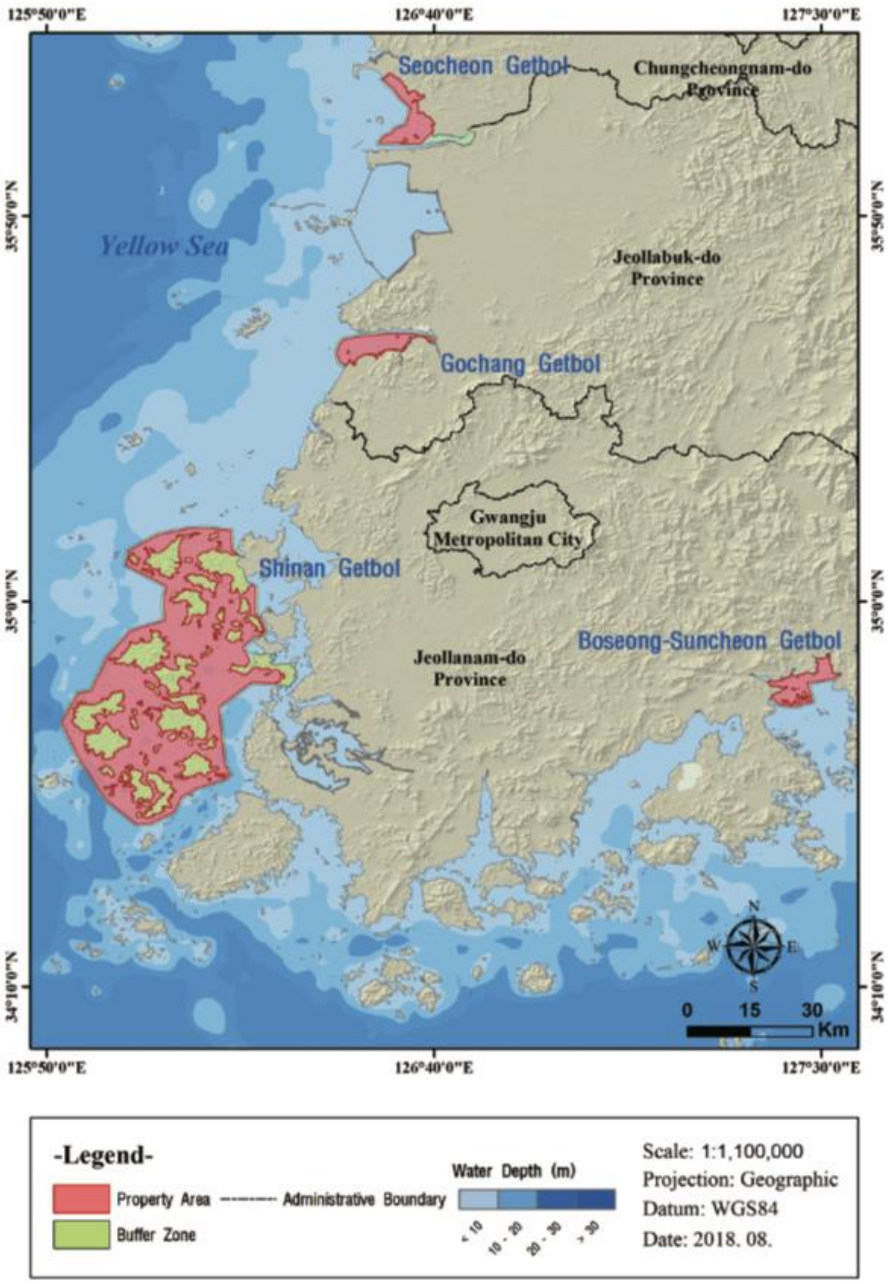
3. Requests the State Party to indicate in the new nomination its intentions regarding further phases of extension, through a clearly defined and timetabled approach, envisioning the incorporation of more critical habitats within the Eastern Asian-Australasian Flyway;

4. Expresses its appreciation of the extensive efforts to date regarding this nomination process, including the contributions at all levels, especially with local communities, and encourages the State Party to build on this investment in completing a revised and updated dossier;

5. Also encourages the State Party, further to Decision **43 COM 8B.3**, to further strengthen collaboration with other concerned States Parties to improve the conservation of critical habitats within the Eastern Asian-Australasian Flyway in relation to potential future transnational serial nominations, and/or extensions and, in particular, to coordinate with the State Party of China in relation to the anticipated Phase II nomination for Migratory Bird Sanctuaries Along the Coast of Yellow Sea-Bohai Gulf of China, potentially through the 2007 Korea-China Agreement on the Protection of Migratory Birds.



Map 1: Location of the nominated property



Map 2: Nominated property and buffer zone

EUROPE / NORTH AMERICA

COLCHIC RAINFORESTS AND WETLANDS

GEORGIA

Kolkheti Imnati mire channels © IUCN / Josephine Langley

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

COLCHIC RAINFORESTS AND WETLANDS (GEORGIA) – ID N° 1616

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To inscribe the property under natural criteria (ix) and (x).

Key paragraphs of Operational Guidelines:
Paragraph 77: Nominated property meets World Heritage criteria.
Paragraph 78: Nominated property meets integrity, protection and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: Original nomination received in March 2019.

b) Additional information officially requested from and provided by the State Parties: During and after the IUCN field evaluation mission, the State Party of Georgia submitted additional information on the nominated area, including additional maps. Following the IUCN World Heritage Panel, a progress report was sent to the State Party on 19 December 2019. This letter advised on the status of the evaluation process and sought responses and clarifications on the status of invasive alien species; further details on invertebrates, fungi and freshwater species; feasibility of a single, larger buffer zone; possible inclusion of dune systems in the nominated area or buffer zone; and current status on development of ports and shipping facilities near the nominated area. The State Party submitted a formal response and additional information on 21 February 2020.

c) Additional literature consulted: Various sources, including: Connor, S.E., Thomas, I., Kvavadze, E.V. (2007). A 5600-yr history of changing vegetation, sea levels and human impacts from the Black Sea coast of Georgia. *The Holocene* 17(1):25-36; Garstecki, T. (2017). Feasibility assessment for a World Heritage nomination of the Colchic Forests and Wetlands under the natural criteria. Michael Succow Foundation for the Protection of Nature, Greifswald [online] http://eprints.iliauni.edu.ge/6829/; Green, M.J.B., Shubiridze, G. (2019). Expansion and Improved Management Effectiveness of the Achara Region's Protected Areas. Terminal Evaluation Report, GEF Project ID: 4835, UNDP PIMS ID: 4732; Krebs, M., Matchutadze, I., Bakuradze, T., Kaiser, R. (2017). Georgia. In: *Mires and peatlands of Europe: Status, distribution and conservation* (Joosten, H., Tanneberger, F., Moen A., editors), Stuttgart: Schweizerbart Science Publishers; Nakhutsrishvili, G., Zazanashvili, N., Batsatsashvili, K., Montalvo Mancheno, C.S. (2015). Colchic and Hyrcanian forests of the Caucasus: similarities, differences and conservation status. *Fl. Medit. 25* (Special Issue): 185-192; Novák, P., Zukal, D., Kalníková, V., Chytrý, K., Kavgacı, A. (2019). Ecology and Syntaxonomy of Colchic forests in south-western Georgia (Caucasus Region). *Phytocoenologia* 49(3): 231-248.

d) Consultations: 8 desk reviews received. The mission met with a wide range of stakeholders including Agency of Protected Areas (APA) staff and rangers, representatives of the Ministry of Environment, Administration of the Autonomous Region of Adjara, municipalities, NGOs, donors, guesthouse owners, local agriculture and business owners (beekeepers, pastoralists, etc.), monks and scientific experts/researchers.

e) Field Visit: Angie Stringer and Josephine Langley, 28 September – 8 October 2019

f) Date of IUCN approval of this report: May 2020

2. SUMMARY OF NATURAL VALUES

The Colchic Rainforests and Wetlands is nominated as a serial property in the Caucasus region comprising seven component parts with a total area of 31,253 hectares (ha) and a 26,850 ha buffer zone (See table 1).

The component parts are located within an area extending 80 km north to south along the Black Sea coast of western Georgia, in the territory of three local government jurisdictions within Georgia: the Autonomous Republic of Adjara, plus the regions of Guria and Samegrelo–Zemo Svaneti. The altitude covered by the component parts ranges from sea level to 2,750 m. The nominated property is located in the Colchic biogeographical province, part of the Euxinian-Colchic ecoregion, recognized as an important climate refuge due to consistent warm and humid climate and proximity to the Black Sea. This region is of recognized global conservation significance as a Biodiversity Hotspot, WWF Global 200 Ecoregion and Centre for Plant Diversity, several Key Biodiversity Areas (birds, endemic species and freshwater biodiversity) and also includes two Ramsar Sites: Ispani and Kolkheti.

Component part 1 (Kintrishi-Mtirala) is the largest component part, and is dominated by Colchic rainforests with an eastern border that is 27 km from the Black Sea coast, the component part ranges from 250 to 2750 m above sea level. It is mostly a dense mosaic of 23 forest associations with a prominent evergreen understory, and there are streams, rivers and some lower alpine grassland and thickets above the tree line. The diversity of the forest vegetation is

distinctive, including 48 tree, 65 shrub and seven liana species.

Component parts 2 to 7 are lowland sites, with a maximum elevation of 10 m above sea level with a mixture of Colchic lowland forests and wetlands. The wetlands include percolation bogs, fens and some portions of rivers. No marine area is included in the nominated property and the wetlands are all freshwater ecosystems. Parts of components 3, 6 and 7 are only separated from the Black Sea by narrow belts of low-lying coastal dune systems, which are not included in the nomination or the buffer zone.

Region	No	Nominated component parts	Area (ha)	Buffer zone (ha)
Adjara	1	Kintrishi-Mtirala	20,150	9,140
	2	Ispani	248	531
Guria	3	Grigoleti	125	328
	4	Imnati	3,418	13,386[1]
Samegrelo – Zemo Svaneti	5	Pitshora	2,393	
	6	Nabada	2,976	2,586
	7	Churia	1,943	879
		TOTAL	**31,253**	**26,850**

Table 1: Component parts constituting the nominated property, Colchic Rainforests and Wetlands.
[1]Imnati and Pitshora nominated component areas share a common buffer zone.

Given the location in a biodiversity hotspot with high levels of endemism, species richness is high in the nominated property. Species records include at least approximately 1,100 plant, 67 mammal, 15 reptile, 10 amphibian, 55 fish and 327 bird species. Of the birds, 123 breed in the nominated property, and exhibit high levels of endemism. Several species are both local endemics and relict species such as the Colchic Crayfish (*Astacus colchicus*). While less research has been conducted on invertebrates, over 400 species have to date been identified.

The vegetation is a mix of temperate broadleaf, relict and restricted range species, with 82 endemic plants and 33 endemic vertebrates. The Colchic Mire Region contains distinctive peatlands and associated wetland species with high diversity, e.g. in the sphagnum moss taxonomic group, woody species, reptiles and amphibians.

19 species within the nominated property are threatened according to the IUCN Red List of Threatened Species. Six sturgeon, of which four are confirmed to breed in the area are Critically Endangered, among them the Colchic Sturgeon (*Acipenser colchicus* – CR), which is endemic to the rivers of Kolkheti. Four invertebrates, one reptile and one bird species are Endangered, whilst another three invertebrates, one amphibian, two birds and one mammal are considered Vulnerable. The nominated property also harbors healthy populations of large mammal species that are not listed as globally threatened, but which are important in the regional context, including European Brown Bear (*Ursus arctos* – LC), Grey Wolf (*Canis lupus* – LC) and European Lynx (*Lynx lynx* – LC).

The property is nominated under criteria (ix) and (x) based on six attributes. The attributes noted as significant under criterion (ix) are the ecological processes related to the Colchic Rainforests, the ecological processes related to the Colchic mires and associated peatlands and the evolutionary processes related to the flora and fauna of the Colchic Centre of Plant Diversity Euxinian-Colchic ecoregion. The attributes noted as significant under criterion (x) are species richness, restricted range species and Threatened species.

The nominated property appears to hold significant value and benefits to the surrounding communities thanks to cultural and traditional use through beekeeping and foraging in the buffer zones. Further ecosystem services to Western Georgia include flood protection, buffer against sea level rise, and provision of drinking water from the rivers of component part 1 to the city of Batumi and neighboring communities.

3. COMPARISONS WITH OTHER AREAS

The nomination dossier sets out a very systematic comparative analysis. As expressed in its name, the nomination consists of two closely interrelated types of ecosystems: rainforests and wetlands. Thus, the global comparative analysis is divided into two parts under criterion (ix) and a third under criterion (x).

For the rainforest comparison, an initial screening of World Heritage and tentative lists yielded 25 terrestrial properties in the nemoral zone of the Holartic Realm. A thematic filter (focus of OUV on deciduous broad-leaved forest) narrowed the range of properties to 14. The Hyrcanian Forests (Iran, inscribed in 2019) and Hyrkan State Reservation (Azerbaijan, Tentative List since 1998) have the clearest similarities with the Colchic rainforests. However, there are profound climatic, structural and functional differences between the Colchic rainforests and the much more arid Hyrcanian forests. The nomination dossier justifies separate inscription as the nominated property is characterized by different selective pressures, adaptive trajectories and successional dynamics in the evolution of nemoral deciduous forests. The nominated property is also marked by a different flora, more tree and shrub species, and a richer vertebrate fauna.

The Colchic Rainforests and Wetlands have by far the smallest area in comparison with all inscribed properties of this comparison, but equal or exceed many of them in the richness of their flora and fauna: The nominated series occupies only 42% of the area of the next smallest (Hubei Shennongjia, China) and

only 2% of the area of the largest inscribed property in the comparison (Central Sikhote Alin, Russian Federation), but concentrates in its relatively tiny area a species richness of vascular plants and vertebrates (including overall counts and endemic species) comparable to the latter.

Regarding the wetlands, the dossier compares the nominated property with all boreal and nemoral mires globally, including in the southern hemisphere, because there are much stronger structural and functional similarities among mires of both hemispheres than is the case with forests. Six inscribed properties and three Tentative List sites are used for comparison, plus a Ramsar site (Kopuatai Peat Dome, New Zealand) which shows superficial similarities to the peatlands of the Colchic Mire region. The mires of the Colchic mire region, particularly its percolation bogs (i.e. exclusively rain-fed mires), represent a functional type of peatland that is not found anywhere else in the world, and that is at the same time the simplest type of mire in terms of its functionality. Since peatlands – in spite of their significant global area coverage and their even greater importance as terrestrial carbon stores – currently appear to be under-represented on the World Heritage List, the dossier asserts that inclusion of representative peatlands, and particularly their simplest type, on the World Heritage List is justified by this global comparison.

IUCN, in collaboration with UNEP WCMC, has undertaken supplementary comparative analysis, concluding that the ecosystems and biodiversity that characterise the nominated property appear to be of very high global significance, based on spatial analyses and literature review, both with regards to criteria (ix) and (x).

The nominated property is not found in a biogeographical unit which has been mentioned previously as a gap on the World Heritage List, nor does it overlap with any protected area considered to be amongst the most irreplaceable in the world for the conservation of mammal, bird and amphibian species. However, it overlaps with two Important Bird Areas (IBAs), Kolkheti and Kintrish, which are considered globally significant, especially for migrating birds.

Regarding criterion (ix), the nominated property lies in ecoregions – two terrestrial and one freshwater – that are not well represented on the World Heritage List. In particular, there is currently no inscribed property in the Euxine-Colchic Broadleaf Forests ecoregion. The nomination is located entirely in the Caucasus terrestrial hotspot, as well as in a Centre of Plant Diversity and an Endemic Bird Area – the Caucasus –, which has only one inscribed site. The nominated property appears to be an excellent example of the Colchic swamp forests and peatlands, which are only found in the lowlands of Georgia.

With respect to criterion (x), the nominated property has a relatively high level of floral and faunal diversity compared to sites with similar forest and wetland features. The nominated property also has a high proportion of endemic species, with numerous endemic plant species and almost a third of its mammals, amphibians and reptiles reported to be endemic. It also hosts significant numbers of globally threatened species, including many plants and birds. The nominated property is a key stopover for many globally threatened birds that migrate through the Batumi bottleneck.

Overall, the desk reviews received by IUCN confirmed the global significance of the nominated property under both criteria. In conclusion, IUCN considers that the nominated property constitutes a strong case to meet both criteria under which the site has been nominated.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

All protected areas in Georgia, except the category of protected landscapes, are state-owned. This also applies to the entire nominated area of the Colchic Rainforests and Wetlands, which is currently part of two national parks (Mtirala and Kolkheti National Parks), two strict nature reserves (Kintrishi and Kobuleti Strict Nature Reserve), and a very small part of the nomination in Kintrishi Protected Landscape.

The component parts that are part of national parks are either within their strict protection zones or their visitor zones. The visitor zones of national parks differ from strict protection zones only in that they are accessible for visitors along marked trails and provide for small-scale visitor infrastructure. The development of small visitor infrastructure has to be in agreement with the long-term conservation objectives of the national park in question. No natural resource extraction is allowed in those visitor zones.

The buffer zones also consist of protected areas (except for 208 ha) and typically correspond to IUCN Protected Area Management Categories IV or V, or of Traditional Use Zones and/or Visitor Zones of National Parks (IUCN Protected Area Management Category II).

IUCN considers that the protection status of the nominated property meets the requirements of the *Operational Guidelines*.

4.2 Boundaries

The nomination describes the boundaries set for the component parts, which are all well protected, well researched and effectively managed existing protected areas. The areas included are subject to the highest levels of protection, have the least evidence of prior human impact and have no human activities other than limited low intensity visitation. All settlements, infrastructure and economic activities have been excluded from the nominated area. IUCN considers that this approach to delineate the site boundaries is adequate.

The nomination acknowledges the possibility of the creation of new protected areas in future (e.g. potential Racha-Lechkhumi-Lower Svaneti National Park), including further analysis that might provide opportunities for a future extension of the Colchic Rainforests and Wetlands. IUCN notes that there is indeed scope to extend the boundaries of the nominated property in the future. In particular, several freshwater KBAs in the Colchic region of Georgia are not fully covered and allow for further work to 1) extend existing protected areas, 2) collaborate with other landowners or 3) to create new protected areas. For migratory species, the boundaries only incorporate part of the resting and wintering areas for several important species. The Batumi Important Bird Area (GE 015) is a bottleneck of raptor migration, which partly overlaps with the southern portion of component part 1 – Mtirala-Kintrishi. However, seasonal migration counts are provided for the entire IBA and are not specific to the nominated area. On the other hand, raptor counts have not been undertaken in each component part and it is likely that raptors also roost in the lowland forests for Kolkheti National Park.

The partial inclusion of KBAs and IBAs is also due to the fact that the boundaries of the protected areas date back to their period of creation and were not the subject of strategic conservation planning using key biodiversity areas. Nevertheless, the nominated areas receive the most rainfall and structural variations and heterogeneity for the rainforests and contain the most representative relevant mires in different stages of succession for the lowlands are included in the nomination.

In terms of proposed buffer zones, IUCN notes that each component part has a separate buffer zone, except component parts 4 (Imnati) and 5 (Pitshora), which are connected through one shared buffer zone. The IUCN World Heritage Panel noted that integrity could be improved if the buffer zone of component parts 4 and 5 would be joined with the nearby buffer zones of component parts 6 (Nabada) and 7 (Churia) to improve connectivity and river habitats for the critically endangered Sturgeon. In response to the Panel's remarks, the State Party provided supplementary information, in which it confirmed its position on how to ensure the integrity of the nominated property, including the feasibility to expand the buffer zones between component parts 4, 5, 6 and 7, as well as in western margins to include coastal dunes. An extension of Kolkheti National Park is already in preparation to include the lower reaches of the Rioni River and the marine section adjacent to its estuary. The State Party also committed to extending the northern buffer zone of component part 7 (Churia).

In summary, IUCN concludes that the nominated property includes the elements that are essential to express its Outstanding Universal Value whilst noting that there is both scope to further enhance and broaden the conservation of the nominated area by extending the coverage of protected areas beyond the nominated property. Opportunities also exist to further strengthen the buffer zone arrangements, through the submission of a minor boundary modification in the near term, reflecting the commitments made by the State Party in this regard.

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

4.3 Management

The nominated property is located in protected areas that are managed by the Agency of Protected Areas of Georgia (APA), established in 2008, and reporting to the Ministry of Environmental Protection and Agriculture of Georgia (MEPA).

The centralised approach to protected area administration has ensured that all component parts receive adequate oversight and that there is a consistent approach to management of the component parts in relation to management planning and resource allocation. All protected areas are required to have legally binding Management Plans, which may not be overruled by other plans. Three out of four management plans have been finalized, two of which were adopted in 2019; therefore it will be necessary to complete the fourth one and to implement these quickly to ensure fully cohesive management. In terms of integrated management for the entire serial property, IUCN notes that a joint management plan is planned to be completed which should be finalized as soon as possible.

The establishment of an Internal Coordination Group consisting of key government stakeholders of all concerned protected areas will assist in coordination of the serial property. Distribution of resources between the nominated component parts to effect active cooperation between the administrations of the component parts and sharing of information and responsibilities concerning ongoing capacity building and support, conservation status, emergency response and identification of risks will also enhance the properties coordinated management, as will the development of the proposed 'Integrated Management and Monitoring Document'. According to the nomination dossier, there are 68 staff assigned to the component protected areas, with a further 14 posts planned.

Funding, in addition to government budgets, has come from a number of NGOs, international organizations, including the Global Environment Facility (GEF) and government aid including from Germany and Norway and will continue until 2024. It will be important to sustain funding beyond 2024 to ensure effective management of the nominated property.

Based on reviews and assessments by the field mission, IUCN considers that governance arrangements are in line with good protected area management practice that involves a participatory approach to planning and management. An adequate and skilled management force is in place backed by a clear and strong legal framework. The management of protected areas is also supported by further

management tools, including a communication strategy, ecotourism strategy and action plan and a waste management plan. There is a statutory process for management planning with each protected area having a Regional Advisory Council, which includes a wide range of stakeholders.

IUCN considers that the management of the nominated property meets the requirements of the *Operational Guidelines.*

4.4 Community

All land in the nominated property is publicly owned and managed by the Government of Georgia. There are no inhabitants or built structures in the nominated area and population density is very low in the buffer zone (only 25 families) and adjacent areas. Stakeholder involvement in planning and management of protected areas in Georgia is legally prescribed in the 1966 Law of Georgia on the System of Protected Areas and implemented through Regional Advisory Boards (specific for each PA), which bring together representatives of municipalities, institutions active in the region, resource users and other important stakeholders. The field evaluation did not detect community opposition to the nomination and reports strong community support for the protected areas.

4.5 Threats

Overall threats to the nominated property appear to be low with generally a low population density in proximity of the component parts. Currently tourism does not appear to be a threat to the component parts with relatively low numbers of visitation. In 2018, there were 110,000 individual visits to the four protected areas and this has been increasing over the last 10 years. Planning has focused on concentrating the majority of tourism in the buffer zones. Hunting is generally banned in Georgian protected areas.

Hydropower plants are not allowed in protected areas under Georgian protected area legislation and the nomination dossier indicates that there are no hydropower projects planned in any of the component parts. The existing hydro station, located several kilometres from the Kintrishi National Park boundary on the Chakvistali River, has modifications to allow trout migration.

Climate change projections for the Colchic region, based on observed trends since 1936, anticipate increased temperature and increased rainfall for the region. The lowland areas may be subject to increased flooding to which the wetlands are well adapted as long as the integrity of the wetlands and lowland forests is maintained.

The State Party has provided details on invasive species and development projects in supplementary information. Two non-native pests from East Asia, the Box Tree Moth (*Cydalima perspectalis*), and the Fungus (*Calonectria pseudonaviculata*) have damaged a large proportion of the Boxwood of the Colchic rainforests in component part 1, but regrowth and recovery has been observed since 2018. The Agency of Protected Areas has initiated the preparation of an IAS management plan, which will be elaborated in cooperation with the Protected Areas Development Fund in 2020.

In terms of development projects, IUCN sought additional information on port developments in the vicinity of the nominated property. The State Party clarified, firstly, that the Poti Sea Port, operating since the early 1900s, is located more than 4.5 km from the nominated areas, which are also separated by rivers. Secondly, the State Party noted that the Kulevi Oil Terminal, opened in 2008, is located less than a kilometer away from the nominated areas, but confirmed that no impacts on the nominated areas were identified by the project's EIA. Strict monitoring and reporting is in place. Thirdly and lastly, the State Party clarified that the Ankalia Deep Sea Port project was cancelled in 2020. The State Party has committed to extending the northern buffer zone of component part 7 to provide an additional layer of protection.

IUCN concludes that, overall, threats to the nominated property currently appear to be low, and those threats that do exist are subject to appropriate management measures. However, IUCN underscores that any impacts from the nearby ports need to be monitored carefully. A rigorous EIA that includes an assessment of potential impacts on the values of the nominated property as well as an assessment of cumulative impacts would be required should a resumption of the Ankalia port project be considered in future.

In conclusion, IUCN considers that the integrity, protection and management of the nominated property meet the requirements of the *Operational Guidelines*.

5. ADDITIONAL COMMENTS

5.1 Consideration in relation to serial properties

a) What is the justification for the serial approach?
The seven component parts cover discontinuous areas of mires and forests in different stages of development. Lowland mires and surrounding lowland Colchic forests included in the protected areas of component parts 2-7 are not contiguous to the mires and forests in different stages of development. The same applies to component part 1 whose mires and Colchic rainforests of different elevations are not adjacent to or contiguous with the mires and forests found elsewhere and in the other component parts. The wetland ecosystems are naturally restricted and warrant a serial approach to encompass the full range of values.

b) Are the separate component parts of the nominated property functionally linked in relation to the requirements of the Operational Guidelines?
The ecosystems and habitats represent an altitudinal range from sea level in the Colchic lowlands to the alpine meadows. The component parts are in proximity to each other spanning 60 km and are subject to the

same climatic and geological processes. These factors determine the functional linkages as evidenced by the common vegetation found in the component parts, which include key relict species from the Tertiary period, high levels of endemism and important habitats of globally threatened species as defined by the IUCN Red List of Threatened Species.

c) Is there an effective overall management framework for all the component parts of the nominated property?
The National Advisory Council for the World Heritage property will continue to assist in management coordination of the nominated property. It also provides support in fundraising, capacity building, stakeholder engagement, promotion of sites and support in addressing and mitigating threats. Each protected area will have an internal coordination group and World Heritage focal point. The organizational structure and management approach of the protected areas are consistent across all component parts. Based on the management of the protected areas, an Integrated Management and Monitoring Document with legal status will include triennial operational plans, annual action plans and resourcing to assist in the integrated management and monitoring of the nominated property.

6. APPLICATION OF CRITERIA

Colchic Rainforests and Wetlands (Georgia) has been nominated under natural criteria (ix) and (x).

Criterion (ix): Ecosystems/communities and ecological/biological processes
The nominated property comprises ancient Colchic rainforests with their characteristic vertical zoning and ecological succession, and wetlands, particularly Colchic mires, with their supporting processes and succession. A unique combination of influences from three mountain ranges to the north, east and south, with the Black Sea to the west, plus high precipitation and a narrow range in seasonal temperature variations results in conditions that have created outstandingly complex and diverse forest structures, peatland accumulations, high levels of endemism and intra species diversity.

The Colchic rainforests are highly humid temperate deciduous rainforests, and among the oldest nemoral broad-leaved forests globally. While they are distinguished from other temperate forests by their rich evergreen understoreys, they also display a remarkably dense mosaic of forest types, with 23 forest associations co-existing within an area of only about 200 km^2. Together with the Hyrcanian Forests, they are the most important relicts of Arcto-Tertiary forests in western Eurasia. Their peculiar and diverse community, which has survived the Pleistocene glacial cycles, includes a multitude of relict and endemic species. It reflects exceptionally constant climatic conditions and is an invaluable example of the manifold long-term evolutionary processes of forest biota over at least 10-15 million years.

The extensive paludified areas along the Black Sea coast are a result of evolutionary and ecological processes related to climate variability in an ancient warm-temperate ecoregion continuously vegetated since the Tertiary period. The exceptional character of the mires has led to the recognition of a distinct Colchis mire region. Their percolation bogs are of particular global importance as they do not exist anywhere else in the world. They can be considered the simplest and hence typical mire, due to precipitation which ensures an almost permanent water supply. Percolation bogs are essential for the functional understanding of all mires, and hence of terrestrial carbon storage in general.

IUCN considers that the nominated property meets this criterion.

Criterion (x): Biodiversity and threatened species
The nominated property represents a distinctive area of outstanding biodiversity within the wider Caucasus Global Biodiversity Hotspot, where a rich flora and fauna adapted to warm-temperate and extremely humid climate is concentrated. It belongs to one of the two most important refuge areas of Arcto-Tertiary geoflora in western Eurasia. The nominated property is characterized by a high level of floral and faunal diversity with significant numbers of globally threatened species and relict species, which survived the glacial cycles of the Tertiary.

The nominated property is home to approximately 1,100 species of vascular and non-vascular plants, as well as almost 500 species of vertebrates, and a high number of invertebrate species. It hosts an extremely high proportion of endemic species for a non-tropical, non-island region. There are 149 species of plants with a restricted range and almost one third of mammals, amphibians and reptiles are endemic. The contribution of endemic species to amphibians, reptiles and mammals of the region is at 28%.

Fourty-four globally threatened or near-threatened species of vascular plants, 50 of vertebrates, and eight of invertebrates have been recorded in the Colchic Rainforests and Wetlands. The nominated property also harbors sturgeon species, including the Colchic Sturgeon (*Acipenser colchicus* - CR), and serves as a key stopover for many globally threatened birds that migrate through the Batumi bottleneck.

IUCN considers that the nominated property meets this criterion.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B and WHC/20/44.COM/INF.8B2;

2. Inscribes the **Colchic Rainforests and Wetlands (Georgia)** on the World Heritage List under natural criteria (ix) and (x);

3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis

The property is situated in Georgia, within the Autonomous Republic of Adjara as well as the regions of Guria and Samegrelo-Zemo Svaneti. It comprises a series of seven component parts, which are located close to each other within an 80 km long corridor along the warm-temperate and extremely humid eastern coast of the Black Sea. They provide an almost complete altitudinal series of the most typical Colchic ecosystems running from sea level to more than 2,500 m above sea level. The main ecosystems are ancient deciduous Colchic rainforests and wetlands – particularly percolation bogs and other mire types of the Colchic mire region, a distinct mire region within Europe and Eurasia.

The Colchic Rainforests and Wetlands are relict forests, which have survived the glacial cycles of the ice age. The extremely humid nemoral broad-leaved rainforests comprise a highly diverse flora and fauna, with very high densities of endemic and relict species. This is the result of millions of years of uninterrupted evolution and speciation processes within the Colchic Pliocene refugium. The peatlands of the Colchis mire region, which are closely interlinked with lowland Colchic rainforests, also reflect the mild and extremely humid conditions there. These allow for the existence of percolation bogs, the simplest functional type of mires, only occurring in the Colchis mire region. In addition to percolation bogs, there is a complete series of other succession stages of mire development in the Colchic wetlands.

Criteria

Criterion (ix)
The property comprises ancient Colchic rainforests with their characteristic vertical zoning and ecological succession, and wetlands, particularly Colchic mires, with their supporting processes and succession. A unique combination of influences from three mountain ranges to the north, east and south, with the Black Sea to the west, plus high precipitation and a narrow range in seasonal temperature variations results in conditions that have created outstandingly complex and diverse forest structures, peatland accumulations, high levels of endemism and intra species diversity.

The Colchic rainforests are highly humid temperate deciduous rainforests, and among the oldest nemoral broad-leaved forests globally. While they are distinguished from other temperate forests by their rich evergreen understoreys, they also display a remarkably dense mosaic of forest types, with 23 forest associations co-existing within an area of only about 200 km^2. Together with the Hyrcanian Forests, they are the most important relicts of Arcto-Tertiary forests in western Eurasia. This peculiar and diverse community, which has survived the Pleistocene glacial cycles, includes a multitude of relict and endemic species. It reflects exceptionally constant climatic conditions and is an invaluable example of the manifold long-term evolutionary processes of forest biota over at least 10-15 million years.

The extensive paludified areas along the Black Sea coast are a result of evolutionary and ecological processes related to climate variability in an ancient warm-temperate ecoregion continuously vegetated since the Tertiary period. The exceptional character of the mires has led to the recognition of a distinct Colchis mire region. Their percolation bogs are of particular global importance as they do not exist anywhere else in the world. They can be considered the simplest and hence ideal-typical mire, due to almost permanent water supplied exclusively by precipitation. Percolation bogs are essential for the functional understanding of all mires, and hence of terrestrial carbon storage in general.

Criterion (x)
The property represents a distinctive area of outstanding biodiversity within the wider Caucasus Global Biodiversity Hotspot, where a rich flora and fauna adapted to warm-temperate and extremely humid climate is concentrated. It belongs to one of the two most important refuge areas of Arcto-Tertiary geoflora in western Eurasia. The property is characterized by a high level of floral and faunal diversity with significant numbers of globally threatened species and relict species, which survived the glacial cycles of the Tertiary.

The property is home to approximately 1,100 species of vascular and non-vascular plants, as well as almost 500 species of vertebrates, and a high number of invertebrate species. It hosts an extremely high proportion of endemic species for a non-tropical, non-island region. There are 149 species of plants with a restricted range and almost one third of mammals, amphibians and reptiles are endemic. The contribution of endemic species to amphibians, reptiles and mammals of the region is at 28%.

Forty-four globally threatened or near-threatened species of vascular plants, 50 of vertebrates, and 8 of invertebrates have been recorded in the Colchic Rainforests and Wetlands. The property also harbors sturgeon species, including the Colchic Sturgeon, and serves as a key stopover for many globally threatened birds that migrate through the Batumi bottleneck.

Integrity
The component parts of the Colchic Rainforests and Wetlands have been selected based on a careful regional analysis. The boundaries of component parts incorporate attributes necessary to convey the Outstanding Universal Value, mostly following natural features such as mountain ridges. The component parts cover most of the existing mires of the Colchis mire region, and the best preserved and most representative rainforests. The property includes more than 90% of the altitudinal range at which Colchic rainforests occur, and the great majority of typical

forest associations. They also comprise a complete successional series of the mires characteristic of the Colchis mire region. The property as a whole holds the great majority of the Colchic flora and fauna, and an even greater proportion of the endemic plant species found in the wider region is concentrated here.

There were significant losses to the Colchic rainforests and mires across the Colchic region until the late 20th Century. In contrast, the forests and mires inside the property have remained fully intact both structurally and functionally, as shown by their community structure and ecological processes. While some of the Colchic mires were slightly degraded by nearby draining in the past, their current hydrological intactness and resilience is ensured by their dependence on atmospheric precipitation, high mire oscillation capacity, the stabilizing effect of the nearby sea, and extensive upstream buffer zones.

Protection and management requirements

The component parts of the property are effectively protected against local anthropogenic threats. Only small parts of some of the buffer zones are slightly affected by an acceptable level of traditional natural resource use. All the component parts of the property, and all but 208 ha of the buffer zone, are situated on state-owned land within legally designated protected areas. These are either strictly protected areas (IUCN Protected Area category Ia), or those zones of National Parks (IUCN Protected Area category II) that afford the highest levels of protection. Only a very small part of the property belongs to a protected landscape (IUCN Protected Area category V). The boundaries of these protected areas are known and accepted by the local population.

The protected areas that cover the property are managed by the Agency of Protected Areas of the Ministry of Environmental Protection and Agriculture of Georgia, through its local Protected Area Administration. Sustainably funded integrated management of the entire property is required in addition to the implementation of comprehensive management plans for all four protected areas. Coordination of component areas is enabled as all are managed by the Agency of Protected Areas. An integrated management framework of the property has been developed and requires finalization.

There is scope for the protected areas to be expanded further, based on strategic conservation planning using Key Biodiversity Areas, which may provide an additional layer of protection to the property, and possibly allow for future extensions to both the property and buffer zones to be considered. This is particularly important in view of existing and potential developments in proximity of the property and along the Black Sea coast. Any development projects need to be subject to rigorous Environmental Impact Assessment procedures, and should not go ahead in case of potential negative impacts on the property's Outstanding Universal Value.

4. Commends the State Party for its commitment to expand the buffer zones of the property and to consider further enhancement of the conservation of the property by potentially adding additional areas, especially to protect critically endangered sturgeon through plans for a new protected area adjacent to the property;

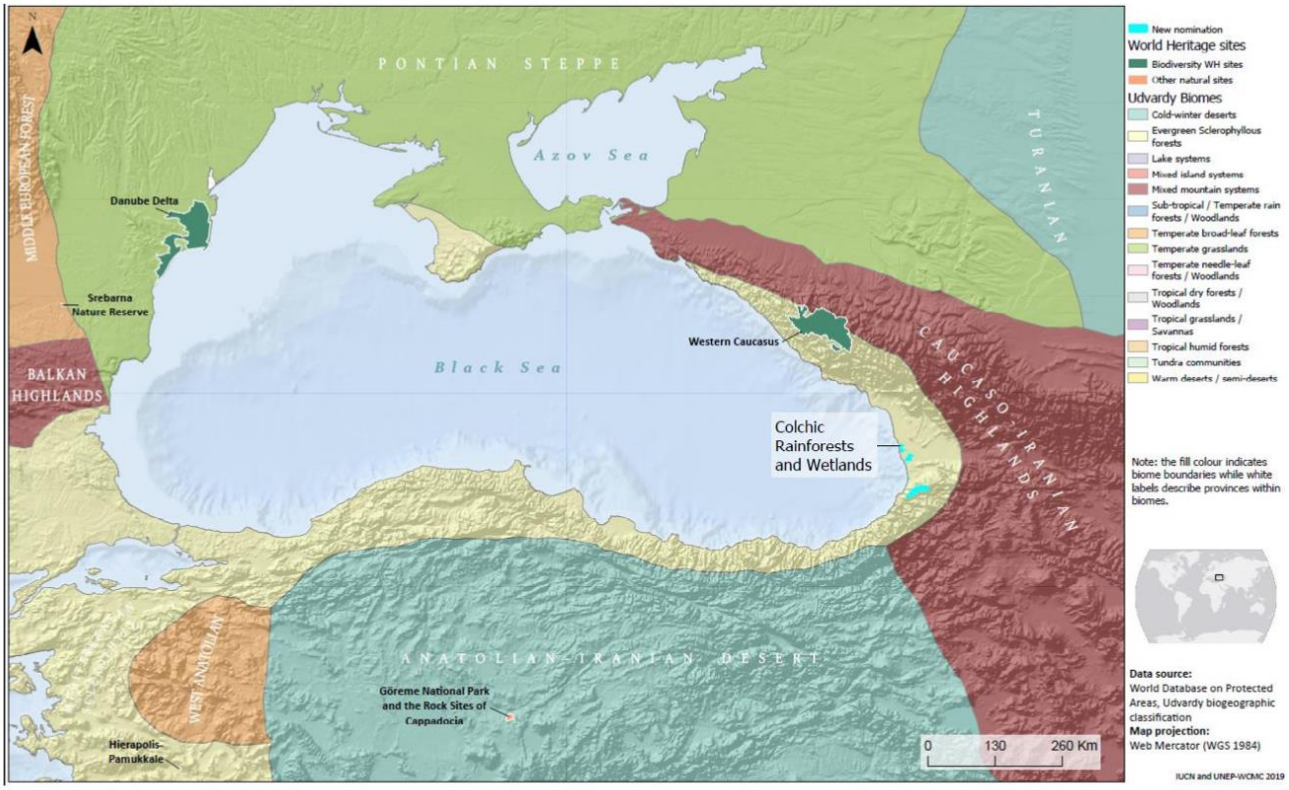
5. Strongly encourages the State Party to submit the proposed extensions of the buffer zones of the Churia component part towards the North and of the Nabada component part to support the conservation of the sturgeon population as a minor boundary modification, if possible, by **1 February 2023**;

6. Requests the State Party to

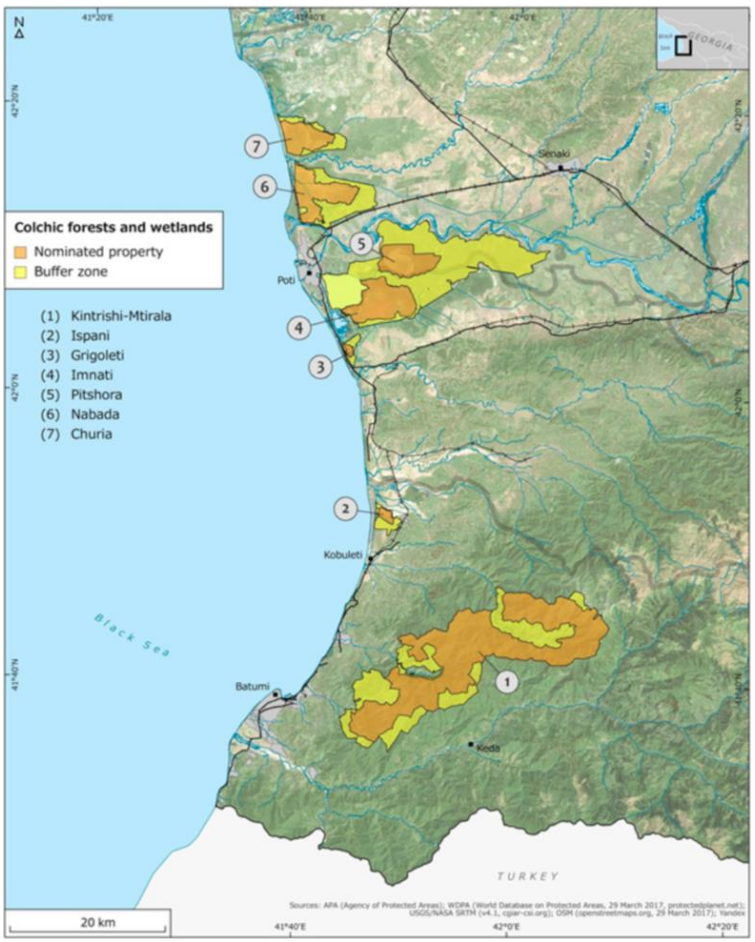
a) Continue to assess the feasibility of expanding the buffer zones around component parts 4, 5, 6, and 7 to ensure that they have higher connectivity, and to provide further details of the conclusions of this feasibility study to the World Heritage Centre, for review by IUCN, by **1 December 2022**,
b) Continue to assess the feasibility of expanding the buffer zone to protect coastal dunes that provide a barrier between the unique percolation mires and the Black Sea,
c) Finalize the Joint Management Plan for the entire serial property as a matter of priority and submit it to the World Heritage Centre for review by IUCN.

7. Acknowledges with thanks the support provided by donors and international development agencies to the protection and management of the property and encourages these donors to maintain and, if feasible, strengthen this support to contribute to the effective management and governance of this property in the long term.

Map 1: Location of the nominated property



Map 2: Nominated property and buffer zone



EUROPE / NORTH AMERICA

CLASSICAL KARST

SLOVENIA

Cerknisko polje © Valentin Schein

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

CLASSICAL KARST (SLOVENIA) – ID N° 1615

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: Not to inscribe the property under natural criteria.

Key paragraphs of Operational Guidelines:
Paragraph 77: Nominated property does not meet World Heritage criteria.
Paragraph 78: Nominated property does not meet integrity, protection and management requirements.

Background note: The World Heritage Committee's attention is drawn to Decision 35 COM 12C in which the Committee took note of the selection of 10 pilot projects considering nominations before their preparation (Upstream Process), including a pilot project on the Dinaric Karst Serial Nomination (Albania, Bosnia and Herzegovina, Croatia, Italy, Montenegro, Serbia and Slovenia). The progress report to the Committee on the Upstream Process of 2018 (WHC-15/39.COM/9A), related to Decision 39 COM 9A, noted that despite a good start there had been no indication of progress reported from States Parties regarding the Dinaric Karst Serial Nomination since the 38th session of the Committee. The States Parties have requested to phase out the Dinaric Karst Serial Nomination as one of the Upstream Process pilots.

The below report also notes, in particular, that the nominated property is located in close proximity to the Skocjan Caves World Heritage property (Slovenia), which was inscribed on the World Heritage List in 1986, via Decision 10 COM VIII. Through Decision 38 COM 8E, taken in 2014, the Committee adopted the retrospective Statement of Outstanding Universal Value for the property, under criteria (vii) and (viii), recognizing the property's limestone caves comprising collapsed dolines among other karst features. The Statement of OUV also noted the biodiversity values of the Skocjan Caves.

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1. DOCUMENTATION

a) Date nomination received by IUCN: Original nomination received in March 2019.

b) Additional information officially requested from and provided by the States Parties: Following the IUCN field mission, the State Party submitted additional information on karst poljes, subterranean fauna, threats and impact monitoring. Following the IUCN World Heritage Panel a progress report was sent to the State Party on 19 December 2019. The letter advised the State Party on the status of the evaluation process noting that the nomination had some fundamental issues that precluded the possibility to recommend inscription on the World Heritage List. The issues pertained to the close relationship of the present nomination to the existing Škocjan Caves World Heritage property and the wider Dinaric Karst region. In addition, the Panel identified issues concerning the approach to boundary design and aspects of integrity, and the buffer zone, and concerning legal protection, management capacity, and provision of sustainable funding. The Panel did not request further supplementary information. On 20 February 2020, the State Party submitted additional information. IUCN also met with representatives of the State Party on 27 January 2020 in order to engage in dialogue on the nomination and clarify the views of the IUCN World Heritage Panel following its December 2019 consideration.

c) Additional literature consulted: Various sources, including: Culver, D.C., and Sket, B. (2000). Hotspots of subterranean biodiversity in caves and wells. Journal of Cave and Karst Studies, 62(1): 11-17; Dingwall, P.R., Weighell, T. & Badman, T. (2005). Geological World Heritage: A Global Framework. IUCN, Gland, Switzerland; Williams, P. (2008). World Heritage Caves and Karst. IUCN, Gland, Switzerland; IUCN (1986). Technical Evaluation, Skocjan Caves (Yugoslavia) – ID No. 390; Mihevec, A., Prelovšek, M., and Hajna, N. Z. (eds). (2010). Introduction to the Dinaric Karst. Postojna: ZRC SAZU; Zagmajster, M., Prevorčnik, S., and Sket, B. (2014). List of troglobiotic (obligate subterranean) animal species or populations in the Postojna-Planina cave system. Unpublished report. Department of Biology, Biotechnical Faculty, University of Ljubljana.

d) Consultations: 15 desk reviews received. The mission met with a wide range of stakeholders including representatives of the ministries, regional and local authorities and local communities, scientists, civil society, and tourism sector.

e) Field Visit: Kyung-sik Woo and Oliver Avramoski, 16-20 September 2019

f) Date of IUCN approval of this report: May 2020

2. SUMMARY OF NATURAL VALUES

The nominated property, Classical Karst, is located in Slovenia nearby the existing Škocjan Caves World Heritage property. The nominated property covers a total of 25,461 ha with a buffer zone of 58,339 ha. It belongs to two large karst river basins: Reka and Timavo River, and Ljubljanica River.

The area is part of the Dinaric Alps, which originated from the Adriatic-Dinaric carbonate platform. Its geomorphology is a result of tectonics spanning over 30 million years. The nominated property is part of a larger limestone and dolomite region that extends southeast along the Adriatic coast to Montenegro and beyond. According to Mihevec et al. (2010), the Dinaric Karst is the major morphological type of landscape of the Dinaric Alps, extending over approximately 60,000 km^2, which represents the largest continuous karst landscape in Europe.

Fault structures and thrust of the Idrija Fault shape the landscape of the nominated property, which displays a highly complex and dynamic hydraulic system of combined surface water and groundwater flows, which are directly connected to various micro- and macro-features of karst ranging from ponors, karst and vaucluse springs to numerous and extensive caves, dolines, and poljes. The nomination dossier particularly highlights the series of interconnected poljes, which are considered unique due to their placement within the tectonic structures of the Idrija Fault and comprise various stages of development.

The series of poljes ranges in height from Babno and Loško poljes down to Cerkniško, Planinsko and Logaško poljes. Loško Polje and the Slovenian section of Babno Polje bordering Croatia are included in the buffer zone of the nominated property, whilst Cerkniško and Planinsko poljes are located within the nominated property. Logaško Polje is situated outside of both the nominated property and its buffer zone. The nominated property also stretches south-westwards from Cerkniško Polje, across the Javorniki Mountain range, to include a section of Pivka Polje. This polje represents an old stage polje still showing an active groundwater flow system connected to Planinsko polje.

The continuous development of the karst geomorphological features in the nominated property has enabled the development of various habitats (surface, intermittently flooded and aquatic habitats, as well as intermediate or underground-surface habitats) that support a varied and notable cave fauna. The cave fauna is supported by the relatively extensive bioproduction on the surface with organic matter and nutrients entering the system with infiltrating water. The nominated property is characterised by its remarkable number of cave-dwelling species (206), out of which 117 are aquatic. The nomination highlights that the vast majority of the cave-dwelling species are endemic to the Dinaric Karst, most of them to Slovenia and some to the nominated property, such as the amphipod *Niphargobates orophobata* (VU) that has only been found in Planinska jama cave. More than 400 non-cave-dwelling animal species have also been registered in the nominated property, playing an important role in the ecology of the cave systems.

The nominated property encompasses one Ramsar site (Cerknisko polje) two IBAs (Lake Cerknika and Planina Polje) and intersects with one KBA (Sheznik Plateau and Pivka Valley). This KBA is also partially covered by the Sneznik-Zdrocle component part of the transnational World Heritage property Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe.

Besides geological, ecological and biodiversity values, the nomination dossier highlights the aesthetic value of Classical Karst thanks to its caves, water bodies and poljes that have been long recognised. Global recognition of Classical Karst is driven by its scientific value linked to the contribution made to the study of karst and by its touristic value that is based on the beauty of karst caves.

3. COMPARISONS WITH OTHER AREAS

The nomination of the Classical Karst proposes consideration under all four natural criteria. The global comparative analysis provided in the nomination dossier is divided into two parts pairing firstly the comparison of criterion (vii) with criterion (viii), and secondly criterion (ix) with (x).

The analysis provided for criteria (vii) and (viii) sets out the history of karst science linked to Classical Karst describing how it became the cradle of global recognition of international type-site karst.

Regarding the comparison for criterion (vii), desk reviewers noted that the nomination is lacking a specific evaluation for this criterion, which would need to assess visual aspects and compare a range of aesthetic characteristics associated with the appreciation of the nominated area. The aesthetic appeal of poljes during the flooding period and the natural beauty of caves and related popularity of cave tourism are put forward as arguments in the nomination dossier, but they are neither set within regional or global contexts, nor convincing in making a case for their global significance. The analysis does not provide a comparison of the nominated area's aesthetic attributes with other karst sites or with other World Heritage properties inscribed under criterion (vii). IUCN considers that, whilst the features of the nominated property are clearly appealing, and notable at national and regional levels, there is no basis to consider that they are globally outstanding aesthetically.

Concerning criterion (viii), the global comparative analysis provides an overview of 53 World Heritage properties containing karst. The analysis argues that the nominated property includes both active and inactive polygenetic and polyphase poljes, whereas poljes in other World Heritage properties would be either active or inactive. However, this is the only claim brought forward besides an overarching claim that the nominated property would supersede all other karst sites, be they listed as World Heritage property or not, due to the outstanding significance of Classical Karst for science. As the nomination dossier omits a systematic comparison for criterion (viii) besides the description of the nominated area's importance for science, IUCN considers that the global comparative analysis does not demonstrate that the nominated

property is globally exceptional in comparison to karst sites already inscribed on the World Heritage List. IUCN notes that the Classical Karst is part of a larger limestone region that extends along the Adriatic coast to Montenegro and beyond. Based on the relevant thematic study on karst and World Heritage (Williams, 2008), IUCN considers that the nominated property could potentially contribute to a transnational karst nomination spanning the Dinaric Karst region that would need to include a representative range of karst values and features of all scales above and below ground from the mountains to the sea

For criterion (ix) and (x), the global comparative analysis presents the ecological and biodiversity values of a number of World Heritage properties and the Tentative List site Vjetrenica Cave in Bosnia and Herzegovina, which is also part of the Dinaric Karst. Based on review input and further comparative analysis, IUCN considers that a more detailed study of cave-dwelling fauna would have been needed for the comparative analysis to aid the identification of attributes and to unequivocally confirm potential OUV.

With respect to criterion (ix), the significant cave-dwelling fauna found in the Postojnska Jama and Planinska Jama cave system can be used as a proxy or indicator of the conservation value of the related ecosystem and biological processes. However, the nomination file does not specifically identify the ecological and biological processes in the evolution and development of the cave ecosystem(s) that would be the attributes of the potential OUV under this criterion. Again, the comparative analysis focuses on the value for science rather than on the value of the ecosystem itself and on how natural processes are related to noteworthy species richness and phylogenetical uniqueness.

Regarding criterion (x), the richness of cave-dwelling species especially in the Postojnska jama and Planinska jama cave system is remarkable, including endemic species. This cave system can therefore be considered a significant natural habitat. However, the nomination dossier does not present a detailed evaluation of biodiversity in the nominated property in terms of its conservation importance. It includes neither a detailed biogeographical analysis nor estimates of the share of the global population of those species occurring within the nominated property. No information is provided on the presence of threatened species on the IUCN Red List.

IUCN, in collaboration with UN Environment-WCMC, has undertaken supplementary comparative analyses based on spatial analyses and literature review. This analysis notes that the biodiversity characterising the nominated area appears to be of regional significance, both with regards to criteria (ix) and (x), as far as overground vertebrate species are concerned.

For criterion (ix), IUCN notes that the nominated property is located in biogeographical regions and global conservation priority regions that are already represented on the World Heritage List. For criterion (x), IUCN notes that the nominated property partly overlaps with a protected area listed amongst the top 1.4% most irreplaceable globally for the conservation of mammal, bird and amphibian species, and the top 0.8% in terms of threatened species, due to the presence of the Cave Salamander (*Proteus Anguinus* – VU), which is globally threatened. However, almost half of this area, located on higher elevation of the Szesnik Plateau, is not included in the nominated area.

In light of the number of properties with karst features already inscribed on the World Heritage List in the Dinaric Karst region, IUCN concludes that the nominated property could potentially be a component part of a larger serial property. However, IUCN considers that the nominated property does not demonstrate OUV in its own right. In terms of comparisons, there is also a crucial overarching issue, which is the specific overlap of the nominated property to the existing inscription of Skocjan Caves. This is discussed below in Section 4.2.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

The protection status of the nominated property and its setting is complex, involving multiple laws and layers of designated areas. The Slovene Environment Act and Nature Conservation Act provide a legal framework for nature protection whilst the Underground Cave Protection Act governs the protection and use of underground caves, protection arrangements, protection measures and other rules of conduct in caves. A municipal Decree also protects the area of Planinsko polje (Ordinance Designating Cultural and Historical Monuments and Natural Sites of Special Interest in the Area of the Municipality of Postojna) and natural monuments including the Postojna Cave.

A large part of the nominated property falls under the jurisdiction of the Slovenian Armed Forces, managing the security belt of the main training area of Postojna, which may prevent visitation in these areas of the nominated property. In addition to different sectors assuming responsibility for the nominated property, IUCN notes that most of the nominated property is in private or traditional ownership. Only 26% of the nominated area is owned by state and local authorities.

Various overlapping layers of nationally designated areas of natural and cultural heritage as well as Natura 2000 protect most, but not all of the nominated property.

The buffer zone is protected by 72 individual protected areas, including 2 Landscape Parks, 1 Nature Reserve and 69 Natural Monuments, but the area of the buffer zone is not covered in its entirety by protected areas and land use regulations, defining permitted and prohibited activities, vary across a myriad of designations and laws. IUCN notes that no unified management zoning for the nominated property and its buffer zone is in place. In conclusion, IUCN considers

that the existing protection regime would not provide adequate protection of values under criteria (ix) and (x).

Supplementary information provided by the State Party contends that private landowners are bound by the Environment Protection Act and obligations under Natura 2000 subjecting any development projects to strict requirements for Strategic Environmental Assessments, Environmental Impact Assessment and Appropriate Assessment. While these provisions may support the protection of the nominated area, IUCN notes that they are not specifically tailored to the protection and management of potential OUV and associated attributes.

IUCN considers that the protection status of the nominated property does not meet the requirements of the *Operational Guidelines.*

4.2 Boundaries

The nomination file emphasizes the series of interconnected poljes in various stages of development, as one of the key aspects of the OUV under criterion (viii). This series includes Babno, Loško, Cerkniško, Planinsko and Logaško poljes. However, while Loško Polje and the part of Babno polje located in Slovenia are included in the buffer zone of the nominated property, Logaško polje is entirely outside the property and its buffer zone. The Bač Training Area and Range of the Slovenian military at the south-western boundary of the nominated property is also not included in the buffer zone. Significant parts of the watershed of the Pivka River to the south and west of Logaško polje are likewise not included in the buffer zone due to the reported lack of local support. IUCN is also concerned that not all significant caves appear to be located within the nominated property, specifically the majority of caves are located in the buffer zone (845 caves), whereas only 654 caves are covered by the nominated property.

With a view to ensuring a complete and functional representation of the hydraulic system of the poljes, IUCN considers that the lack of inclusion of these areas into the nominated property and/or buffer zone, creates a major challenge for the integrity of the nomination.

IUCN notes that a crucial issue with the nomination is the proximity of the nominated property to Skocjan Caves World Heritage property whose buffer zone borders the buffer zone of the nominated property. As Skocjan Caves have been inscribed on the World Heritage List under criteria (vii) and (viii), including recognition of its biodiversity values in the Statement of OUV, the nominated property clearly appears to offer complementary values to those in Skocjan Caves. Skocjan Caves lies in an adjoining, though different watershed with distinct karst features, and though Skocjan does not include poljes, both sites can clearly be understood as complementary, especially when considered in the wider context of the Dinaric Karst system. As a result IUCN concludes that there is no justification to include these areas as two separate properties on the World Heritage List.

Overall, IUCN concludes that the lack of inclusion of key attributes of the OUV under criteria (vii), (viii), (ix) and (x), and the need to reconsider the nomination in relation to Skocjan Caves represent critical shortcomings in the current proposal.

IUCN considers that the boundaries of the nominated property do not meet the requirements of the *Operational Guidelines.*

4.3 Management

The management of the nominated property is complex owing to multiple layers of designated areas, laws and decrees involving several municipalities. To coordinate the management of the nominated property, an Agreement for the Management of the Classical Karst World Heritage Property has been signed by key governmental and municipal authorities and a regional development agency.

According to the Agreement, the Partnership Council shall act as principal decision-making body under this Agreement ensuring effective management and coordination of the nominated property. The Agreement also provides for the involvement of other stakeholders through the establishment of the Extended Council, as sub-branch of the Partnership Council, and special working groups.

IUCN notes that neither the Partnership Council nor its extended membership include representatives of rights-holders in spite of the fact that 74% of the nominated area is in private ownership. The governance structure under the Agreement for the Management of the Classical Karst World Heritage Property does not specify mechanisms to provide civil society and rights-holders with opportunities to participate in management planning, processes and actions.

The overall management structure and capacity appears somewhat fragmented whilst the capacity of the management bodies of existing protected areas is currently limited and contingent on external funding and with limited staff.

According to the supplementary information, the management structure has been developed further with funding committed through the Financing of Municipalities Act and from Ministries. However, the amount of funding and whether or not it will be sufficient remains unclear as does the extent to which the private landowners are involved and held accountable, as no role is foreseen for them in the management structure.

The draft management plan for the nominated property sets out four long-term objectives: (1) Conservation of poljes, the subterranean world and their natural features and processes in the Classical Karst area; (2)

Conservation of hydrological characteristics and water quality; (3) Effective management and research of the Classical Karst and international cooperation; and (4) Ensuring a coordinated supply of tourism products and services.

Whilst a positive start, the plan does not clearly relate to the nominated property's potential OUV nor the associated natural values, ecosystem services and cultural values. These values are not identified or described. The current and potential threats to the OUV are not identified, documented and addressed. Types and levels of permitted activities are not described and it remains unclear how its overarching objectives translate to the 74% of privately owned land.

IUCN considers that the management of the nominated property does not meet the requirements of the *Operational Guidelines.*

4.4 Community

Three quarters of the nominated property are in private land ownership. The extent of consultations with landowners and local residents remains unclear and the field evaluators were not able to meet local residents during the evaluation mission. IUCN considers that consultations with and buy-in from local citizens and landowners are critical, also in relation to the effective protection of the nominated property. Governance arrangements which support participatory planning and management do not appear to in place.

4.5 Threats

The nominated property is subject to varying levels of land use and is crossed by a motorway and a railway line. In addition to this infrastructure, the nomination dossier notes plans for a gas pipeline.

Noting that the nominated property depends on clean water inflow, the most important risks are related to water use and pollution. Contaminants in surface water from transport infrastructure, military training grounds, intensive agriculture, waste disposal and wastewater may pollute subterranean waters and habitats.

The nomination dossier states that the regulation of wastewater treatment in the Ljubljanica river basin has significantly improved water quality and currently does not pose a threat to natural processes or biodiversity. At the same time, there remains a need for improved wastewater treatment infrastructure, which depends on structural funds by the EU to meet the standards of the EU Water Framework Directive.

Furthermore, IUCN recalls its evaluation of 1986 for the Skocjan Caves World Heritage property, which noted that Postojna cave, located inside the nominated property, has been significantly altered by tourism development and much higher pollution levels.

Tourism use has a long history and appears to be under control for the time being, but would require a tourism management strategy and more profound consideration in the management plan, including thresholds and distribution of visitation. This is especially important in light of an expected increase in visitation over and above already high levels of visitation in the nominated property, with 800,000 visitors per year in Postojna cave alone.

In conclusion, IUCN considers that the integrity, protection and management of the nominated property do not meet the requirements of the *Operational Guidelines.*

5. ADDITIONAL COMMENTS

5.1 Dinaric Karst Serial Nomination

Recalling the 2008 study of IUCN on World Heritage Caves and Karst, and the initial upstream pilot project on the Dinaric Karst Serial Nomination, IUCN acknowledges the State Party's intention that the nominated property could serve as a first step towards a serial transnational property. An extension of the Skocjan Caves World Heritage property to include the Classical Karst would have the potential to provide this starting point for such a serial transnational property, if the State Party has the objective to provide a basis to launch this process through subsequent extensions. For this process to be considered, however, much more detailed information on an eventually finite and representative transnational series of karst features in the Dinaric Karst would need to be articulated. Thus at the present time, IUCN considers the nomination can only be evaluated based on its merits as a single area in Slovenia (including its relationship to the existing property of Skocjan in the same State Party). IUCN continues to encourage the objective to implement a serial approach to the recognition of the Dinaric Karst region on the World Heritage List, as detailed in the above mentioned thematic study, and remains willing to assist the States Parties in this process.

6. APPLICATION OF CRITERIA

Classical Karst has been nominated under natural criteria (vii), (viii), (ix) and (x).

Criterion (vii): Superlative natural phenomena or natural beauty or aesthetic importance

The nomination dossier highlights the nominated property as a research site that has been instrumental for karst hydrology, however this does not respond to the definition of criterion (vii). The aesthetic appeal of poljes during the flooding period and the natural beauty of caves and associated popularity of cave tourism put forward in the nomination dossier may potentially be of regional significance. The nomination dossier confirms that the area is not unique in terms of its landforms. Alone these features do not reach the levels of significance to justify OUV, although they would add attributes to the inscription of Skocjan Cave,

were the nomination to be considered as an extension of that property.

IUCN considers that the nominated property does not meet this criterion.

Criterion (viii): Earth's history and geological features

The justification in the nomination dossier stresses the importance of the nominated property to scientific research exceeding that of other karst sites. The dossier lacks the interregional comparative analysis, to support this assertion, and IUCN considers that the value of the nominated property is as part of a larger set of geological values across key sites in the Dinaric Karst region as a whole.

IUCN notes the significance of complex and dynamic karst processes associated with the poljes and other karst features that are covered by the nominated property are impressive, but are only one facet of the diverse values of the wider Dinaric Karst. Furthermore, two of the most important poljes are not included (Babno polje and Losko Polje) and 845 caves are located in the buffer zone whereas only 654 are covered by the nominated property. There is also clear complementarity between the nominated property and the adjacent Skocjan Caves World Heritage property. The nominated property could potentially contribute to this criterion as an extension to Skocjan Caves, but does not demonstrate OUV in its own right.

IUCN considers that the nominated property does not meet this criterion.

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

The nomination dossier argues that the very rich cave fauna demonstrates the transition of biota from surface to subsurface habitats and their evolution. However, the nomination does not specify attributes of potential OUV under this criterion, i.e. ecological and biological processes in the evolution and development of the cave ecosystem(s), and it appears that the ecological values are not outstanding across the Dinaric Karst, but rather complementary and equivalent to a number of other sites. IUCN further notes that the nominated property is located in biogeographical regions and global conservation priority regions that are already well represented on the World Heritage List.

IUCN considers that the nominated property does not meet this criterion.

Criterion (x): Biodiversity and threatened species

The nomination dossier claims that the number and density of cave-dwelling species is globally unique. However, the dossier does not present a detailed assessment of biodiversity in the nominated property, especially in terms of its conservation importance compared to other sites. There are comparable biodiversity values referred to in the current Statement of Outstanding Universal Value of the nearby Skocjan Caves World Heritage property, and IUCN considers that an extension of Skocjan Caves to include the nominated property may have potential to demonstrate OUV under criterion (x). IUCN further notes that the nominated property overlaps only partially with a protected area listed amongst the top 1.4% most irreplaceable in the world for the conservation of mammal, bird and amphibian species, and thus also does not demonstrate integrity in relation to the application of this criterion.

IUCN considers that the nominated property does not meet this criterion.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B and WHC/20/44.COM/INF.8B2

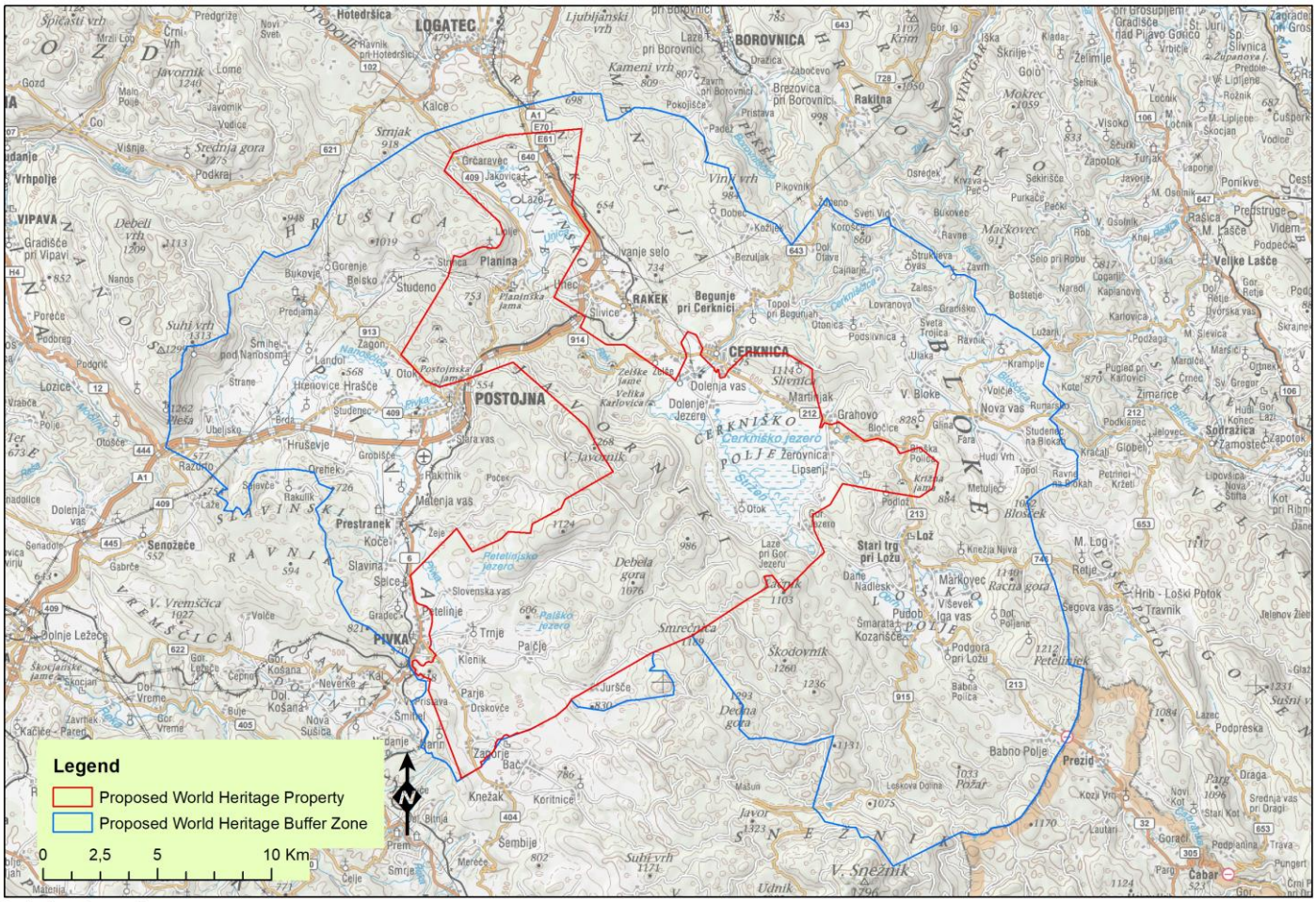
2. Decides not to inscribe the **Classical Karst (Slovenia)** on the World Heritage List;

3. Strongly encourages the State Party to consider an extension and re-nomination of the Škocjan Caves World Heritage property under criteria (vii), (viii) and (x) in order to

a) include a revised configuration of the Classical Karst in an extended serial property nomination with a single connected buffer zone to strengthen OUV under criteria (vii) and (viii) by adding other attributes such as poljes;
b) consider including criterion (x) to recognise the potentially global significance of Skocjan Caves and the Classical Karst for flora and fauna, especially cave-dwelling animals;
c) confirm the OUV of such a reconfigured nominated property through a revised and more in-depth comparative analysis based on the identification of a revised definition of the attributes conveying value,
d) enhance management and protection so as to respond to high levels of private land ownership and to adequately address threats, such as water pollution, tourism development and others; and
e) strengthen the level of protection and management capacity especially regarding the conservation of biodiversity values;

4. Encourages the State Party to continue to explore the interest of other relevant States Parties in advancing a transnational serial nomination of the Dinaric Karst which would recognize wider karst and associated values.

Map 1: Location of the nominated property and buffer zone



Projection: Gauss-Krüger
Data source: Surveying and Mapping Authority of the Republic of Slovenia, 2015

A. NATURAL PROPERTIES

A3. MINOR BOUNDARY MODIFICATIONS OF NATURAL PROPERTIES

ASIA / PACIFIC

HUBEI SHENNONGJIA

CHINA

WORLD HERITAGE MINOR BOUNDARY MODIFICATION PROPOSAL – IUCN TECHNICAL EVALUATION

HUBEI SHENNONGJIA (CHINA) – ID N° 1509bis

1. BACKGROUND INFORMATION

Hubei Shennongjia was inscribed on the World Heritage List in 2016, consisting of two separate component parts encompassed within a single buffer zone. In its inscription decision, the Committee requested, *inter alia*, the State Party to: *"upgrade the legal protection to nature reserve standard of wildlife corridor and habitat stepping stone areas which are crucial to the property's ecological integrity and consider nominating these as future extensions to the property".* The Committee also noted that the *"relocation of people from the property (…) is a sensitive matter"* and therefore requested the State Party that *"further relocation activities should not be undertaken unless they are fully justified"* (Decision 40 COM 8B.7).

The relevant documentation is available at http://whc.unesco.org/en/list/1509/documents/.

IUCN has consulted the mission expert from the 2015 evaluation mission on the present proposal in providing its advice to the World Heritage Committee.

2. SUMMARY OF PROPOSED BOUNDARY MODIFICATION

The State Party proposes to add an additional 6,306 ha (8.6% increase) to the property, surrounded by a 1-3 km wide buffer zone of an additional 3,854 ha (9.3% increase). Whilst the Shennongding-Badong component would be extended westwards by adding Wulipo National Nature Reserve (NNR), the Laojunshan component would remain separate within a single buffer zone. The proposed addition is a strictly protected area (IUCN Protected Area Category I), in line with the existing property.

Wulipo NNR is listed as an Important Bird Area (IBA) and would contribute seven additional vegetation associations, 34 rare and endangered animal species and add four additional endangered animal species to the property. It benefits from a well-protected catchment that provides good quality water and habitat for the Chinese Giant Salamander (*Andrias davidianus*).

Wulipo NNR is reported not to be inhabited. The only noteworthy infrastructure is a road which cross a part of the buffer zone.

3. IMPACT ON OUTSTANDING UNIVERSAL VALUE

IUCN notes that, with the addition of Wulipo NNR, the protection of a significant corridor and habitat would be enhanced, strengthening the ability of species to move and migrate between Shennongjia forests in Hubei Province and the karst forests and wetlands found in Wulipo NNR and the Daba Mountains. The latter area, as the submission emphasises, is recognized globally for its botanical importance. The proposed modification would also protect additional habitat for the endangered Golden snub-nosed monkey (*Rhinopithecus roxellana*) within the property. This species has been found to be also present in Wulipo NNR, thus further supporting the existing inscription under criterion (x) which noted the subspecies are "*entirely restricted to the property*". The extension will thus support possible future genetic exchange opportunities and population movement. Furthermore, IUCN notes that the boundary modification would extend the altitudinal range of the property to include subtropical evergreen limestone forest within the lower elevations of Wulipo NNR, which offer a winter refuge for species that live in higher elevations during the summer months, thus improving population adaptability. IUCN considers that the minor boundary modification would appear to result in positive outcomes for the protection of the property's OUV adding values and enhancing the property's integrity.

In terms of legal protection, Wulipo NNR's status as nature reserve, equivalent to IUCN Category I, protects a wildlife corridor and habitat stepping stone as suggested by the Committee in its Decision 40 COM 8B.7. The property as currently inscribed is confined to the administrative boundaries of Hubei Province, whilst Wulipo NNR is subject to the jurisdiction of Chongqing Province. However, after modification, all parts of the property are expected to jointly receive the highest-level protection as a National Park, which is expected to be announced in 2020 enabling unified management by state and provincial governments.

Overall, IUCN concludes that the proposed boundary modification would enhance the protection of the property's OUV and hence recommends approval. At the same time, IUCN notes a number of points that should be considered along with the boundary modification:

A revised management plan encompasses the whole property including the extended area. However, the submitted files did not include this plan and no details have been provided on the update of the 2006-2015 Tourism Master Plan, which was requested in Decision 40 COM 8B.7. One aspect that remains thus unclear is how increased visitation demands will be managed following the minor boundary modification. Whilst on the one hand the reason for the proposed inclusion on the World Heritage List is to provide the area with

greater levels of protection, on the other hand, World Heritage listing may attract considerably increased levels of visitation, as noted in the property's Statement of Outstanding Universal Value (SOUV). Therefore, IUCN recommends that the State Party is requested to submit both the revised Management Plan and the currently valid Tourism Master Plan by 1 February 2022, in addition to confirming the proposed national park status and information on how potentially increased demands for visitation will be managed.

Recalling Decision 40 COM 8B.7, IUCN further notes that whilst connectivity is likely to be improved towards the west of the Shennongding-Badong, the boundary modification would not entail improvements of connectivity towards the Laojunshan component, which should be encouraged. The envisaged designation of the property as one of the State Party's first national park pilots could be an opportunity to further enhance connectivity in line with Decision 40 COM 8B.7.

While IUCN notes that Wulipo NNR is reported not to be inhabited, IUCN observed minor signs of inhabitation and/or land use based on satellite imagery. In light of Decision 40 COM 8B.7, IUCN recalls its position on the relocation of communities from protected areas laid out in its 2016 World Heritage Evaluations Report (working document WHC-16/40.COM/INF.8B2), which is in line with international rights-based agreements. IUCN has not received concerns about any relocation practices.

4. RECOMMENDATION

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

The World Heritage Committee,

1. Having examined Documents WHC/19/44.COM/8B.ADD and WHC/19/44.COM/INF.8B2.ADD;

2. Recalling Decision 40 COM 8B.7;

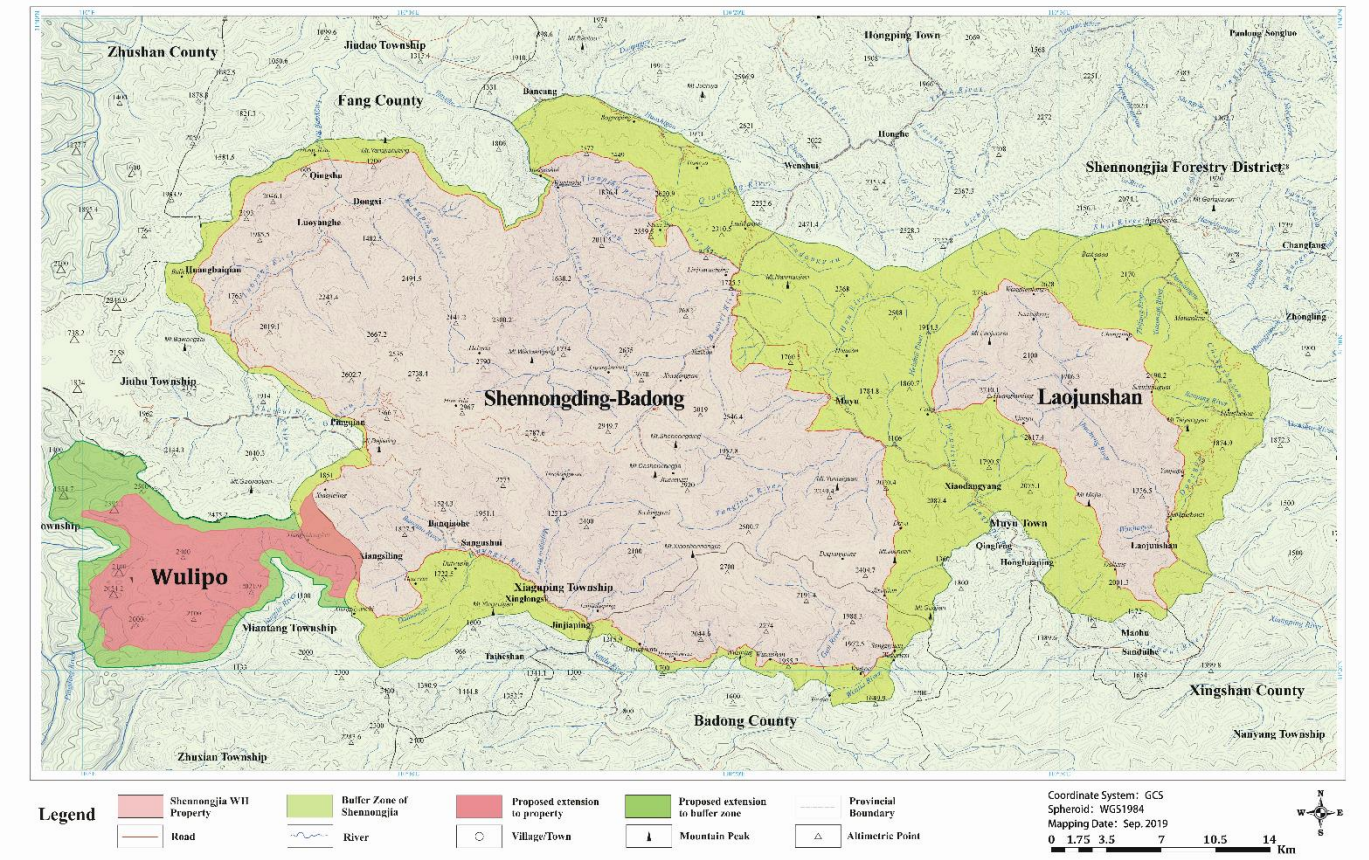
3. Approves the minor boundary modification request for **Hubei Shennongjia (China)**;

4. Encourages the State Party to continue enhancing connectivity conservation measures, so as to fully implement Decision 40 COM 8B.7, and including in particular the connection between the two components of the property.

5. Noting its request to the State Party on relocation of people from the property made in Decision 40 COM 8B.7, requests the State Party to also ensure in the modified property that any relocation activities are voluntary and fully respect international norms, and that further relocation activities should not be undertaken unless they are fully justified;

5. Requests the State Party to submit by **1 February 2022** the revised management plan for the property, including a confirmation of national park status for the property and on how potentially increased demands for visitation will be managed, including through the current Tourism Master Plan

Map 1: World Heritage property and proposed minor boundary modification



EUROPE / NORTH AMERICA

VOLCANOES OF KAMCHATKA

RUSSIAN FEDERATION

WORLD HERITAGE MINOR BOUNDARY MODIFICATION PROPOSAL – IUCN TECHNICAL EVALUATION

VOLCANOES OF KAMCHATKA (RUSSIAN FEDERATION) – ID N° 765ter

1. BACKGROUND INFORMATION

The Volcanoes of Kamchatka were inscribed on the World Heritage List in 1996 and extended in 2001. The World Heritage property consists of eight component parts , out of which two are designated as Strict Nature Reserve (Kronotsky), whilst the others are designated either as Wildlife Reserve or Regional Nature Park. The property has no buffer zone.

The World Heritage Committee has examined the state of conservation of the property on several occasions since 1997. Based on the recommendations of a 2007 World Heritage Centre/IUCN Reactive Monitoring mission, the Committee requested the State Party, in 2008, to *"precisely set the boundaries of the property within the management plan, by translating the boundaries identified at the time of inscription into geographical coordinates"* (Decision 32 COM 7B.23). In its latest decision, the Committee requested the State Party to submit the information on the boundaries of all component parts to the World Heritage Centre, in order to formally clarify them by submitting high-resolution maps and shapefiles (Decision 42 COM 7B.79).

In response to the Retrospective Inventory, the stated area in hectares of each component part of the inscribed property has been clarified by the State Party and noted by the Committee in 2011 (Decision 35 COM 8D).

In 2019, a further World Heritage Centre/IUCN Reactive Monitoring mission visited the property to evaluate the status of implementation of the 2007 mission recommendations and to assess the current conservation status of the property. This mission took place before the present minor boundary modification request was submitted, and thus did not evaluate the proposals that are now being made regarding the boundaries.

The relevant documentation is available at http://whc.unesco.org/en/list/1509/documents/.

2. SUMMARY OF PROPOSED BOUNDARY MODIFICATION

The minor boundary modification proposed by the State Party would consist of three types of changes to the property's boundaries:

Firstly, the modification addresses apparent discrepancies between the inscribed areas and records in the *Unified State Register of Immovable Properties* of the State Party. This applies to the Bystrinsky, Nalychevo, Klyuchevskoy, and Southern Kamchatka Nature Parks and would result in only minimal changes to the areas.

Secondly, the modification proposes the addition of "Gorely Volcano Caldera Nature Monument and the forest fund plot" (15,312.05 ha) into the Southern Kamchatka Nature Park component part, with the goal of enhancing connectivity between the two separated parts of the nature park (though not physically connecting both parts). The area exhibits attributes of modern volcanism and various types of altitude-dependent plant communities. The fauna is characterised by mountain tundra species and species adapted to stony, young volcanic substrates and sparse vegetation. The status of species found in this area is largely of Least Concern (LC) according to the IUCN Red List of Threatened Species.

Thirdly, the boundary modification would excise a section of 15,096.74 ha in the northern part of the Southern Kamchatka Nature Park to enable the implementation of an "*economically significant investment touristic project for the creation of a touristic-recreational zone within the framework of which mountain skiing, mountain-touristic and cruise tourism*". This area is marked by Vilyuchinsky Volcano, a conical stratovolcano, and is characterised by low-mountain small-leaved forests, birch, dwarf-tree and bush vegetation, with animal species ranging from Brown Bears (*Ursus arctos*) to Wolfs (*Canis lupus*) and Lynx (*Lynx lynx*), and riverine and littoral fauna, including various salmonid species and the Steller's Sea-eagle (*Haliaeetus pelagicus*), listed as vulnerable on the IUCN Red List of Threatened Species.

The boundaries of the Kronotsky Strict Nature Reserve and Southern Kamchatka Wildlife Reserve component parts would remain unchanged. Overall, the serial property's area would decrease by 1,471 ha to 3,994,298.35 ha.

3. IMPACT ON OUTSTANDING UNIVERSAL VALUE

IUCN notes that the modification to the Bystrinsky Regional Nature Park and the southern part of Southern Kamchatka Regional Nature Park are minimal. Largely following the current boundaries, this boundary change would be justified as a purely technical and cadastral correction, in line with the Committee's requests in Decisions 32 COM 7B.23 and 42 COM 7B.79 to precisely set and clarify the boundaries. However, IUCN notes that the State Party did not submit high-resolution maps and shapefiles as requested in Decision 42 COM 7B.79, and that the maps provided are not sufficient to verify these

changes. IUCN further notes that, as per the Committee decision, purely cadastral corrections can be notified to the World Heritage Centre, for verification with the Advisory Bodies.

Regarding the Nalychevo and Kluchevskoy component parts, IUCN notes that some sections of the revised boundaries are too large to be considered as cadastral corrections, and represent material changes in the areas included. Specifically the boundary modifications proposed for the south-eastern part of the Kluchevskoy component part and for the north-eastern boundary of the Nalychevo component part differ by several kilometres from the current boundaries. While these proposed modifications may potentially be acceptable, IUCN considers, as above, that more information would be needed on these excised areas, including more detailed explanations of the rationale for the proposed modifications and sufficiently detailed large-scale maps.

Regarding the proposed modification to excise an area from the Southern Kamchatka Regional Nature Park, the result would be that the northernmost section of the component part would be removed from the property. This section surrounds Vilyuchinskaya Bay and includes the full altitudinal range up to Vilyuchinsky Volcano. IUCN notes that the Statement of Outstanding Universal Value of the property specifically recognizes, under criterion (vii), the exceptional natural beauty of the property with its large symmetrical volcanoes and spectacular coastline, which is exemplified by attributes within the area proposed to be excluded. Thus whilst relatively small in the context of the overall size of the property, there would be a direct negative impact in reduction of OUV.

IUCN further notes that the area proposed for excision is for the purpose of the development of a significant tourism infrastructure project, which is clearly not in line with the relevant section of the *Operational Guidelines.* This Annex states that "*boundary modifications should serve better identification of World Heritage properties and enhance protection of their Outstanding Universal Value*" (*Operational Guidelines*, Annex 11).

In addition, with respect to paragraph 180 b) ii) of the *Operational Guidelines,* IUCN considers that tourism development within the area proposed for exclusion, and related knock-on effects, would be likely to result in further impacts on the OUV within the remaining property given its adjacent location. IUCN further notes that the envisaged development and the choice of its location does not seem to have been subject to a prior Strategic Environmental Assessment, and thus is not in line with the IUCN World Heritage Advice Note on Environmental Assessment.

IUCN thus considers that the exclusion is not acceptable as a minor boundary modification in line with paragraph 163 of the *Operational Guidelines*.

Regarding the inclusion of "Gorely Volcano Caldera Nature Monument and the forest fund plot" into the Southern Kamchatka Nature Park, IUCN notes that the area proposed for inclusion differs significantly from the area proposed for exclusion as it is not located on the coast, but in a considerably different landscape in the hinterland and, as noted above, thus contains a very different set of natural values. However, the State Party proposes this area as a "compensation plot" for the area proposed for excision. IUCN notes that OUV, confirmed through the inscription of the property, is not something that can be arbitrarily subject to excisions and compensation on an area basis. In principle, the concept of compensation plots for the planned loss of OUV is not acceptable.

The information provided in the proposal does not link the attributes of the proposed additional area to the OUV of the property, as set out in Justification for Inscription. IUCN nonetheless considers that the inclusion of this proposed area could contribute to the property's OUV, especially through enhancing connectivity between the existing components. However, while the addition of Gorely Volcano and the forest fund plot may support ecological connectivity towards the Southern part of Southern Kamchatka Nature Park, the northern part would still remain disconnected from the southern part, even though a full connection would be possible through an inclusion of the adjoining Oleny Dol State Wildlife Refuge into the property.

Overall, IUCN considers that the proposal requires a detailed review, including field evaluation, of the collective modifications proposed, noting, however that the proposed excision in the Southern Kamchatka Regional Nature Park contains attributes directly relevant to the property's OUV, and thus this area should not be proposed for removal from the property in any future proposal for boundary amendments.

4. RECOMMENDATION

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

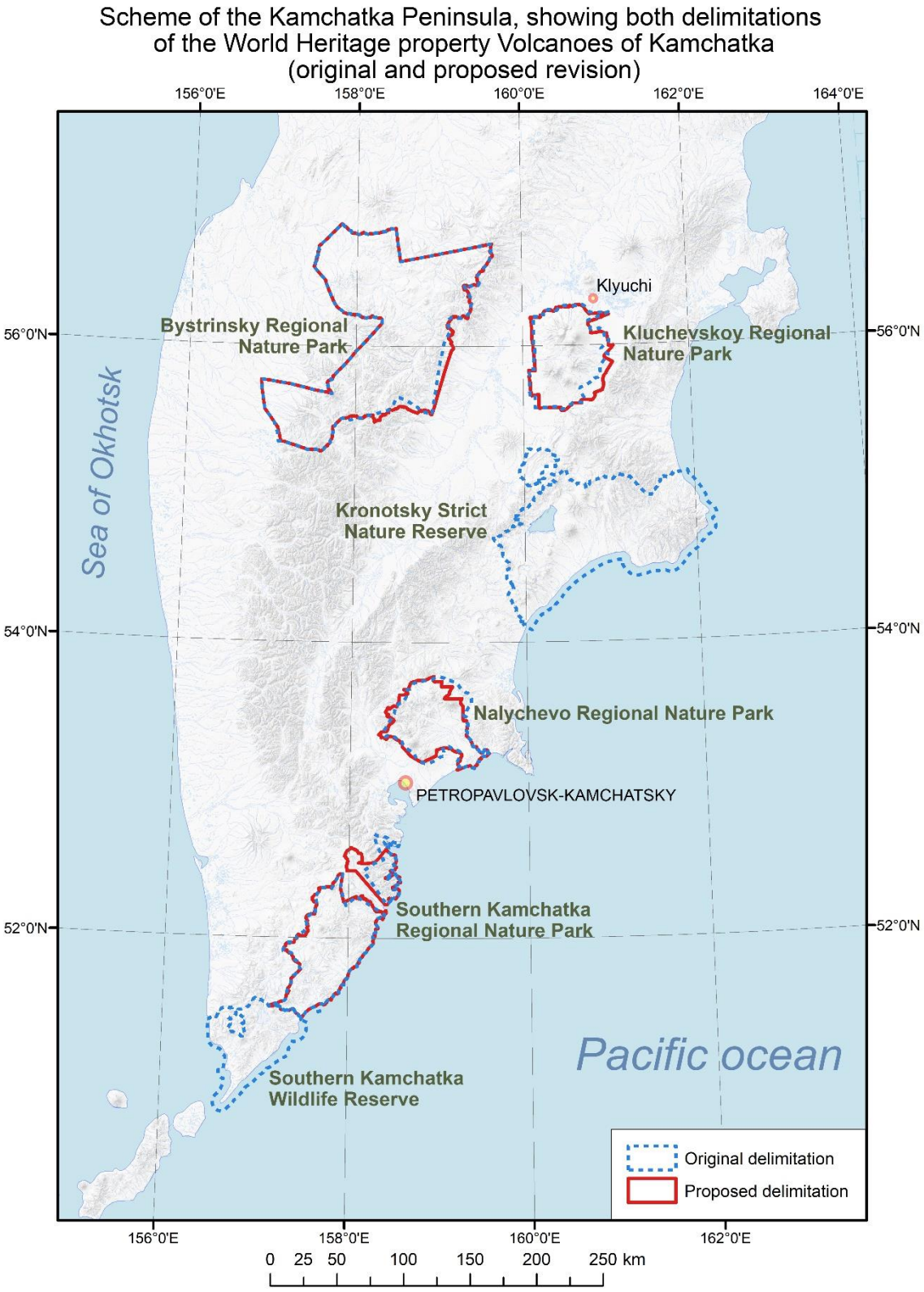
The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B.ADD and WHC/20/44.COM/INF.8B2.ADD;

2. Recalling Decisions 20 COM VIIIA, 25 COM XB, 32 COM 7B.23, 35 COM 8D and 42 COM 7B.79;

3. Decides not to approve the minor boundary modification request for **Volcanoes of Kamchatka (Russian Federation)**;

Map 1: World Heritage property and proposed minor boundary modification



B. MIXED PROPERTIES

B1. NEW NOMINATIONS OF MIXED PROPERTIES

AFRICA

HOLQA SOF UMAR: NATURAL AND CULTURAL HERITAGE (SOF UMAR: CAVES OF MYSTERY)

ETHIOPIA

Downstream entrance to Sof Umar cave © IUCN / Dr. Stephen Swabey

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

HOLQA SOF UMAR: NATURAL AND CULTURAL HERITAGE (SOF UMAR: CAVES OF MYSTERY) (ETHIOPIA) – ID N° 1516

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: Not to inscribe the property under natural criteria.

Key paragraphs of Operational Guidelines:
Paragraph 77: Nominated property does not meet World Heritage criteria.
Paragraph 78: Nominated property meets protection requirements, however, does not meet integrity and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: March 2019

b) Additional information officially requested from and provided by the State Parties: Following the IUCN World Heritage Panel a joint progress report was sent by IUCN and ICOMOS to the State Party on 20 December 2019. The letter advised on the status of the evaluation process and the outcomes of the IUCN Panel meeting. The IUCN Panel noted some fundamental difficulties with respect to the ability of the nomination to demonstrate that it meets the World Heritage criteria related to nature conservation values criteria (vii) and (viii), including a number of issues regarding the basis for the claim of Outstanding Universal Value and regarding the approach to Global Comparative Analysis. The Panel identified a lack of justification for criteria (vii) and (viii), including in relation with the claimed extent and age of the cave, and its relative significance globally as a natural phenomenon. The Panel also noted concerns regarding the integrity of natural features in terms of anthropogenic impacts, monitoring capacity and management of various threats posed to the nominated property. It noted that these fundamental concerns precluded the possibility to recommend inscription to the World Heritage List. The State Party submitted additional information on 14 February 2020 following the interim report.

c) Additional literature consulted: Various sources, including: Howard, P. C. and Bertzky, B. (2020). Natural World Heritage in Africa: Progress and prospects. BIOPAMA Programme, IUCN Regional Office for Eastern and Southern Africa (ESARO), Nairobi, Kenya and IUCN Regional Office for West and Central Africa (PACO), Ouagadougou, Burkina Faso; Catlin D., Largen M.J., Monod T. and Morton W.H. (1973) The caves of Ethiopia. Transactions of the Cave Research Group of Great Britain 15(3), 107-168; Dingwall, P.R., Weighell, T. & Badman, T. (2005). Geological World Heritage: A Global Framework. IUCN, Gland, Switzerland; IUCN and UNEP-WCMC (2011). African Natural Heritage: Possible priorities for the World Heritage List. Foldout colour brochure. IUCN, Gland, Switzerland and UNEP-WCMC, Cambridge, UK. Robson, G.E. (1967). The Caves of Sof Omar. The Geographical Journal 133(3), 344-349; Waltham, T. (2008). Great Caves of the World. Natural History Museum, London. Williams, P. (2008). World Heritage Caves and Karst. IUCN, Gland, Switzerland; Worthington, S. (2004). Sof Omar Cave, Ethiopia, in J. Gunn (ed.), *Encyclopedia of Caves and Karst*, Fitzroy Dearborn, Taylor & Francis Books Inc., London

d) Consultations: 15 desk reviews received. The mission met with a wide range of stakeholders including representatives of the Authority for Research and Conservation of Cultural Heritage (ARCCH), scientists and various local communities, including traditional custodians of the nominated property. Various culture and tourism offices, tour operators and guides, women's and youth associations were met as well as a wide range of sectoral authorities, including education, health, infrastructure, agriculture, environment, water and energy administration.

e) Field Visit: Stephen Swabey (IUCN) and Pascall Taruvinga (ICOMOS), 3 to 11 October 2019

f) Date of IUCN approval of this report: May 2020

2. SUMMARY OF NATURAL VALUES

Holqa Sof Umar: Natural and Cultural Heritage (Sof Umar: Caves of Mystery) is nominated under cultural criteria (iii), (v), (vi), and under natural criteria (vii) and (viii). ICOMOS will evaluate the nominated property in relation to cultural criteria. The mixed nominated property is situated 400 km southeast of Addis Ababa in the eastern reaches of the Weib River catchment. The Weib River rises in the Bale Mountains, crosses an extensive farmed middle catchment, and continues through the cave and drains southeastwardly to become a tributary of the Ganale Dorya River.

Dense *Commiphora-Kirkira* acacia woodland and bushland covers the Sof Umar dry valley where the nominated property is located. The nominated property covers a total of 793.02 ha with a buffer zone of 1307.35 ha. It consists of the Sof Umar cave and the landscape in its immediate surroundings, with a buffer zone extending to the village of Sof Umar and almost up to the ridge where the watershed to the next catchment is located.

The limestone cave of Sof Umar is more than 15 km in length, and is situated in a gorge of the Weib River,

where the original riverbed became a dry valley. The cave system includes the subterranean Weib River and a dry section that is the former riverbed of the Weib River. The cave is formed in Jurassic limestone, with largely horizontal bedding and extensive joint sets that have controlled the form of the cave as it developed. The cave system developed laterally along the horizontal bedding and through joint-sets to occupy its current lower-level course, forming many of the more than 50 entrances to the cave. The lower entrance to the cave is larger and bounded by high-level 'terrace' passages. Characteristic karst landforms in the landscape of the nominated property include a very large collapse doline and a limited extent of kamenitza (karst solute basins) and rillenkarren (karst solution flutes).

The cave fauna contains a substantial population of bats (primarily *Otomops martiensseni* – NT, *Cardiodermar cor* and *Rhinolophus blasii* – LC) and swifts, as well as Hyrax, but no exclusively cave-dwelling species according to the nomination dossier. Guano piles from these birds and mammals support a range of invertebrates. Dik-dik Antelopes (*Madoqua sp.* – LC / DD) and Vervet Monkeys (*Chlorocebus aethiops* – LC) are found within the proposed buffer zone.

The cultural aspects of the site documented in the nomination are closely integrated with the natural values as the natural features of the site form the backdrop for the cultural and spiritual practices. Specific landforms and features are named for their cultural function, and some of those landforms have been modified by their cultural function, such as through polishing of rocks in a Prayer Chamber located in the cave.

3. COMPARISONS WITH OTHER AREAS

The nomination dossier provides a brief global comparative analysis that pinpoints five World Heritage properties that are recognized for their caves in limestone formations. IUCN has considered this analysis with the benefit of an extensive review base, and in the framework of past consideration of karst systems on the World Heritage List, including the relevant thematic study.

The analysis in the nomination notes that it has many of the geomorphological and geological features in common with these properties; however, it does not undertake a systematic scoping of sites and provides no criterion-by-criterion assessment. It is stressed that whilst the Sof Umar Cave System was acknowledged by Waltham (2008) as one of the great caves of the world, it ranks only as the 306th longest cave system in the world with a length of 15.1 km.

Regarding criterion (vii), whilst the specification and analysis of attributes is limited, the nomination dossier highlights the limestone pinnacles in the Sof Umar Cave System and explains its beauty is exhibited by the coexistence of an active subterranean river system with an older inactive relict karst system, arguably providing a unique setting. However, IUCN considers that such coexistence is neither unique globally nor of an exceptional aesthetic quality at the global level. The river passages of the Sof Umar Cave System do not appear to be more beautiful or visually more spectacular than those found in many other large river caves. Many limestone karst sites on the World Heritage List are considered much more beautifully decorated with speleothems and have larger and more spectacular river passages (e.g. Caves of Aggtelek and Slovak Karst, Puerto-Princesa Subterranean River, Gunung Mulu, Mammoth Cave, Skocjan Cave etc). All of these are globally recognized and considered more important scientifically and visually than the Sof Umar Cave Cave System. IUCN considers that, neither the scale nor the aesthetic values of the nominated property, are at the highest level of significance required to justify this criterion, not approaching, for instance the aesthetic values seen in sites such as Lechuguilla Cave in the Carlsbad Caverns World Heritage Site, or, at a smaller scale, the unique decorated lava tubes of Jeju Island in the Republic of Korea.

Regarding criterion (viii), IUCN considers that this nominated property does not appear to be of international significance. The surface landforms in the limestone above and around the cave are interesting but typical rather than unusual or especially significant or spectacular. IUCN notes a number of factual errors in the nomination dossier, which claims that the nominated property would contain "one of the most (…) extensive cave systems in the world". This does not appear to be the case noting that the nominated property ranks only 306th globally. While the world's longest cave measures 668 km, within the Mammoth Cave World Heritage Site, the Holqa Sof Umar Cave System reaches only 15.1 km in length. In general, the global comparative analysis falls short in underpinning its conclusions with evidence. Other caves presented for comparison (e.g. Mammoth Cave and Škocjan Caves) significantly surpass the nominated property in terms of geological features, in relation to both criterion (viii) and also criterion (vii).

Notwithstanding the chosen criteria for this nomination, IUCN notes that the significance of ecological features has not been adequately assessed in the dossier. While the nomination dossier states that no exclusively cave-dwelling species can be found, Catlin (1973) published a detailed description of the cave system and reported on the fauna of Holqa Sof Umar which included animals with relationships with marine forms and terrestrial true cave-dwelling fauna. Whilst it is not evident that these values would give potential for consideration under criteria (ix) and/or (x), IUCN contends they nevertheless should be accorded greater significance in the conservation of the nominated property (see section 5.1).

In conclusion, IUCN considers that the nominated property has conservation significance at both a national and at a regional scale; however, it clearly does not present attributes of significance at the level of Outstanding Universal Value, that would enable its

consideration as a World Heritage property under natural criteria (vii) and (viii).

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

The nominated property is in public ownership and administered by the Oromia National Region State Culture and Tourism Bureau as part of the federal system in Ethiopia, which grants authority over cultural and natural heritage to region states. The custodian of the nominated property is the local community who hold the authority as to who may enter the cave. The nominated property's role as sacred place and cultural and worship site plays an important role in its protection regime.

The protection of the State Party's natural and cultural heritage is enshrined in Ethiopia's Constitution, which is similarly mirrored in the Constitution of the Oromia National Regional State, where the nominated property is located. Building on this, a state-wide cultural policy was developed, which also includes the preservation of natural heritage. In addition, the nominated property is subject to the Proclamation for Research and Conservation of Cultural Heritage and the Law on the Protection and Conservation of the Property Gazette 158/2013 of Oromia National Regional State.

Based on desk reviews and the field evaluation, IUCN considers that the legal protection applicable to the nominated property is adequate in its scope and includes a clear definition of responsibilities. However, evaluators also noted several threats lacking remediation measures (see also section 4.5), resulting in significant impacts on the cave system. Whilst the legal protection for natural and cultural heritage appears to be in place, IUCN concludes that the current approach to enforcing this legislation does not appear to be addressing negative impacts on the nominated property.

IUCN considers that the protection status of the nominated property meets the requirements of the *Operational Guidelines*.

4.2 Boundaries

The boundaries of the nominated property comprise the immediate elements and processes associated with the Holqa Sof Umar Cave System. However, there are concerns regarding the adequacy of the boundaries and its buffer zone required in order to protect its attributes adequately.

The documented threats from outside the cave system (see section 4.5) cast doubt on the adequacy and effectiveness of the boundaries as configured. IUCN notes in this respect that no zonation scheme is proposed within or beyond the nominated property and the buffer zone. Based on observations by the field evaluation, IUCN considers that the boundaries of the nominated property currently are very porous to land-use activities that impact the cave system, such as tree cutting and waste disposal.

Regarding the boundaries of the buffer zone, IUCN notes that they do not align with the configuration of the catchment of the cave, particularly between the villages of Duksi and Sof Umar, and this does not enable the protection of the watercourse. The buffer zone boundaries appear to be somewhat arbitrary as the rationale for the size and extent of the buffer zone is not evident.

IUCN considers that the boundaries of the nominated property do not meet the requirements of the *Operational Guidelines.*

4.3 Management

The Management Plan for the nominated property has been submitted at the same time the dossier and identifies the structural arrangements, and how authority cascades according to Ethiopian law. It provides a wide range of actions and responsibilities that are foreseen for various agencies in government and for the local community.

Based on desk reviews and the field evaluation, IUCN notes that there is a lack of clarity on the extent to which these actions and responsibilities are agreed by those agencies, how they are budgeted, and how they are planned to be implemented. A central part of the management plan is a SWOT analysis on conservation, tourism, research, and community benefits among other aspects, based on which an Action Plan with very broad activities has been developed. However, the plan lacks precise strategic approaches to the conservation of the nominated property. In particular, it does not clearly define the management objectives related to the sustainable conservation of the values described in the dossier and consequently, no remediation is proposed to manage negative impacts of projects. This is particularly important in terms of the nominated property's connectivity to the wider landscape, since the Weib River, passing through the cave, has a large upgradient catchment, which provides substantial sediment that affects the cave.

A range of monitoring activities is identified, however many of the most significant environmental issues affecting the nominated property are omitted from consideration (see also section 4.5 below). The monitoring proposed does not include sedimentological, hydrological, ecological or climatological indicators which would be needed to determine management system performance against baselines on environmental performance for which data is lacking.

The current scale of staffing at the nominated property appears limited, notwithstanding the fact that local representatives from Sof Umar village are present for most of the time. Local communities are reliant on government agencies for technical input and management approaches, but technical skills specific

to karst sites do not appear to be sufficiently deployed at present.

IUCN considers that the management of the nominated property does not meet the requirements of the *Operational Guidelines.*

4.4 Community

An estimated population of 700 people live near the cave entrance within the area that is nominated. No inhabitants are reported to live in the buffer zone of the nominated property.

The governance of the nominated property actively seeks to engage local residents of the local village of Sof Umar. The proposed 12-seat Management Committee for the nominated property includes three seats for village members of Sof Umar as the only non-administrative members in the Management Committee. However, IUCN notes that local residents of the Duksi village stated that they have not yet been involved with the proposed Management Committee, nor formally in the nomination, and have also expressed their concern about a lack of inclusion in the management of the nominated property and future restrictions of access to the buffer zone.

4.5 Threats

The nomination dossier identifies a number of threats affecting the nominated property and some approaches to address them. Further to the field evaluation, IUCN notes that current *ex-situ* threats to the nominated property include continued disposal of litter and human waste affecting aesthetic values and likely the ecosystem and hydrology; sedimentation associated with the road berm crossing the valley; burning of vegetation for charcoal within the nominated property; and inadequate surface drainage management. IUCN also noted that the level of agricultural use, resulting in reinforced erosion, and its impacts on ecology and hydrology may also need further assessment.

The inadequate management of surface drainage is interrelated with the other threats. Grazing and human use lead to relatively sparse understorey vegetation reinforcing slope instability, especially during the rainy season. One of the consequences is deep gullying on the hillslopes, particularly on the south of the gorge resulting in significant sedimentation in the dry valley. Hillslope erosion is exacerbated by stormwater channelled by a road crossing the nominated property.

Further activities that are detrimental to the protection of the Holqa Sof Umar Cave System include *in-situ* threats ranging from graffiti in the cave and tracking impacts in the cave sediments to littering to sheds for generators and related extensive electrical cabling.

In summary, IUCN notes that the cave and surrounding areas are subject to significant impacts from human activities. Overall, the anthropogenic pressures and infrastructure appear to have impacted, and be likely to continue to impact significantly the integrity of the nominated property.

In conclusion, IUCN considers that, whilst legal protection of the nominated property is considered to meet the *Operational Guidelines,* integrity and management do not meet requirements.

5. ADDITIONAL COMMENTS

5.1 Biodiversity values and alternatives to World Heritage nomination

Based on desk reviews and the field evaluation, IUCN considers that there is a possibility that an in-depth assessment of the ecological conditions of the cave might reveal thus far undocumented values that may have regional and/or international significance for biodiversity conservation. Due to the isolation of the cave by significant distance from other major cave systems, evolution may have produced species unique to this cave. In addition, the linkages between cave species and species outside the cave in the nominated property and its buffer zone may be of interest if facultative cave-dwelling species occur there. Finally, the surrounding above-ground area of the nominated property may contain species assemblages of ecological interest, since Sof Umar lies at the overlap between the south-eastern margins of the temperate, wet climate of the central Ethiopian Highlands and the hot and dry Somalian climate. IUCN encourages the State Party to investigate these aspects to determine whether other forms of conservation recognition are warranted and could provide additional protection and promotion opportunities.

Regarding the geoheritage values of the nominated property, IUCN also recommends the State Party to explore the nominated property's potential suitability for a designation as UNESCO Global Geopark, in consultation with the Secretariat in the Science Sector of UNESCO.

6. APPLICATION OF CRITERIA

***Holqa* Sof Umar: Natural and Cultural Heritage (Sof Umar: Caves of Mystery)** has been nominated under natural criteria (vii) and (viii).

Criterion (vii): Superlative natural phenomena or natural beauty or aesthetic importance
The cave chambers and limestone pinnacles of the Holqa Sof Umar Cave System are visually appealing, and important at national and regional levels. However, they clearly do not rank at the level of international significance in terms of either scale or aesthetic significance in comparison to sites on the World Heritage List, and many other cave systems globally. Numerous karst sites are already inscribed on the World Heritage List that have more spectacular river passages and outstanding speleothems. Furthermore, the aesthetic value of the nominated property has been compromised by several impacts

such as graffiti and extensive electrical cabling in the cave and inadequate waste management.

IUCN considers that the nominated property does not meet this criterion.

Criterion (viii): Earth's history and geological features

The nomination dossier notes that the nominated property shares many of the geomorphological as well as geological features of other World Heritage sites. Whilst the geological processes described in the nomination dossier are notable, and may be significant on a regional pan-African scale for their geological, geomorphological and hydrological features, there is no evidence to substantiate that they are exceptional at the global level. Similar processes and karst landscapes are found in cave systems all over the world in the same cave ecosystems. Other cave sites on the World Heritage List significantly surpass the nominated property in terms of geological features.

IUCN considers that the nominated property does not meet this criterion.

7. RECOMMENDATIONS

IUCN recommends that the World Heritage Committee adopts the following draft decision, noting that this will be harmonised as appropriate with the recommendations of ICOMOS regarding their evaluation of this mixed site nomination under cultural criteria (iii), (v), (vi) and included in the working document WHC/17/41.COM/8B.

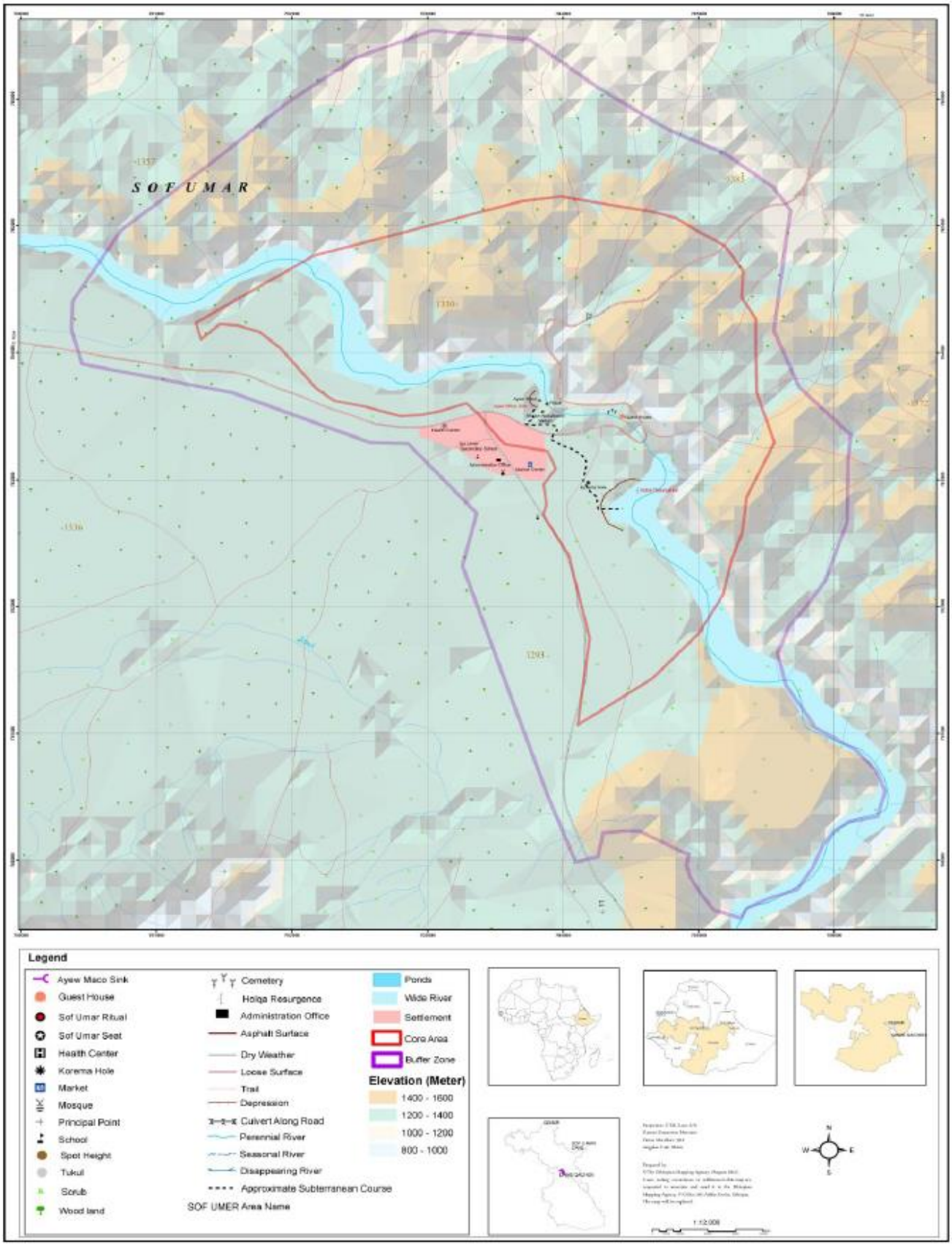
The World Heritage Committee,

1. Having examined Documents WHC/20/44.COM/8B and WHC/20/44.COM/INF.8B2,

2. Decides not to inscribe ***Holqa*** **Sof Umar: Natural and Cultural Heritage (Sof Umar: Caves of Mystery) (Ethiopia)** on the World Heritage List;

3. Encourages the State Party to conduct further research on the nominated property's ecological and biodiversity values, with a view to considering alternative means to appropriately protect and promote its biological importance at regional or international level.

Map 1: Location of the nominated property and buffer zone



C. CULTURAL PROPERTIES

C1. NEW NOMINATIONS OF CULTURAL PROPERTIES

EUROPE / NORTH AMERICA

PASEO DEL PRADO AND BUEN RETIRO, A LANDSCAPE OF ARTS AND SCIENCES

SPAIN

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

PASEO DEL PRADO AND BUEN RETIRO, A LANDSCAPE OF ARTS AND SCIENCES (SPAIN)

IUCN has considered this cultural landscape nomination based on a desk review of the nomination dossier and the comments of one (1) external reviewer.

The area, nominated under criteria (ii), (iv) and (vi) covers 199.59 ha. It does not include a buffer zone. IUCN observes that much of the natural values of the landscape have been extensively transformed and little remains of the original vegetation across the nominated property.

Whilst the nominated property does not overlap with any protected area of recognised international importance, IUCN supports the premise that contact with nature in urban areas, nature, and parks fosters social connections, which are vital to community cohesion and significantly contributes to social well-being.

Through a rapid analysis, IUCN notes that the Royal Botanic Garden (RBG), one of the two main areas of the nominated property with natural elements, includes a collection of over 7,000 plant species. Among its *ex-situ* collection, at least one species, *Zelkova carpinifolia,* is classified as internationally Vulnerable (VU) (with a decreasing trend) and another, *Gyrocaryum oppositifolium,* as Critically Endangered (CR). The importance of the RBG from a conservation and capacity-building stance is notable, not only to exhibit plants, but also to teach botany, support field expeditions for new plant species discovery and classification, and to develop botanical research, focused mainly on Spanish and American flora.

IUCN also observes that the Tree Management Plan of the Buen Retiro promotes the improvement of fauna biodiversity within the nominated property. The area is also managed under the Green Infrastructure and Biodiversity Plan of Madrid, which considers the need for an increasing degree of connection between the green areas located inside and outside the city, with important climate change implications as well as water retention and biological improvement of the soil. IUCN recommends ICOMOS to discuss with the State Party the possibility of strengthening the connectivity of the nominated property with other nearby natural areas (urban parks and natural areas) to allow for species movements as well as increase the areas' capacity to provide regulating services.

LATIN AMERICA / CARIBBEAN

SÍTIO ROBERTO BURLE MARX

BRAZIL

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

SÍTIO ROBERTO BURLE MARX (BRAZIL)

IUCN has considered this cultural landscape nomination based on a desk review of the nomination dossier and the comments of four (4) external reviewers.

The total area of the nominated property is 40.53 ha with a proposed buffer zone of 575 ha. The property is nominated under criteria (ii) and (iv). Sítio Roberto Burle Marx (SRBM), "is a unique cultural landscape created intentionally by man, which combines an artificial ecosystem and a cultural system in harmonious dialogue with its surroundings". According to the nomination dossier, the phyto-ecological laboratory character of the botanical collection of the SRBM combined with the accumulated knowledge and information supports the conservation of Brazilian native species.

IUCN notes that the natural values of the landscape have been altered in approximately one-third of the nominated property. However, natural values in SRBM remain strong in areas above 100 m asl, which boast native Atlantic Forest biome and associated species, many being endemic or threatened. IUCN emphasizes that the Atlantic Forest and its species are of international importance. The fauna and flora present in the nominated property are similar to those found in the State Park of Pedra Branca (PEPB), which corresponds to an IUCN category II protected area and which is part of the UNESCO Atlantic Forest Biosphere Reserve.

In addition to parts of the nominated property that have remained in their natural state (native forests and mangroves), IUCN notes the ex-situ component (garden and botanical collection) of tropical plants whose distribution and placement forms an integral part of the nomination. Overall, SRBM houses over 3,500 plant species, out of which 71 species are endangered nationally or internationally (e.g., *Alcantarea geniculate* – EN and endemic). Therefore, SRBM functions as an important genetic bank for threatened tropical and subtropical flora.

IUCN notes that the Biological Reserve of Guaratiba (RBG) and the PEPB support the protection of SRBM. While the RBG is adjacent to the nominated property, PEPB partially overlaps with the nominated property, with the remaining part overlapping with the buffer zone of the PEPB and the Biological Reserve of Guaratiba (RBG). The SRBM is also located nearby the Municipal Natural Park of Grumari.

The PEPB's Management Plan states that activities in the buffer zone (and thus partly overlapping with SRBM) are only permitted provided they do not damage the nominated property. Furthermore, IUCN notes that the PEPB's Management Plan provides for the establishment of an agreement between the Environment State Institute INEA and the municipal government to support monitoring within the PEPB buffer zone and to specify preservation criteria for the PEPB and its buffer zone. Indicators on the conservation status of native flora above 100 m asl within the nominated property have been included (table 24 of the nomination dossier). Furthermore, urban zoning laws limit urban expansion in the vicinity of the nominated property. An additional level of protection at the national level is constituted by the Urban and Sustainable Development Master Plan of the Municipality of Rio de Janeiro, which declares the nominated area as a site of outstanding environmental and landscape interest for the city.

Finally, IUCN notes that economic benefits from the SRBM are derived from the ornamental use of tropical species, benefits which are also shared with local farmers. In this vein, a new governance structure is proposed with higher participation of the local community in the accessibility and management of SRBM. IUCN welcomes this and recommends ICOMOS to consider with the State Party the prioritisation and timeline for the establishment of this new structure.

LATIN AMERICA / CARIBBEAN

CHANKILLO SOLAR OBSERVATORY AND CEREMONIAL CENTER

PERU

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

CHANKILLO SOLAR OBSERVATORY AND CEREMONIAL CENTER (PERU)

IUCN provides the following comments to ICOMOS based on a review of the nomination dossier by the IUCN World Heritage Panel and one (1) external desk reviewer.

As stated in the nomination dossier, in this cultural landscape, the "astronomical observations at Chankillo are still possible today because the valley maintains its pristine conditions. Its exceptional features preserve ancient ecosystems such as fog-oases and carob (*Prosopis sp.*) forests that are of special importance in view of present-day climate change, and also help preserve the prehistoric site. Thus, the shape and physiognomy of the natural landscape facilitate the astronomical function of Chankillo, today, just as they did more than two millennia ago".

The property is nominated under criteria (i) and (v), and covers a total of 48,470 ha (4,480 ha property / 43,990 ha buffer zone). It overlaps with the territory of one municipal protected area (Cerro Mucho Malo) , which includes very fragile ecosystems (fog-oases, desert, and dry forest ecosystems). Law 29763 and its regulation protects the dry forest. Although the nomination dossier states the enactment of city ordinances recognize the ecological importance, monitoring and awareness actions for their conservation of the surrounding natural landscape, monitor changes of fog-oases (lomas) and dry forests cover, and all the natural elements associated, IUCN considers there is a need to better understand tourism impacts on ecosystems and their management by developing additional indicators. Even though the area does not overlap with any globally important protected areas or Key Biodiversity Areas (KBA), the conservation of biodiversity elements (including unique species assemblages of *myxomycetes*) is important as an integral element of the cultural landscape.

The participation of the local population in governance and decision making regarding the conservation of the natural landscape appears limited. To increase awareness, connection to the natural and cultural landscape, and sharing of benefits and responsibilities of local inhabitants in the effective management and conservation of the nominated property, it is essential to consider approaches that may increase their meaningful involvement in the current coordination body. Also, whilst expertise on cultural techniques and management exists for the site, it seems essential to include expertise regarding the nominated property's natural elements. These are matters that ICOMOS should consider in more detail with the State Party.

According to the nomination dossier, the main risks to this landscape are from the expansion of cultivated areas; mining industry; human settlement expansion; infrastructure developments that generate impacts in the landscape and dry forests (animal herding within and cutting trees), and the "legitimate expectation of the local population for tourist development in the area". IUCN welcomes the specific management activity included in the nominated property with regards to controlling visitation to the dry forest aimed at reducing the impact on the associated plant and wildlife communities.

IUCN notes the ongoing illegal and mining claims located within the nominated property (e.g., quarry for construction materials in the lower slopes of Cerro Mucho Malo and the adjacent mining claims in the buffer zone including the polymetallic illegal mine). Consistent with the World Heritage Committee's clear position on the incompatibility of mining and World Heritage status, IUCN recommends this matter should be specifically addressed by ICOMOS in its evaluation.

WHC/21/44.COM/INF.8B2

IUCN World Heritage Evaluations 2021

IUCN Evaluations of nominations of natural and mixed properties to the World Heritage List

IUCN REPORT FOR THE WORLD HERITAGE COMMITTEE, EXTENDED 44TH SESSION, 16-31 JULY 2021, FUZHOU (CHINA) / ONLINE

United Nations Educational, Scientific and Cultural Organization · World Heritage Convention

Cover photo: Elephants at Langoué Baï, Ivindo National Park, Gabon.

IUCN Evaluations of Nominations of Natural and Mixed Properties to the World Heritage List

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State Party	Name of the property (ID number)	Note	OUTSTANDING UNIVERSAL VALUE											Further mission required	IUCN Recommendation
			Meets one or more natural criteria				Meets conditions of integrity				Meets protection and management requirements				
			Criterion (vii)	Criterion (viii)	Criterion (ix)	Criterion (x)	Integrity	Boundaries	Threats addressed	Justification of serial approach	Protection status	Management	Buffer zone / Protection in surrounding		
Paragraphs of the Operational Guidelines for the Implementation of the World Heritage Convention			77	77	77	77	78, 87-95	99-102	78, 98	137	78, 132.4	78, 108-118, 132.4, 135	103-107		
Gabon	Ivindo National Park (1653)		no	–	yes	yes	yes	yes	part	–	part	part	part	no	R

KEYS

yes	met
part	partially met
no	not met
–	not applicable
I	inscribe / approve
N	non inscribe / not approve
R	refer
D	defer
cpts.	nominated component parts

ALPHABETICAL INDEX

IUCN FIELD EVALUATORS

Site	Name
Ivindo National Park	Wendy Strahm

It should be noted that the IUCN field evaluators are part of a broader evaluation approach detailed in the introduction of this report.

THE IUCN RED LIST OF THREATENED SPECIES

Throughout the report we have indicated the conservation status of each species as recorded in the *IUCN Red List of Threatened Species* at the time of the evaluation, where available; for more information please visit http://www.iucnredlist.org.

Keys to abbreviations:
CR: Critically Endangered
EN: Endangered
VU: Vulnerable
NT: Near threatened
LC: Least Concern
NE: Not Evaluated

THE WORLD HERITAGE CONVENTION
IUCN TECHNICAL EVALUATION REPORT OF WORLD HERITAGE NOMINATIONS
MAY 2021

1. INTRODUCTION

This technical evaluation report of natural and mixed properties nominated for inclusion on the World Heritage List has been conducted by the World Heritage Programme of IUCN (International Union for Conservation of Nature). The World Heritage Programme co-ordinates IUCN's input to the World Heritage Convention in close cooperation with the IUCN Global Protected Areas Programme (GPAP) and other units of IUCN both at headquarters and in the regions. It also works particularly closely with IUCN's World Commission on Protected Areas (WCPA), the world's leading expert network of protected area managers and specialists, with the IUCN Species Survival Commission (SSC) and other IUCN Commissions, as well as the many members and partners of IUCN.

IUCN's evaluations are conducted according to the *Operational Guidelines for the Implementation of the World Heritage Convention* that the World Heritage Committee has agreed, and which are the essential framework for the application of the evaluation process. This framework was updated and revised in 2015, and a revised process documented in Annex 6 of the *Operational Guidelines*, following discussion by the World Heritage Committee. In carrying out its function under the World Heritage Convention, IUCN has been guided by four principles:

(i) ensuring the highest standards of quality control, institutional memory and consistency in relation to technical evaluation, monitoring and other associated activities;

(ii) increasing the use of specialist networks of IUCN, especially WCPA, but also other relevant IUCN Commissions and specialist partner networks;

(iii) working in support of the UNESCO World Heritage Centre and States Parties to examine how IUCN can creatively and effectively support the World Heritage Convention and individual properties as "flagships" for conservation; and

(iv) increasing the level of effective partnership between IUCN and the World Heritage Centre, ICOMOS and ICCROM.

Members of the expert network of WCPA carry out the majority of technical evaluation missions, supported by other specialists where appropriate. The WCPA network now totals almost 3000 members, protected area managers and specialists from over 140 countries. In addition, the World Heritage Programme calls on relevant experts from IUCN's other five Commissions (Species Survival, Environmental Law, Education and Communication, Ecosystem Management, and Environmental, Economic and Social Policy); from international earth science unions, non-governmental organizations and scientific contacts in universities and other international agencies. This highlights the considerable "added value" from investing in the use of the extensive networks of IUCN and partner institutions.

These networks allow for the increasing involvement of regional natural heritage experts and broaden the capacity of IUCN with regard to its work under the World Heritage Convention. Reports from field missions and comments from a large number of external reviewers are comprehensively examined by the IUCN World Heritage Panel, as key inputs to each evaluation. The IUCN World Heritage Programme prepares the final technical evaluation reports, which are presented in this document, and represent the corporate position of IUCN on World Heritage evaluations. IUCN has also placed emphasis on providing input and support to ICOMOS in relation to those cultural landscapes which have important natural values.

IUCN has continued to extend its cooperation with ICOMOS, including coordination in relation to the evaluation of mixed sites and cultural landscapes. IUCN and ICOMOS have also enhanced the coordination of their panel processes as requested by the World Heritage Committee. This cooperation is regularly reported at the sessions of the World Heritage Committee under Item 9B, where IUCN and ICOMOS exchange and coordinate their advice to the Committee, as also noted in the relevant specific reports.

IUCN has endeavoured wherever possible to work in the spirit of the Upstream Process, as will be debated in the relevant items on the Committee's agenda.

2. EVALUATION PROCESS

In carrying out the technical evaluation of nominations, IUCN is guided by the *Operational Guidelines*, specifically Annex 6, which spells out the evaluation process. The evaluation process is carried out over the period of one year, from the receipt of nominations at IUCN in March and the submission of the IUCN evaluation report to the World Heritage Centre in April / May of the following year. The process involves the following steps:

1. **External Review.** The nomination is sent to independent experts knowledgeable about the nominated property or its natural values, including members of WCPA, other IUCN specialist Commissions and scientific networks or NGOs working in the region. IUCN received over 50 external reviews in relation to the properties examined in 2020 / 2021.

2. **Field Mission.** Missions involving one, or wherever possible two or more IUCN experts, evaluate the nominated property on the ground and discuss the nomination with the relevant national and local authorities, local communities, NGOs and other stakeholders. IUCN endeavours, where possible, to ensure mission experts have knowledge and experience in the relevant region. Missions usually take place between July and October. In the case of mixed properties and certain cultural landscapes, missions are jointly implemented with ICOMOS.

3. **IUCN World Heritage Panel Review.** The Panel intensively reviews the nomination dossiers, field mission reports, comments from external reviewers and other relevant reference material, and provides its technical advice to IUCN on recommendations for each nomination. A final report is prepared and forwarded to the World Heritage Centre in April / May for distribution to the members of the World Heritage Committee.

4. **Comparative Analysis**. IUCN commissions UN Environment WCMC to carry out a global comparative analysis for all properties nominated under the biodiversity criteria (ix) and (x) to a standard and publicly available IUCN / WCMC methodology. Following inscription, datasheets are compiled with WCMC.

5. **Communities.** IUCN has enhanced its evaluation processes through the implementation of a series of measures to evaluate stakeholder and rights holder engagement during the nomination process (see below for further details).

6. **Final Recommendations.** IUCN presents, with the support of images and maps, the results and recommendations of its evaluation process to the World Heritage Committee at its annual session in June or July, and responds to any questions. The World Heritage Committee makes the final decision on whether or not to inscribe the property on the World Heritage List.

It should be noted that IUCN has increasingly sought, over many years, to develop and maintain a dialogue with the State Party throughout the evaluation process to allow the State Party every opportunity to supply all the necessary information and to clarify any questions or issues that may arise. IUCN is available to respond to questions at any time, however, there are three occasions on which IUCN may formally request further information from the State Party. These are:

- **Before the field mission.** IUCN sends the State Party, usually directly to the person organizing the mission in the host country, a briefing on the mission, in many cases raising specific questions and issues that should be discussed during the mission. This allows the State Party to prepare properly in advance;

- **Directly after the field mission.** Based on discussions during the field mission, IUCN may send an official letter requesting supplementary information before the IUCN World Heritage Panel meets in December, to ensure that the Panel has all the information necessary to make a recommendation on the nomination; and

- **After the first meeting of the IUCN World Heritage Panel (December).** IUCN continues its practice of ongoing communication with the nominating State/s Party/ies following its Panel meeting. In line with Annex 6 of the *Operational Guidelines,* this communication comprises an interim report to the Parties on the status of the evaluation, sent by the end of January. If the Panel finds that some questions are still unanswered, or further issues need to be clarified, this letter may request supplementary information by a specific deadline. That deadline must be adhered to strictly in order to allow IUCN to complete its evaluation. In view of the importance of the requests for supplementary information, IUCN seeks to complete these letters at least one month before the requested deadline of 31st January; however, in the present cycle, the last letter was sent on 29 January 2021, due to the disruptions caused by Covid-19. It should be noted that in a number of cases, the Panel may not have additional questions, but nevertheless dialogue is invited in all cases.

  It is expected that supplementary information will be in response to specific questions or issues and should not include completely revised nominations or substantial amounts of new information. It should be emphasized that whilst exchanges between evaluators and the States Parties during the mission may provide valuable feedback, they do not substitute for the formal requests for supplementary information outlined above. IUCN has continued to promote additional dialogue with States Parties on the conclusion of its panel process, to allow for discussion of issues that have been identified and to allow more time to prepare discussions at the World Heritage Committee. This has involved face to face meetings in Paris, and in IUCN's offices in Switzerland, and conference calls via Skype or dial-in conferences.

In the technical evaluation of nominated properties, global biogeographic classification systems, such as Udvardy's biogeographic provinces, and the Terrestrial Ecoregion of the World (similarly, freshwater and marine ecoregions of the world in respective environments), are used to identify and assess comparable properties at the global level. These

methods make comparisons of natural properties more objective and provide a practical means of assessing similarity and contrasts at the global level. At the same time, World Heritage properties are expected to contain special features, habitats and faunistic or floristic peculiarities that can also be compared on a broader biome basis. It is stressed that these systems are used as a basis for comparison only and do not imply that World Heritage properties are to be selected based on these systems alone. In addition, global conservation priority-setting schemes such as Key Biodiversity Areas (KBAs) (www.keybiodiversityareas.org), including Important Bird Areas, Alliance for Zero Extinction sites, and systems such as WWF's Global 200 Priority Ecoregions, Conservation International's Biodiversity Hotspots and High Biodiversity Wilderness Areas, Birdlife International's Endemic Bird Areas, and IUCN/WWF Centres of Plant Diversity, provide useful guidance. IUCN in partnership with UN Environment WCMC continues to explore the use of new comparative analyses. The decisive principle is that World Heritage properties are only exceptional areas of Outstanding Universal Value.

The evaluation process is also aided by the publication of a series of reference volumes and thematic studies. In early 2012, a resource manual on the preparation of World Heritage nominations was published under joint lead authorship of IUCN and ICOMOS, and has provided further details on best practices, including the key resources that are available to support nominations. IUCN's range of thematic studies and key references that advise priorities on the World Heritage List are available at the following web address: https://www.iucn.org/theme/world-heritage/resources.

IUCN members adopted a specific resolution on these matters at the IUCN World Conservation Congress in 2012, which remains current, and this resolution *(WCC-2012-Res-047-EN Implementation of the United Nations Declaration on the Rights of Indigenous Peoples in the context of the UNESCO World Heritage Convention)* is available at the following address: https://portals.iucn.org/congress/assembly/motions.
IUCN has continued to implement a range of improved practices within its evaluation process in response to these reviews and reflections, which are focused on the inclusion of a specific section headed "Communities" within each evaluation report, to ensure transparency and consistency of IUCN's advice to the World Heritage Committee on this important issue. These measures include a standard screening form for all evaluation missions, additional consultation with networks specialised in this field, and an expert advisor supporting the IUCN World Heritage Panel.

In 2013, IUCN updated its format for field evaluation reports to include specific questions on communities and to clarify a range of questions and expectations on feedback from evaluators to ensure consistency of reports from field missions. This material is all publicly available at the following web address: https://www.iucn.org/theme/world-heritage/our-work/advisor-world-heritage/nominations.

IUCN has also been actively supporting processes under the mandate of the Ad Hoc Working Group (Decision 43 COM 12) which seek to reform the nomination processes within the frame of the World Heritage Convention and *Operational Guidelines*. IUCN welcomes this constructive dialogue to evolve the working methods of the Convention and considers the work of the Ad Hoc Working Group provides a good model for possible continued dialogue towards effective new procedures for the evaluation process. IUCN has also actively contributed to the Drafting Group to propose concrete changes for the *Operational Guidelines* concerning Preliminary Assessments.

IUCN notes that reform of the evaluation process is constrained fundamentally by the current calendar, and that many of the expectations of States Parties regarding increases in dialogue and transparency require more time to be provided for the evaluation, especially for nominations that are found to not meet requirements of the *Operational Guidelines*. Given the interlinkages between various processes, IUCN considers it essential that a fully integrated package of reforms is agreed as a central priority, and continued reflection on options and additional resources will be required to enable it to be effective, equitable to States Parties, and appropriate in supporting a balanced and representative World Heritage List.

3. THE IUCN WORLD HERITAGE PANEL

Purpose: The Panel advises IUCN on its work on World Heritage, particularly in relation to the evaluation of World Heritage nominations. The Panel normally meets face to face once a year for a week in December. Provisional recommendations are made at this December meeting of the Panel and reviewed at a second meeting or conference call the following March. Additionally, the Panel operates by email and/or conference call, as required.

Functions: A core role of the Panel is to provide a technical peer review process for the consideration of nominations, leading to the formal adoption of advice to IUCN on the recommendations it should make to the World Heritage Committee. In doing this, the Panel critically examines each available nomination document, the field mission report, any supplementary information from States Parties, the UN Environment WCMC Comparative Analysis, comments from external reviewers and other material. This material is then used to help prepare IUCN's advice, including IUCN recommendations relating to inscription under specified criteria, to the World Heritage Committee (and, in the case of some cultural landscapes, advice to ICOMOS). The Panel may also advise IUCN on other matters concerning World Heritage, including the State of Conservation of World Heritage properties and on policy matters relating to the Convention. Though it takes account of the policy context of IUCN's work under the Convention, its primary role is to deliver independent, high quality scientific and technical advice to IUCN, which has the final responsibility for corporate recommendations made to the World

Heritage Committee. Panel members agree to a code of conduct, which ensures ethical behaviour and avoids any conflict of interest.

Membership: Membership of the Panel is at the invitation of the IUCN Director General (or Deputy Director General under delegated authority) through the Director of the World Heritage Programme. The members of the Panel comprise IUCN staff with responsibility for IUCN's World Heritage work, other relevant IUCN staff, Commission members and external experts selected for their high level of experience with the World Heritage Convention. The membership of the Panel comprises:

- The Director, IUCN World Heritage Programme (Chair – non-voting)
- Senior Advisor, IUCN World Heritage Programme (Non-voting)
- At least one and a maximum of two staff of the IUCN Global Protected Areas Programme
- The IUCN World Commission on Protected Areas (WCPA) Vice Chair for World Heritage
- A representative of the IUCN Species Survival Commission (SSC) appointed on recommendation of the Chair, SSC
- Up to seven technical advisors, invited by IUCN and serving in a personal capacity, with recognised leading expertise and knowledge relevant to IUCN's work on World Heritage, including particular thematic and/or regional perspectives
- As of 2017 / 2018 one position for a specialist in geological heritage, appointed by IUCN following consultation with the International Union of Geological Sciences (IUGS) and the UNESCO Earth Sciences has been introduced.

In the course of 2016, and as previously agreed following the recommendation of the Committee's Ad Hoc Working Group, IUCN introduced a fixed term for Panel members (four years renewable once) and an internal application process, open to IUCN Commission members and IUCN members, to fill vacancies for technical advisors when they arise.

The Panel's preparations and its meetings are facilitated through the work of the World Heritage Evaluations and Operations Officer. Information on the members of the IUCN World Heritage Panel, together with its Terms of Reference (TOR) and the formats for IUCN documentation related to the evaluation process is posted online at the following link: https://www.iucn.org/theme/world-heritage/our-work/advisor-world-heritage/iucn-world-heritage-panel. A senior manager in IUCN (currently the IUCN Global Director, Biodiversity Conservation) is delegated by the Director General to provide oversight at senior level on World Heritage, including with the responsibility to ensure that the Panel functions within its TOR and mandate. This senior manager is not a member of the Panel, but is briefed during the Panel meeting on the Panel's conclusions. The Panel meeting may also be attended by other IUCN staff, Commission members (including the WCPA Chair) and external experts for specific items at the invitation of the Chair.

4. EVALUATION REPORTS

Each technical evaluation report presents a concise summary of the nominated property, a comparison with other similar properties, a review of protection, management and integrity issues and concludes with the assessment of the applicability of the criteria and a clear recommendation to the World Heritage Committee. IUCN also submits separately to the World Heritage Centre its recommendation in the form of a draft decision, and a draft Statement of Outstanding Universal Value for all properties it recommends for inscription. In addition, IUCN carries out field missions and/or external reviews for cultural landscapes containing important natural values, and provides its comments to ICOMOS. This report contains a short summary of these comments on each cultural landscape nomination reviewed.

5. NOMINATIONS EXAMINED IN 2020 / 2021

Nomination dossiers and minor boundary modifications examined by IUCN in the 2020 / 2021 cycle included:

- 2 natural property nominations (the evaluation of 2 further nominations had to be postponed);
- 1 referred nomination;
- 3 cultural landscape nominations; all 3 were commented on by IUCN based on internal and external desktop reviews.

6. COLLABORATION WITH INTERNATIONAL EARTH SCIENCE UNIONS

IUCN implements its consideration of earth science values within the World Heritage Convention through a global thematic study on Geological Heritage published in 2005. In addition, collaboration agreements with IUGS and the International Association of Geomorphologists (IAG) focus on strengthening the evaluation process by providing access to the global networks of earth scientists coordinated through IUGS and IAG. IUCN would like to record its gratitude to IUGS and IAG for their willingness to provide support to IUCN in fulfilling its advisory role to the World Heritage Convention.

7. RECOMMENDATIONS TO THE WORLD HERITAGE COMMITTEE

In the 2020 / 2021 cycle, IUCN has sought to ensure that States Parties have the opportunity to provide all the necessary information on their nominated properties through the process outlined in section 2 above. As per the provisions of the *Operational Guidelines*, and Decision 30 COM 13 of the World Heritage Committee (Vilnius, 2006), IUCN has not taken into consideration or included any information submitted by States Parties after 28 February 2021, as evidenced by the postmark. IUCN has previously noted a number of points for improvement in the

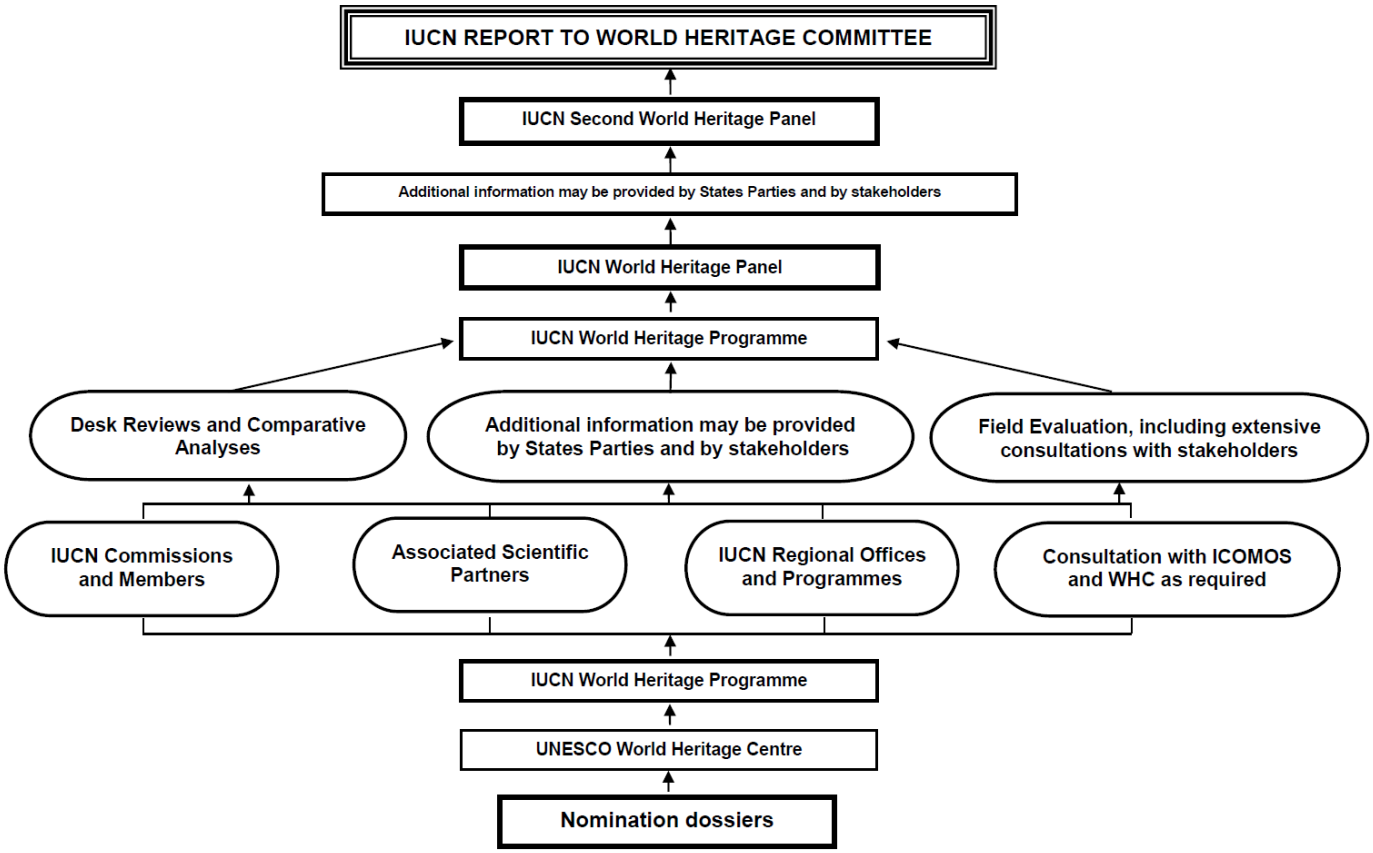
evaluation process, and especially to clarify the timelines involved.

The finalisation of this IUCN evaluation report took place following the required calendar for evaluations, and was finalised on 3 May 2020. At the time of finalisation, the new dates of the extended 44th Session of the World Heritage Committee had been announced, following its postponement due to the outbreak of the Covid-19 pandemic. The reports in this evaluation book shall be examined in the upcoming extended session of the Committee and were finalised based on the statutory deadline of 28 February 2021 for information supplied by the State Party, and thus all information that has been considered dates at the latest from the time of the second and final IUCN World Heritage Panel, held in March 2021.

8. ACKNOWLEDGEMENTS

As in previous years, this report is a group product to which a large number of people have contributed. Acknowledgements for advice received are due to the external evaluators and reviewers, many of them from IUCN's members, Commissions and Networks, and numerous IUCN staff at Headquarters and in IUCN's Regional and Country Offices. Many others contributed inputs during field missions. This support is acknowledged with deep gratitude.

Figure 1: IUCN Evaluation Process



A. NATURAL PROPERTIES

A1. NEW NOMINATIONS OF NATURAL PROPERTIES

AFRICA

IVINDO NATIONAL PARK

GABON

Forest between Ipassa and Kongou Falls, Ivindo National Park, Gabon © IUCN / Wendy Strahm

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

IVINDO NATIONAL PARK (GABON) – ID N° 1653

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To refer the nomination under natural criteria (ix) and (x)

Key paragraphs of *Operational Guidelines*:
Paragraph 77: Nominated property meets World Heritage criteria.
Paragraph 78: Nominated property meets integrity requirements, however does not fully meet protection and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: Original nomination received in February 2020.

b) Additional information officially requested from and provided by the State Party: Following the IUCN field evaluation mission, the State Party submitted additional information on the nominated property, including on logging concessions, local communities, funding and management of Ivindo National Park. Further to the IUCN World Heritage Panel, a progress report was sent to the State Party by IUCN on 16 December 2020. This letter advised on the status of the evaluation process and sought responses and clarifications on logging concessions in the buffer zone, mining, and the development of the management plan, among other points. The State Party submitted additional information on these points on 26 February 2021.

c) Additional literature consulted: Various sources, including: Arnegard, M.E., McIntyre, P.B., *et al.* (2010). Sexual signal evolution outpaces ecological divergence during electric fish species radiation. *The American Naturalist* 176(3): 335-356; Boupoya, A., Doumenge, C. & Lejoly, J. (2010). La végétation des clairières sur sol hydromorphe dans le massif forestier du nord-est du Gabon: premières études sur la clairière de Mékandjé (parc national de l'Ivindo), *Acta Botanica Gallica*, 157(1); Burgess, N., Hales, *et al.* (2004). *Terrestrial eco-regions of Africa and Madagascar: A conservation assessment.* WWF U.S.; Bush, E.R., Whytock, R.C., *et al.* (2020). Long-term collapse in fruit availability threatens Central African forest megafauna. *Science*, 370(6521); Darwall, W.R.T., Smith, K.G., *et al.* (eds.) (2011). *The Diversity of Life in African Freshwaters: Under Water, Under Threat. An analysis of the status and distribution of freshwater species throughout mainland Africa.* Cambridge, IUCN, Cambridge, U.K. & Gland, CH; Dauby, G., Hardy, O.J., *et al.* (2013). Drivers of tree diversity in tropical rain forests: new insights from a comparison between littoral and hilly landscapes of Central Africa. *Journal of Biogeography*, doi:10.1111/jbi.12233; Hopkins, C.D., (1981). On the diversity of electric signals in a community of electric Mormyrid fish in West Africa. *Amer. Zool.* 21: 211-222; Hopkins, C.D., Lavoué, S. & Sullivan, J.P. (2007). Mormyridae. In: Stiassny et al. (eds.), *The fresh and brackish water fishes of Lower Guinea*, West-central Africa: 219-334; Maisels, F., Motsaba, P., & Aba'a, R. (2010). *Great ape and human impact monitoring in the Ivindo Landscape, Gabon*. Final report, second cycle of monitoring in the Park and southern buffer zone, WCS; Maisels, F., Strindberg, S., *et al.* (2013). Devastating Decline of Forest Elephants in Central Africa. *PLOS ONE* 8(3): e59469; Malan, D.F. (2020). *Projet de mise à jour des biens naturels de la liste indicative du patrimoine mondial au Gabon et présentation du dossier de nomination du Parc National de l'Ivindo*. Rapport de mission; MGB (2021). *Les forêts à Caesalpinioideae matures et intactes de l'Ivindo.* Missouri Botanical Garden, http://legacy.tropicos.org (accessed 16/03/2021); Mittermeier, R.A., Myers, N., *et al.* (1998). Biodiversity Hotspots and Major Tropical Wilderness Areas: Approaches to Setting Conservation Priorities. *Conservation Biology* 12(3), 516-520; Olson, D.M., Dinerstein, E., *et al.* (2000). *The Global 200: A Representation Approach to Conserving the Earth's Distinctive Ecoregions*. Conservation Science Program, WWF, U.S.; PRBC (2006). *Les Forêts du Bassin du Congo: Etat des Forêts 2006.* Le Partenariat pour les Forêts du Bassin du Congo; Rayden, T. & Essame Essono, R. (2010). *Evaluation of the management of wildlife in the forestry concessions around the national parks of Lopé, Waka and Ivindo, Gabon*. WCS Gabon; Sassen, M. & Wan, M. (2006). *Biodiversity and local priorities in a community near the Ivindo National Park Makokou, Gabon.* Report. Research mission carried out within the framework of the management and development of the Ivindo National Park (Ogooué-Ivindo/Gabon) 23 March - 02 May 2005; Stévart, T., Texier, *et al.* (2016). *Threatened Plant Species of Gabon.* Missouri Botanical Garden, St. Louis, U.S.; UNESCO (2010). *World Heritage in the Congo Bassin.* UNESCO World Heritage Centre; Temgoua, L.F. (2006). *Identification et caractérisation des clairières marécageuses du parc national de l'Ivindo (Gabon).* Mémoire Master 2 FRT, ENGREF, Montpellier, France; Vande weghe, J.P. (2006). *Ivindo et Mwagna : eaux noires, forêts vierges et baïs.* WCS, Libreville, Gabon; Vande weghe, J.P. (2014). *Biodiversity of Gabon's National Parks and Reserves. 1. A Pictorial Introduction.* ANPN, Libreville, Gabon; Vande weghe, J.P., Bidault, E. & Stévart, T. (2016). *Les plantes à fleurs du Gabon. Une*

introduction à la flore des angiospermes. ANPN, Libreville, Gabon; White, F. (1983). *The vegetation of Africa, a descriptive memoir to accompany the UNESCO/AETFAT/UNSO Vegetation Map of Africa* (3 Plates, Northwestern Africa, Northeastern Africa, and Southern Africa, 1:5,000,000), UNESCO; Vancutsem, C., Achard, F., *et al.* (2021). Long-term (1990-2019) monitoring of forest cover changes in the humid tropics. *Science Advances* 7(10), eabe1603; White, L. and Vande weghe, J.P. (2008). *Patrimoine mondial naturel d'Afrique centrale. Biens existants – bien potentiels*. Rapport de l'atelier de Brazzaville du 12-14 mars 2008; UNESCO – CAWHFI; Yobo, C.M. & Ito, K. (2015). Trade of the most popular indigenous fruits and nuts, threats and opportunities for their sustainable management around the Ivindo National Park (INP), Gabon. *Intl. J. of Biodiversity and Conservation* 7(2): 85-102.

d) Consultations: 13 desk reviews received. The field evaluation mission met with a wide range of stakeholders including the Ministry of Forestry, Water, Sea and Environment, the National Agency of National Parks (ANPN), the site management, Wildlife Conservation Society (WCS), Tropical Ecology Research Institute (IRET) and Missouri Botanical Garden. The mission also met with representatives from the forestry sector, and provincial and municipal authorities.

e) Field Visit: Wendy Strahm, 22-30 October 2020

f) Date of IUCN approval of this report: April 2021

2. SUMMARY OF NATURAL VALUES

Ivindo National Park (INP) is nominated under criteria (vii), (ix) and (x). The nominated property is situated on the geographic equator at an altitude between 350 and 748 m.a.s.l. at the southern border of the Archean plateau of northern Gabon. INP is shared by the provinces of Ogooué-Ivindo and Ogooué-Lolo. It encompasses an area of almost 298,758 ha with a five km-wide buffer zone of 182,268 ha surrounding the national park's boundaries (see table 1).

INP is subject to a transitional equatorial climate, with two main rainy seasons from October to November and from April to May and is crossed by a network of picturesque black-water rivers. The southern part of the nominated property is within the Langoué River system. The Djidji River drainage in the central part of INP is largely covered by the nominated property, whilst Ivindo River and interlaced tributaries in the north-west of INP belong to a transboundary watershed with Cameroon and Congo. A series of rapids and waterfalls bordered by intact rainforest mark this section of Ivindo River, of which the most important ones are Mingouli falls, at a height of 48 m and Kongou falls further upstream, at a height of 56 m stretching over a distance of two km. Their aesthetic value has been put forward as a principle element under criterion (vii). This part of the river has also been designated within a Ramsar Site, which also includes further areas outside and downstream of the nominated property. The highest waterfalls in the nominated property are up to 60 m in height and can be found at the western border of INP on Didji River. The aquatic habitats harbour a diverse fauna of freshwater fishes, including many endemic fish species, 13 fish species recorded as threatened, and at least seven species of *Podostemaceae* riverweeds, with probable micro-endemic aquatic flora at each waterfall. There are many fish species yet to be described and areas in INP that have hardly been investigated. Similarly, a reportedly healthy population of the Critically Endangered Slender-snouted Crocodile (*Mecistops cataphractus*) finds shelter in the Djidji River, whose watershed is free from fishing nets which can be fatal to this Crocodile.

Situated in the lower Guinean Rainforest zone, the nominated property boasts very old *Caesalpinioideae* climax forest on about 30-40% of its area in the south of INP, along with naturally created swampy clearings. The *Caesalpinioideae* old-growth forests have been identified as being biogeographically unique and of high conservation value, supporting, for instance, the very high diversity of butterflies in INP. The old-growth forests house a rich biodiversity, including important and stable populations of threatened flagship mammals and avian fauna. These include species on the IUCN Red List of Threatened Species, such as the Critically Endangered Forest Elephant (*Loxodonta cyclotis*), Western Lowland Gorilla (*Gorilla gorilla*), the Endangered Chimpanzee (*Pan troglodytes*) and Grey Parrot (*Psittacus erithacus*) as well as the Vulnerable Grey-necked Rockfowl (*Picathartes oreas*), Mandrill (*Mandrillus sphinx*), Leopard (*Panthera pardus*), and African Golden Cat (*Caracal aurata*), and three species of Pangolin (*Manidae spp.*). Despite severe losses of Forest Elephant populations in other areas, Gabon is said to house half of the remaining Forest Elephant populations, with INP providing an important safe haven. INP's megafauna benefits from natural swampy clearings of great ecological importance. These marshy clearings are relict herbaceous ecosystems that add to the diversity of the nominated property's vegetation.

The entire INP is uninhabited by people and generally difficult to access and therefore considered to be largely pristine. Only in the northern part of the buffer zone, a few small settlements can be found. Ivindo River is being used for some customary fishing.

3. COMPARISONS WITH OTHER AREAS

The nomination dossier provides a brief account regarding the comparative analysis for Ivindo National Park (INP) in respect to criterion (vii). The intact and pristine river courses and waterfalls of INP are put forward as the primary basis for the nominated property's aesthetic value under criterion (vii). While the nomination concedes that there exist other, more spectacular waterfalls in the world, including emblematic World Heritage properties, it contends that these are all surrounded by other types of vegetation

and disturbed by human intrusions. In contrast, the waterfalls of INP would be embedded in a vast area of intact tropical forest, creating a special ambiance, reported as unique at this scale.

IUCN notes that the case for criterion (vii) is primarily based on the integrity of rivers and waterfalls of the nominated property. However, what is missing is a clear identification and systematic analysis of the value of these attributes compared against waterfalls and rivers in the tropics and other World Heritage properties globally. The nomination does not provide an explanation of how the rivers and waterfalls of INP may or may not represent a superlative natural phenomenon and/or carry an aesthetic value of global importance. Nevertheless, IUCN recognises the aesthetic appeal and particularity of pristine tropical forest interspersed with the braided structure of Ivindo River in the instance of Kongou falls, and potentially others not visited by the field evaluation, which blend in seamlessly with the surrounding forests, offering a myriad of stunning perspectives. This landscape diversity within INP as such however, and the limited extent and scale of these waterfalls would not appear to warrant a case for global significance under criterion (vii), based on the information available. These values, and the wider integrity considerations, can also more appropriately be related to the application of criterion (ix).

The comparative analysis provided in the nomination dossier for criteria (ix) and (x) is based on the overarching observation that spatial differentiation within tropical rainforests is so significant at all scales that each protected area can only represent a fraction of faunal and floral diversity, which is distinct from one area to another.

In this vein, the comparative analysis distinguishes, at global scale, the Guineo-Congolian forests from Asian tropical forests and neotropical forests on the grounds of their species composition. Therefore, the comparative analysis does not engage in detailed comparison with properties in Asia and Latin America and focuses on a comparison of African tropical forests only. At regional scale, the nomination compares the nominated property with the eight World Heritage properties that are located in the Guineo-Congolian forest region. The nomination argues that the sub-regional differentiation within the Guineo-Congolian forest region is such that the forests of the Lower Guinea sub-region, where INP is situated, are clearly distinct from those in the Congolian sub-region. This is suggested by studies showing that the forests of Lower Guinea are the richest of all Guinean-Congolian forests, including the highest percentage of endemic species, as exemplified by *Caesalpinioideae*. Similarly, at sub-regional level, the comparative analysis highlights the division of Lower-Guinean forests into four distinct zones, which each exhibit a considerable variation of the floristic composition in the order of 80%. The forests of the interior plateau are marked by a large diversity of *Caesalpinioideae*, which may be most accentuated in the Ivindo basin as the most diverse region of Gabon. This also holds true at site level, where the forests at the Western border differ from the Eastern border at a rate of 60%. In principle, the same would apply to the fauna, though with a different pattern.

IUCN, in collaboration with UN Environment WCMC, has undertaken supplementary comparative analysis, focusing on criteria (ix) and (x). Regarding criterion (ix), it can be noted that while the Ecosystem and Relict Cultural Landscape of Lopé-Okanda (Gabon) World Heritage property is also identified in the nomination dossier as being part of the Lower-Guinean forest, it is also clearly differentiated from Ivindo, being comprised of large areas of savannah bisected by gallery forest. It deserves to be also noted that this ecoregion, and the nominated property in particular, is part of one of the world's last remaining tropical areas still containing forest wildernesses. The Ivindo landscape area has been described as representative of one of the richest regions of Lower Guinea in terms of biodiversity, hosting a high number of species that are endemic or sub-endemic to the interior plateaus of Gabon.

Furthermore, the nominated property lies within two freshwater ecoregions that are not yet represented on the World Heritage List. INP is part of the Gulf of Guinea Rivers and Streams, a freshwater priority ecoregion that is thus far represented by only one other World Heritage property, which are characterised by the presence of many species of vertebrates and trees only known to occur within this ecoregion, and significant ichthyologic values noted further below. The watercourses of INP stand out in that they are wild and free-flowing rivers meandering through pristine tropical forest, with hardly any human visitation of large parts of INP. From that perspective, the nominated property can arguably be seen as exceptional, providing sufficient space for continued and undisturbed evolutionary processes.

The nominated property is characterised by large and diverse forest ecosystems and is situated in ecoregions, which are only represented by two other World Heritage properties, one of which is the Dja Faunal Reserve. It is worth noting though that the Dja Faunal Reserve, and the Tentative List sites Ecosystème et paysage culturel pygmée du massif de Minkébé (Gabon), and Parc national d'Odzala-Kokoua (Congo) – both previously nominated under biodiversity criteria – are not part of these freshwater ecoregions. The large and diverse forest ecosystems of INP are of significant conservation value, notably due to the presence of very old *Caesalpinioideae* forests. Awoura forests (*Julbernardia pellegriniana*) are endemic to the Lower Guinea region, and forests of *Eurypetalum batesii* are endemic to Gabon. Both contribute to the nominated property's biodiversity, along with the presence of natural swampy clearings.

Regarding criterion (x), the vegetation of the nominated property appears to be highly biodiverse. The Guineo-Congolian forests within the nominated property are intact and include a large proportion of mixed mature forests. Many large and medium-sized mammal species, including several species of primates, contribute to the nominated property's faunal

diversity, including globally threatened species (see previous section). Even though the site has not been intensively surveyed, it is known to host a significant number of bird, reptile and amphibian species. Numerous rare and/or endemic plant and animal species are also found in INP. In addition, IUCN notes that, together with two other protected areas, the nominated property is considered to be amongst the most irreplaceable protected areas in the world for mammal, bird and amphibian conservation.

Ivindo River hosts a dozen species of weakly electrogenic fishes of the genus *Paramormyrops* (*Mormyridae*) whose speciation in the Ivindo River is a unique biological phenomenon, which has not been observed in the Dja Faunal Reserve. External ichthyologist reviewers noted sixteen fishes exclusively native to the Ivindo, with particular richness among killifishes (*Cyprinodontiformes*) and elephantnose fishes (*Momyridae*), including very specialised and fragile species of the genus *Ivindomyrus*, named after Ivindo River. Riverine fish species flocks are globally rare and the *Paramormyrops* flock is unique in Africa. According to the current state of knowledge, there is no other stream environment in Africa that boasts so many congeneric fish species living within a circle of a few hundred-meters only. At least twelve fish species that are potentially undescribed also occur throughout the Ivindo region and certainly or probably exist within INP's borders. Even though much further investigation into INP's ichthyofauna is warranted, IUCN supports the scientific opinion to date strongly suggesting that Ivindo's fish diversity bears global significance due to the intersection of high endemicity, the presence of an exceptional flock of *Mormyridae*, and its biogeographic connections to adjacent ichthyofaunas.

Based on the above, IUCN considers that the nominated property appears to be of global significance in terms of biodiversity values of the nominated property, both with regards to criteria (ix) and (x). The combination of a large area of untouched climax *Caesalpinioideae* forest and river ecosystems without human impact provide justification for criterion (ix). Criterion (x) is strongly supported by INP's rivers harbouring a globally significant fish fauna at exceptional endemicity, a highly biodiverse flora and habitats critically important for mammal, bird and amphibian conservation. In terms of criterion (vii), INP may be significant at regional scale; at global scale however, a compelling case has not been made.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

The nominated property was declared a National Park in 2002 with relevant legislation coming into force in 2008. The northern part of the national park had been protected since 1971 through the integral reserve of Ipassa, covering 10,000 ha. Ivindo National Park (INP) at almost 300,000 ha is owned by the state and receives the highest national protection available in the Gabonese protected area system. Legislation suggests that INP should be regarded as a Category II protected area.

The National Park Law provides for a zonation of the nominated property to specify levels of protection and use; however, this zonation has not been fully defined yet as biological knowledge is still insufficient and requires further study. In any case, the national park decree limits all human activities inside the nominated property except those stemming from customary use. The only use permitted in INP is fishing under the supervision of national park staff. The protection of INP also benefits from its difficult accessibility. There is a mechanism bringing together park management and local communities, called the Local Consultative Management Committee (CCGL). Overall, the formal protection status is therefore considered adequate.

However, while these provisions are considered adequate, they do not appear to guarantee that extremely damaging activities are prevented, as the previous consideration of a hydro-electric plant along the park's waterfalls suggests. Mining is not allowed inside national parks in Gabon, but may be implemented in buffer zones, subject to an Environmental Impact Assessment (EIA) demonstrating that such activities do not entail negative impacts on the park.

The buffer zone is also legally protected and has to be considered in the complete zoning of the park, along with the surrounding peripheral zone. The IUCN field evaluation noted that the State Party is planning to amend the legal protection for national park buffer zones. In supplementary information, the State Party clarified that the main purpose of this legal change to be adopted in 2021 is to enable local populations living in buffer zones of national parks to acquire land titles. This legal change would neither entail changes to the boundaries of the nominated property's buffer zone nor an amendment to the protective functions of buffer zones.

Logging concessions cover the vast majority of the buffer zone, but have to leave untouched a 500m strip off the national park boundary. The IUCN World Heritage Panel has expressed its concern about the extent of logging concessions in the vicinity of the nominated property and the possibility of edge effects detrimental to the nominated property. While the State Party assured in supplementary information that logging is limited to selective cuts of two trees per hectare, and that all concessions shall receive FSC certification by the end of 2022, only two of the eleven existing concessions currently hold such certification at the time of the IUCN evaluation process.

In conclusion, IUCN considers that the protection regime of the nominated property is adequate, provided that the previously considered hydropower dam inside INP or similar infrastructure projects remain unequivocally and permanently abandoned. IUCN is further of the view that the protection of INP's buffer zone should be strengthened to reduce any possible edge effects on the nominated property.

IUCN considers that the protection status of the nominated property partially meets the requirements of the *Operational Guidelines,* and that the protection in the nominated property's buffer zone should be enhanced.

4.2 Boundaries

The boundaries of the nominated property are identical to those of Ivindo National Park (INP). At a width of 5 km, the buffer zone of INP encompasses an area that is equal to almost one third of INP. While its 5 km standard width does not follow ecological boundaries, it appears to be of sufficient size in principle. However, the buffer zone almost entirely overlaps with logging concessions, which is discussed in the previous and subsequent sections.

INP covers free-flowing rivers and unexploited old-growth forest, including riverine forest with associated fauna. Notably, INP encompasses a significant part of the Djidji watershed. Ivindo River intersects with INP at a length of approximately 80 km and continues to be unimpeded beyond the nominated property.

Natural swampy clearings are an important feature complementing floral diversity and supporting megafauna. While these natural clearings convince through their intactness, INP includes only a fraction of a vast group of swampy clearings stretching from northern Congo to south-eastern Cameroon and north-eastern Gabon. Therefore, their potential global significance could only be represented through a serial approach but not by INP alone.

In contrast, the *Caesalpinioideae* forests only occur in the remaining highly natural parts of the lower sections of the Ivindo watershed, including in the nominated property. Research based on satellite imagery confirms that INP's forest cover remained almost entirely unchanged over the last decades, supporting the claim of INP's excellent integrity. IUCN notes though that large areas of *Caesalpinioideae* can be found east of INP. Smaller areas have also been observed in the south of Ivindo National Park. When comparing the size of INP with that of other inscribed World Heritage properties and Tentative List sites, INP is comparatively small in size and could potentially cover *Caesalpinioideae* forests more fully. However, even if *Caesalpinioideae* and other elements of the nominated property's biodiversity range over an area larger than that of the national park, INP is still vast enough with its almost 300,000 ha to conserve its biodiversity and large tracts of old-growth climax *Caesalpinioideae* forests, flanked by Awoura (*Julbernardia pellegriniana*) and *Eurypetalum batesii* as well as associated fauna, in particular insects requiring old-growth forest, including endemic insects.

Overall, IUCN considers that the boundaries of the nominated property are adequate as they capture vast and viable areas of INP's key values exhibiting a superb integrity.

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

4.3 Management

The management of the nominated property is carried out under the responsibility of the National Agency of National Parks (ANPN) of Gabon. Ivindo National Park (INP) is essentially subject to a non-intervention regime, with the exception of controlled fishing and negligible levels of visitation in the few areas that are accessible. The nominated property has a comprehensive Management Plan whose term was however supposed to expire in 2020. However, the nomination dossier does not specify in how far the plan has been implemented to date. At the time of the field evaluation, i.e. two months before the plan's expiry, there appeared to be little information was available in terms of the Management Plan's implementation levels, as well as in terms of review and consultation processes for the new management plan. Nevertheless, the State Party confirmed in supplementary information that the term of the Management Plan has been extended until 2022 as the revision had to be postponed due to Covid-19.

While the Management Plan is comprehensive and ambitious, there is no clear indication on how the Plan was going to be monitored for effectiveness, nor on the steps in place to develop the next five-year Management Plan. The nomination indicates that only 53 of 75 indicated staff positions are filled. Many of the activities and objectives were not achieved during the 2016-2020 timeframe. The Management Plan foresaw an estimated budget of 10 million Euro for a period from 2016-2020, however the nomination dossier indicates that only 6.75 % of this estimated budget has been mobilised. Supplementary information from the State Party estimates 1.3 million Euro as annual budget need. Various funding sources are envisaged, or in the process of being negotiated, but at the time of finalisation of this evaluation report not at a stage where the short- and medium-term funding is confirmed.

The State Party plans to incorporate a monitoring plan in the new management plan on the basis of an inventory of fauna conducted in the period of 2017 to 2020. Additional work on inventories of flora is planned. IUCN considers it important to ensure that a proper inventory and monitoring plan is included in the Management Plan to close knowledge gaps on biodiversity within INP and to inform park management, including the zonation of INP.

The review process of the management plan is now foreseen to take place in the second half of 2021 and is expected to take into account a potential World Heritage listing. In response to IUCN's request for information on consultation processes for the existing Management Plan and its envisaged revision, the State Party states that it has conducted a participatory process, but did not provide any details or indications as to what is foreseen for the review process.

IUCN considers that the management of the nominated property does not fully meet the requirements of the *Operational Guidelines,* notably in terms of the absence of the expected up-to-date management plan and the levels of committed funding to the conservation of the nominated property.

4.4 Community

The nominated property is not inhabited, and only a few villages are located within the buffer zone. Under current law, people who live in the buffer zone are not allowed legal title to the land, which is owned by the State. The State Party plans to amend the buffer zone law to enable local populations to acquire land titles.

The Local Consultative Management Committee (CCGL) is inscribed in the law and was developed to bring in input from all stakeholders including the surrounding local communities as well as the surrounding forestry concessionaires. However, the IUCN field evaluation had no chance to meet with the CCGL as it was not operational at the time of the mission due to reelections. Following IUCN's request for supplementary information, the State Party confirmed that the CCGL is functional and has been consulted during the drafting process of the nomination and that public consultations had been held. INP staff endeavors to solve human-elephant conflicts in cooperation with local communities.

IUCN considers it important that the new management plan for the nominated property is developed through a fully participatory process. This participatory process needs to include consultations with local communities both in the buffer zone and adjacent to the nominated property. The 2021 review process for the new management plan provides an opportunity to conduct consultations in line with paragraph 123 of the *Operational Guidelines*.

4.5 Threats

The vast majority of the area of Ivindo National Park (INP) remains virtually untouched by human activities, also thanks to its difficult accessibility. While ten percent of the nominated property's area have in the past been affected by logging on a western fringe of the park before INP was designated, the nominated property exhibits a compelling integrity and is generally in an excellent state of conservation. At the same time, while the nominated property is large enough to provide for the effective conservation of its values, it remains important to strive to protect *Caesalpinioideae* also beyond INP as large parts of this old-growth forest are also located outside the nominated property. Likewise, INP's freshwater biodiversity, which includes many fragile species, will depend on the protection from potential impacts of developments upstream and downstream of INP. Wide-ranging fauna requires protection from poaching and other threats also outside national park boundaries, as exemplified by population declines of the Critically Endangered Forest Elephant (*Loxodonta cyclotis*) as a consequence of poaching for ivory in nearby national parks.

The conservation value of *Caesalpinioideae* old-growth habitats is emphasised by the fact that they are becoming increasingly rare due to logging concessions in almost all areas surrounding INP, including selective logging in the buffer zone of INP. While logging is prohibited within the nominated property, felling may reach up to 500m from INP's boundaries. The nomination dossier argues that the positives of the forestry concessions outweigh the negatives. Especially those concessions in the buffer zone that are FSC-certified would facilitate the combat against poaching as they enable the control of access. The National Agency of National Parks (ANPN) is also cooperating with several logging companies to address poaching threats.

While these logging concessions for selective cuts arguably create less fragmentation than other productive land uses, such as palm oil plantations, forestry operations include clearances for stocking, and felling focuses on the largest and most valuable trees. These operations have already resulted in the introduction of the invasive ant *Wassmannia auropunctata* to INP and also open up previously inaccessible areas through the creation of access roads. Access roads are supposed to be decommissioned after completion of the exploitation, but an effective control appears to be an ambitious undertaking in light of a total of eleven concessions located on all sides of the national park, where the Critically Endangered Forest Elephant (*Loxodonta cyclotis*) is also present. IUCN also notes that thus far only two of these eleven logging concessions are FSC-certified. Hence, there is no present guarantee for the sustainability and control of these concessions.

In this respect, it is important to note that anti-poaching efforts may be constrained by insufficient staffing and funding of the park management. It was suggested during the field evaluation that increased poaching of forest elephants in Minkébé and Mwagna national parks has pushed the remaining elephant populations south to areas where they are safe, including in INP thanks to the nominated property's inaccessibility. If the surrounding areas become more accessible due to infrastructural developments and logging concessions, poaching may become a threat to the nominated property in future, unless capacity for effective anti-poaching measures is ensured. This will be crucial to sustain INP's important role for the protection of critically endangered forest elephants.

Another complex of potential threats to INP includes envisaged developments for the exploitation of the Bélinga iron ore deposits, located approximately 180 km northeast of the nominated property. First, sediment from the mine and pollution from tailings could affect the thus far pristine Ivindo River and its aquatic biodiversity. Second, transport infrastructure for the operation of the mine could have negative impacts on the park. A transmission line and a new railway line are being considered in proximity of INP. Third, a hydropower plant planned to be located

downstream of the nominated property could truncate the thus far unimpeded river system and affect INP's aquatic biodiversity. The hydropower plant had initially been planned inside INP, on the Kongou falls, but discarded due to geological issues. Finally, these activities could have further knock-on effects such as fragmentation of the forest landscape and increased pressure on the natural resources through immigration.

Tourism and levels of visitation remain very low for the time being, with less than 200 people visiting annually prior to Covid-19. Internal zoning of INP foresees a zone for ecotourism according to supplementary information submitted by the State Party. This would include five hotels inside INP, implying further infrastructural encroachment, and hence avenues for poaching, into the park.

Overall, IUCN notes with concern the number of threats that have the potential to affect the potential OUV of the nominated property, but acknowledges that the nominated property so far exhibits an exceptional integrity.

In conclusion, IUCN considers that while the requirements of the *Operational Guidelines* are met in terms of the integrity of the nominated property, however protection and management requirements are only partially met.

5. ADDITIONAL COMMENTS

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6. APPLICATION OF CRITERIA

Ivindo National Park (Gabon) has been nominated under natural criteria (vii), (ix) and (x).

Criterion (vii): Superlative natural phenomena or natural beauty or aesthetic importance
The nominated property hosts scenic and varied waterfalls, in forest landscapes which are virtually untouched by human activity. However, the nomination does not provide detail as to how the rivers and waterfalls of INP may or may not represent a superlative natural phenomenon and/or carry an aesthetic value of global importance. While IUCN acknowledges the aesthetic appeal and scenic value of pristine tropical forest interspersed with unimpeded black water river branches, the waterfalls do not stand out compared to other World Heritage waterfalls globally in terms of their extent, and dimensions. They may be of regional significance but, based on the documentation available, there does not appear to be a strong case for global significance under criterion (vii). Furthermore the attributes noted as of significance under this criterion, such as the undisturbed forests and river landscapes, can also be considered to be represented under criterion (ix).

IUCN considers that the nominated property does not meet this criterion.

Criterion (ix): Ecosystems/communities and ecological/biological processes
Ivindo National Park combines a vast area of untouched climax *Caesalpinioideae* forest interspersed with pristine river ecosystems. The nominated property is characterised by large and diverse forest ecosystems whose vast majority of area exhibits an exceptional intactness, notably the old-growth *Caesalpinioideae* forests. Ivindo National Park is situated in two freshwater ecoregions, Ogooue - Nyanga - Kouilou - Niari and the Southern Gulf of Guinea Drainages - Bioko, neither of which are yet represented on the World Heritage List. The watercourses of INP stand out in that they are wild and free-flowing rivers meandering through pristine tropical forest, with hardly any human presence in large parts of INP. From that perspective, the nominated property can be seen as exceptional, providing sufficient space for continued and undisturbed evolutionary processes. The rivers of Gabon provide crucial habitat to one of the world's best examples of remarkable speciation in flowing waters. Evolutionary processes are exemplified by species flocks in which the speciation process has been working at very high pace for reasons that are not yet understood.

IUCN considers that the nominated property meets this criterion.

Criterion (x): Biodiversity and threatened species
The nominated property contains a highly biodiverse flora and habitats critically important for mammal, bird and amphibian conservation. The old-growth forests of the nominated property boast a rich biodiversity, including important and stable populations of threatened mammals and birds. These include the Critically Endangered Forest Elephant (*Loxodonta cyclotis*), Western Lowland Gorilla (*Gorilla gorilla*), the Endangered Chimpanzee (*Pan troglodytes*) and Grey Parrot (*Psittacus erithacus*). The vegetation of the nominated property appears to be highly biodiverse. Numerous rare and/or endemic plant and animal species are also found in the nominated property. The fish fauna within and around Ivindo National Park holds global significance on account of its exceptional endemicity, distinctive species assemblage reflecting historical connectivity with several adjacent basins, and inclusion of one of the world's most impressive examples of a riverine flock of species, belonging to the genus *Paramormyrops* (*Mormyridae*). Hardly anywhere else in the world have so many similar fish species been observed within just a few hundred-meter radius, according to current knowledge with much of Ivindo still remaining to be sampled.

IUCN considers that the nominated property meets this criterion.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC/21/44.COM/8B and WHC/21/44.COM/INF.8B2;

2. Refers the nomination of **Ivindo National Park, Gabon**, back to the State Party, noting the strong potential for this nominated property to meet criteria (ix) and (x), in order to allow it, with the advice of IUCN and the World Heritage Centre, if requested, to:

a) complete and provide the new and revised management plan for Ivindo National Park, and to ensure that this plan:
   i. takes into account the protection of the potential Outstanding Universal Value (OUV) of the nominated property, including through proper inventories and a monitoring plan for its freshwater biodiversity and *Caesalpinioideae* forests,
   ii. is developed through a fully participatory process, including consultations with local communities both in the buffer zone and adjacent to Ivindo National Park,
   iii. is supported by secure, sufficient and sustainable funding for the management of Ivindo National Park,

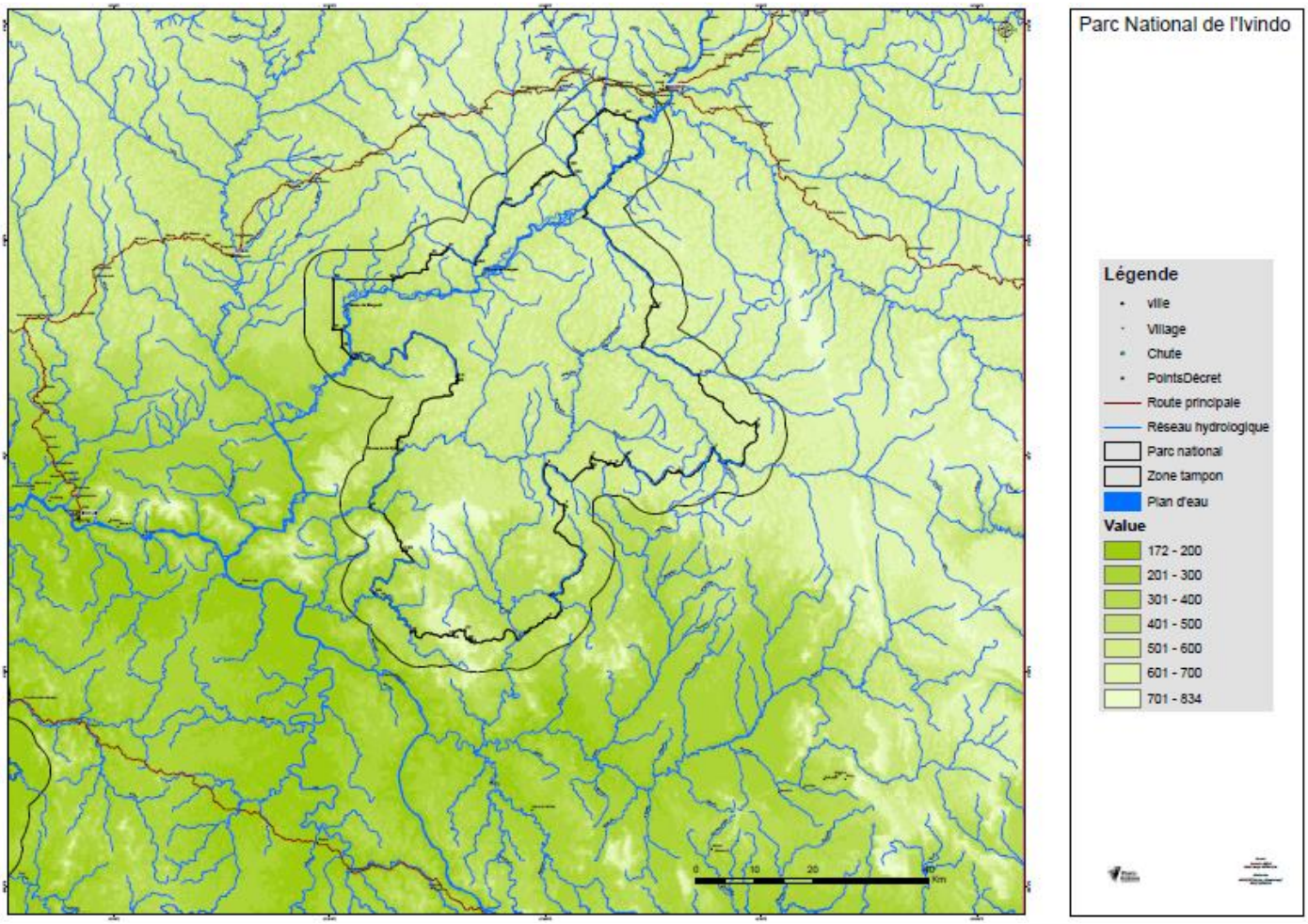
b) ensure any potential infrastructure projects outside the nominated property will not negatively impact the potential OUV of the nominated property, and would be subject to prior assessment in line with the IUCN World Heritage advice note on Environmental Assessment,

c) Increase the area of the buffer zone that would not be subject to logging regimes to the greatest extent possible, to reduce any edge effects on the natural systems inside the nominated property, and ensure that all concessions in the buffer zone of Ivindo National Park have received FSC certification and that they will be strictly controlled and managed without any significant impacts on the potential OUV of the nominated property,

d) ensure that any future internal zonation of Ivindo National Park is based on inventories of the biodiversity values and does not allow tourism infrastructure, such as hotels, to be located inside the park;

3. Expresses its appreciation for the designation of Ivindo National Park and the extensive efforts to date regarding the nomination of this site.

Map 1: Nominated property and buffer zone



C. CULTURAL PROPERTIES

C1. NEW NOMINATIONS OF CULTURAL PROPERTIES

ASIA / PACIFIC

CULTURAL LANDSCAPE OF HAWRAMAN/URAMANAT

IRAN (ISLAMIC REPUBLIC OF)

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

THE CULTURAL LANDSCAPE OF HAWRAMAN/URAMANAT (IRAN, ISLAMIC REPUBLIC OF)

The IUCN World Heritage Panel considered this cultural landscape nomination based on a desk review of the nomination dossier, a wide range of studies, and the comments of two external desk reviewers to provide inputs to ICOMOS on the natural values of this nominated property.

Located in the Zagros Mountains in the Kurdistan and Kermanshah provinces of Iran, the Hawraman/Uramanat nominated property has been inhabited for thousands of years, especially by the *Hawrami* people, who until today have been practicing farming, including orchard-making, livestock rearing and transhumance in a complex human-environment interaction. The nominated property consists of two component parts totalling 106,307 ha and a buffer zone of 303,623 ha surrounding them. The smaller component part in the Western Valley (Lahun) overlaps partially with the Buzin and Markhil protected areas. This protected area was established in 2000 and corresponds to IUCN Management Category V (Protected Landscape/Seascape). The larger component part (The Central Valley) includes the Kosalan and Shahu protected areas.

According to several studies, biodiversity hotspots for threatened mammal species are located along the Zagros and Alborz mountain range. High biodiversity of endemic flora, herpetofauna and amphipod biodiversity has also been identified in the endangered Irano-Anatolian and Caucasus biodiversity hotspots. The Zagros Mountains form an important part of the Irano-Anatolian biodiversity hotspot, which was identified as a gap in the 2013 IUCN study on Terrestrial Biodiversity and the World Heritage List. The Zagros Mountains forest steppe ecoregion, in which the property is located, has no natural World Heritage property to date.

With an altitudinal gradient from 710 to 3,390 metres, the nominated property boasts a wide range of habitats resulting in a high biodiversity. In addition to the valleys, high mountain ridges, steep-sided valleys, and rivers, the nominated property includes many other natural values, such as chestnut forests, scrubby woodland, and steppe habitats. Recent research[3] highlighted the significance of endemism in the Zagros Mountains and suggested that high endemism is correlated with higher elevations and topographic complexity. The ecosystems are fragile and often very isolated and restricted, and therefore prone to impacts from overgrazing and ongoing climate change. This underlines the importance of prioritizing these habitats at higher altitudes for conservation in the Zagros Mountains, likely including those of the nominated property.

Located in the Irano-Anatolian biodiversity hotspot, the nominated property overlaps with an Important Bird Area, the Western Zagros north of Nowsud. It also overlaps with the range of at least one Critically Endangered species on the IUCN Red List of Threatened Species, the Kurdistan Newt (*Neurergus microspilotus*). The nominated property also provides habitat to the Endangered White-headed Duck (*Oxyura leucocephala) and the Egyptian Vulture (Neophron percnopterus*), as well as several Vulnerable species, such as the Lesser White-fronted Goose (*Anser erythropus), Long-fingered Bat (Myotis capaccinii), Leopard (Panthera pardus), and Goitered Gazelle (Gazella subgutturosa). The nomination dossier further highlights the floristic importance of Hawraman/Uramanat. The Zagros area falls within a Vavilov Center of Plant Diversity, and according to research, it has been identified as an area of domestication of the Wild Goat (Capra aegagrus).*

Overall, IUCN considers that the wider region of the Zagros Mountains may boast areas of global significance for biodiversity conservation, potentially including those areas that have been nominated.

In terms of the protection of the nominated property, IUCN notes that existing forest protection programs, national and regional environmental plans, regulations and laws (e.g., Article 45 of the Constitution on Natural Resources, Law on Conservation and Development of Green Space and Prevention of Excessive Logging, Zagros Sustainable Development and Conservation Plan) support the conservation and management of the landscape and natural values. All rangelands and pastures are publicly owned. However, local communities usually manage the rights to use these lands. All national lands such as mountains, forests and natural areas belong to the state, and are under the control of the Natural Resources Organization, Environment Protection Organization and National Forestry, Rangeland and Watershed Management.

IUCN further notes that the nominated property includes an overall action plan with a short-, medium- and long-term perspective. Indicators have been established to monitor the state of conservation of the natural and cultural values.

[3] Noroozi, J., Talebi, A., Doostmohammadi, M. *et al.* Hotspots within a global biodiversity hotspot - areas of endemism are associated with high mountain ranges. *Sci Rep* **8,** 10345 (2018). https://doi.org/10.1038/s41598-018-28504-9; see also Noroozi, J., Talebi, A., Doostmohammadi, M. *et al.* Endemic diversity and distribution of the Iranian vascular flora across phytogeographical regions, biodiversity hotspots and areas of endemism. *Sci Rep* **9,** 12991 (2019). https://doi.org/10.1038/s41598-019-49417-1

In the Integrated Management and Conservation Plan of the nominated property, the Iranian Ministry of Cultural Heritage, Tourism and Handicrafts (IMCHTH) is responsible for overseeing the management and preservation of the area. One of the main objectives of the management is guaranteeing the continued participation of the local communities in the process of managing the nominated property.

However, the IUCN World Heritage Panel notes several threats to the nominated property's natural values, which include climate change, desertification, industrial development, visitor pressure, dams for hydropower or irrigation schemes for agriculture, affecting the natural water cycle, as well as river contamination caused by the use of pesticides and fertilizers, affecting both livelihoods and natural values such as the Critically Endangered Kurdistan Newt (*Neurergus microspilotus*). IUCN further notes that mining reportedly occurs in the nominated property, whilst no information is provided on the extent and impact of this activity. Similarly, IUCN takes note of environmental legislation providing for exploration and exploitation of minerals in the areas specified as national park, national natural heritage, wildlife refuge, and protected area. IUCN recommends this matter should be considered further by ICOMOS in its evaluation, and that any areas of active modern mining should not be included within the boundaries of the nominated property, and to ensure that there are no indirect impacts on the nominated property.

In conclusion, IUCN considers that the nominated property exhibits a potential for more in-depth consideration of its natural values, without prejudice to integrity issues that may exist, and recommends ICOMOS to encourage the State Party to explore further, through upstream consultations with IUCN, if the nominated property and/or further areas in the Zagros Mountains could potentially be nominated under natural criteria.

EUROPE / NORTH AMERICA

RIBEIRA SACRA

SPAIN

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

RIBEIRA SACRA (SPAIN)

IUCN has considered this cultural landscape nomination based on a desk review of the nomination dossier and considered the comments of four external reviewers.

The area is nominated under criteria (iii), (iv) and (v) and consists of four components (*Ribeiras, Heredad de Rocas, Heredad de Montederramo and Heredad de Ferreira de Pantón*), covering a total of 16,973 hectares (16,471 ha, 452 ha, 10 ha, and 40 ha respectively). It includes 78 parishes and 170 settlements in 15 municipalities. The 53,177 ha buffer zone that surrounds the four components follows the layout of the 106 parishes, culturally unified and included in the management process of the area. The land ownership follows a smallholder system.

IUCN notes that several natural values overlap with the nominated property, with two Special Areas of Conservation (SAC) as part of the Natura 2000 Network (Cañón del Sil SAC, fully included in the nominated property, the Os Ancares-O Courel SAC, partly included in the nominated property). Both SACs cover 4,312 ha, i.e. 25% of the nominated property. The nominated cultural landscape also overlaps with a few sites of the Galician Network of Protected Natural Spaces. IUCN further notes that the nominated property overlaps with habitats of several species on the IUCN Red List of Threatened Species, including the Endangered Panicaut Nain Vivipare (*Eryngium viviparum), the Near-threatened Multi-fruited Cryphaea (Dendrocryphaea lamyana) and* Redwing (*Turdus iliacus) as well as the Vulnerable Iberian Frog (Rana iberica*), *.*

IUCN takes note of the assessment of the state of conservation and protection of these natural elements, which has been established for the short- and medium-term. Such indicators are included in the Master Plan of the Natura 2000 Network of Galicia in the framework of European Union Birds and Habitat Directives, implemented through Decree 37/2014 in accordance with the laws on the Conservation of Nature, and on Natural Heritage and Biodiversity.

IUCN notes that development and environmental pressures affect the nominated property. As stated in the nomination dossier, these include the loss of biodiversity as a result of fragmentation, transformation and reduction of natural habitat, and the introduction and expansion of invasive species, such as Acacia and catfish, combined with increasing impacts from climate change. IUCN also notes that the nominated property is affected by ten hydropower plants, including four large ones whose reservoirs modified the climatic characteristics of the valleys. Increasing visitation, and intensified forestry and agriculture add to the pressures on the nominated property. IUCN recommends ICOMOS to assess to what extent the Ribera Sacra Cultural Landscape Management Plan address these threats.

The IUCN World Heritage Panel further noted that some areas associated with the nominated property include active open mining and quarrying that has a significant impact on the landscape, and therefore recommends that this matter should be considered in more detail in ICOMOS' evaluation, including the need to not include any areas of active modern mining within the boundaries of the nominated property, and to ensure that there are no indirect impacts on the nominated property.

IUCN finally notes that the planned nomination of the Ribeira Sacra Serras de Oribio e Courel Biosphere Reserve will include the area of the nominated property. IUCN recommends ICOMOS to verify if the management plans of the nominated property and the Biosphere Reserve are aligned to jointly manage natural and cultural heritage in the region with the support of other instruments being contemplated (e.g. Specific Instrument for Territorial Organisation of the Cultural Landscape of the Ribeira Sacra according to Article 59 of Law 5/2016 of Cultural Heritage of Galicia).

EUROPE / NORTH AMERICA

THE SLATE LANDSCAPE OF NORTHWEST WALES

UNITED KINGDOM

WORLD HERITAGE NOMINATION – IUCN COMMENTS TO ICOMOS

THE SLATE LANDSCAPE OF NORTHWEST WALES (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)

IUCN provides the following comments to ICOMOS based on a review of the nomination dossier by the IUCN World Heritage Panel and three external desk reviews.

According to the nomination file, six separate component parts covering a total of 3,259.01 ha constitute the nominated property, encompassed by a buffer zone of 250,400 ha. Two protection designations underpin the buffer zone and the component parts: Snowdonia National Park (IUCN Protected Area Category V – Protected Landscape/Seascape) and partly overlapping designations as Landscapes of Outstanding Historic Significance of Wales. IUCN observes that the nominated property, designated under criteria (ii), (iv) and (v), includes two entire component parts (4 and 6) and some areas of component parts (1 and 5) within the national park. Component parts 1, 2, 3 and 5 overlap or are adjacent to other international and national nature protected areas designations (e.g. National Nature Reserves (NNRs)).

IUCN notes that the Traeth Lafan, Conwy Bay Important Bird Area (IBA) is located adjacent to component part 1 and the buffer zone of the nominated property. The IBA is important for wintering and passage of wildfowl and waders, including the Eurasian Curlew (*Numenius arquata*) which is listed as Vulnerable on the IUCN Red List of Threatened Species. In addition, several of the component parts and/or their buffer zones overlap with other endangered, vulnerable or near threatened species according to the IUCN Red List, such as the Endangered Green Turtle (*Chelonia mydas).*

The IUCN World Heritage Panel considered the focus of this nomination on the heritage of quarrying and mining, and raises again the question of whether landscapes shaped by extractive industries are conceptually appropriate to consider within the cultural landscape category as defined under the Convention (the wording being: “combined works of nature and of man [people])”, as the interaction that took place between people and nature involved substantial alteration of the environment, resulting in a permanent extraction and loss of natural values. The impacts on the original natural values of the landscape was very significant in the case of this nomination.

IUCN also notes that slate extraction and transport continues to a certain degree as the nomination confirms that some active mineral extraction and processing will continue within the buffer zone in the wider protected area outside the nominated component parts 1, 3 and 5, though not within the Snowdonia National Park. In addition, the nomination file states that component part 1 is subject to limited industrial use, to fishing and leisure activities, including the occasional shipping of slate. Component part 1 being adjacent to above-mentioned IBA, IUCN recommends this matter should be considered further by ICOMOS in its evaluation. IUCN considers that any areas of active modern mining should not be included within the boundaries of the nominated property, and that any secondary impacts, such as transportation of extracted slate, should be managed appropriately in order to reduce any negative impacts on the natural values of overlapping international and national designations, whilst ensuring that there are no indirect impacts on the nominated property.

Lastly, IUCN notes the objective of Snowdonia National Park to conserve and enhance the natural beauty and wildlife of this area. As the national park covers most of the buffer zone, IUCN recommends ICOMOS to assess the conservation objectives of those parts of the buffer zone that are covered by the national park against the conservation objectives of the nominated property, to ascertain whether or not these objectives are compatible with one another.

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