

ASIA / PACIFIC

TRANG AN LANDSCAPE COMPLEX

VIET NAM



WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

TRANG AN LANDSCAPE COMPLEX (VIET NAM) – ID No. 1438

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To defer the nomination.

Key paragraphs of Operational Guidelines:

Paragraph 77: Nominated property has potential to meet World Heritage criteria.

Paragraph 78: Nominated property does not meet integrity or protection and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: 20 March 2013

b) Additional information officially requested from and provided by the State Party: None requested, but following the technical evaluation mission the State Party wrote on 14 October, 2013 advising of amendments to the property's buffer zone. The buffer zone was reduced in area from 6,268 ha to 6,079.6 ha thereby excluding areas in the south of the buffer zone which were subject to cement production and limestone quarrying licenses. The State Party on 26 February 2014 has subsequently provided additional information on a 'voluntary basis' concerning the management of tourism and quarrying/cement production impacts as well as additional information on protection and management.

c) Additional literature consulted: Various sources, including Doi, N.G., Tuan, N.A. and Dang, L.H. (2012) '**Palaeoenvironmental Conditions and Human Adaptation in Trang An**', *Vietnam Archaeology*, Number 7, Vietnam Academy of Social Sciences, Institute of Archaeology, Hanoi. Huong, N.M. and Tuan, N.A. (2012) '**Faunal and Floral Remains from Archaeological Sites in Trang An Area**', *Vietnam Archaeology*, Number 7, Vietnam Academy of Social Sciences, Institute of Archaeology, Hanoi. Huu, N.D., Truong, D.N., Huong, D.T., Thuy, T.T. and Hien, N.V. (2013) '**Stratigraphy of Triassic Sediments in the Trang An Area (Ninh Binh)**', *Journal of Geology, Series B, No 336/2013*, pp 23-35, Hanoi. Rabett, R.J. (2013) '**The Early Human Occupation of Trang An, Vietnam: Archaeological and Paleo-Environmental Evidence**', *Journal of Geology, Series B, No 336/2013*, pp1-7, Hanoi. Su, N.K. (2012) '**Trang An Cave Archaeology Outstanding Cultural and Historical Values**', *Vietnam Archaeology*, Number 7, Vietnam Academy of Social Sciences, Institute of Archaeology, Hanoi. Su, N.K. (2013) '**Cave Archaeology of Trang An The Outstanding Culture-Historical Values**', *Journal of Geology, Series B, No 336/2013*, pp66-81, Hanoi. Thang, D.V., Trung, N.D. and Thuy, T.T. (2013) '**Geomorphological Character and Aesthetic and Heritage Values of Karst Caves in Trang An (Ninh Binh)**', *Journal of Geology, Series B, No 336/2013*, pp82-93, Hanoi. Tuy, P.K., Van, T.T., Trung, N.D. and Dat, N.P. (2013) '**Geomorphology and Outstanding**

Landscape Values of Trang An (Ninh Binh)', *Journal of Geology, Series B, No 336/2013*, pp36-49, Hanoi. Tuyet, D., Trung, N.D., Huu, N.G., Ngoc, D., Dung, D.T., Thuan, T.M. and Thuy, T.T. (2013) '**The Geological and Tectonic Character of Trang An, Ninh, Binh**', *Journal of Geology, Series B, No 336/2013*, pp8-22, Hanoi. Tuyet, D., Dung, D.T., Thuan, T.M. and Thuy, T.T. (2013) '**The Outstanding Universal Values of the Trang An Landscape Complex (Ninh, Binh)**', *Journal of Geology, Series B, No 336/2013*, pp94-102, Hanoi. Van, T.T. (2012) '**Draft Statement of Outstanding Universal Values for Trang An Scenic Complex**', *Vietnam Archaeology*, Number 7, Vietnam Academy of Social Sciences, Institute of Archaeology, Hanoi. Van, T.T., Trung, N.D., Ha, V.V. and Thuy, T.T. (2013) '**Changing Sea Levels and the Occupation by Prehistoric People of Karst Valleys in the Trang An Landscape Complex, Ninh Binh**', *Journal of Geology, Series B, No 336/2013*, pp50-65, Hanoi. Williams, P. (2008) '**World Heritage Caves and Karst**', International Union for the Conservation of Nature, 28 Rue Mauverney, Gland.

d) Consultations: 7 desk reviews received. The mission also met with the Vice Chairman of Ninh Binh Peoples Committee; the Ministry of Culture, Sport and Tourism; representatives from the Vietnam Academy of Social Sciences, Institute of Archaeology; the Director of Trang An Management Board; the Head of International Cooperation, Trang An Management Board; the Secretary General of Vietnam National Commission for UNESCO; a range of expert consultants; the General Director of Xuan Truong Building Business; the Director and Head of Department Tectonic Geomorphology, Vietnam Institute of Geosciences and Mineral Resources; and many other stakeholders.

e) Field Visit: Graeme Worboys with Christophe Sand (ICOMOS), 11-18 August 2013

f) Date of IUCN approval of this report: March 2014

2. SUMMARY OF NATURAL VALUES

The Trang An Landscape Complex (referred to as Trang An in this document) is located within the Socialist Republic of Vietnam some 90 km southeast of Hanoi.

The 6,172 ha nominated property is entirely within Ninh Binh Province. Some 14,000 residents live within the nominated area. The nominated property is encircled by a buffer zone of nearly 6,079.6 ha with some 21,000 residents. Trang An has been nominated as a mixed cultural and natural property and comprises three formally protected areas being the Hoa Lu Ancient Capital; the Trang An-Coc-Bich Dong Scenic Area; and the Hoa Lu Special-Use Primary Forest, as well as other lands which are protected by decree, however, not formally designated.

The landscape complex is the product of deep dissection of relatively pure Lower Triassic limestone (the Dong Giao Formation) that was originally deposited in shallow seas. The karst mountainous area extends in a northwest-southeast direction and includes karst towers rising to 187 metres to the north west, to 198 metres at Trang An and up to 162 metres to the south. The general concordance of peaks between 150 metres and 200 metres reflects the latest tectonic planation phase prior to uplift about 5 million years ago. The tower and karst landscape has been formed in a humid - tropical environment with an average 2000 mm of rain per annum.

Trang An, as part of its erosional sequence, includes a diverse suite of classic positive karst landforms including cones, towers, and ridges together with negative landforms that include depressions (cockpits), interconnected depressions (poljes), and linear valleys. It also includes rockfalls subterranean caverns, speleothems, subterranean rivers, and lakes. A chequerboard pattern of cross-faulting has facilitated the remarkable development of cockpit landforms, some at the erosional base, while others have been raised differentially and are often associated with elevated foot caves or fossil foot caves. Many of these caves have provided shelters used by humans for 32,000 years. Morphological forms known as marine corrosion notches and swamp corrosion notches are found in the Trang An karst environment and provide important evidence for the nature of changing sea levels and tectonic activity. Trang An very clearly illustrates the interaction of karst evolution with changing sea-levels and associated water-table levels.

The geology and geomorphology of Trang An provides an exemplary display of the end stages of tower karst evolution in a humid tropical environment. Geological processes of dissolution, faulting, collapse, runoff and karstification have occurred and are still current. Trang An displays with remarkable clarity the evolutionary development of fengcong karst (where conical hills are separated by intervening cockpits and are interconnected by sharp ridges and saddles) and fenglin karst (where isolated steep sided karst towers stand on an alluvium mantled corrosion plain). The site includes a number of transitional karst features which illustrate this evolution. The fengcong peak-cluster-closed depressions are considered the youngest stage of karst development in the massif, while the oldest are the

isolated towers. According to several reviewers, this fengcong to fenglin geomorphic sequence is a text book example and the best of its kind in the world. The fengcong enclosed depressions (cockpit) landscapes and their associated footcaves are also considered by experts to be the best example of their kind in the world.

A number of cave occupation sites have established an in-situ record of human-environment interaction in the karst landscape that spans from 32,000 BP to the Recent, which forms part of the cultural value of the property and will be evaluated by ICOMOS. The site demonstrates an interaction between people and the recent geological evolution of the landscape as it shifted between continental, insular and coastal settings.

Scenically the nominated property is visually and morphologically spectacular with a diversity of fengcong formations that are up to 198m high sited within a landscape of rainforest and shrub encrusted cone-shaped rock towers, sharp interconnected ridges, saddles, high walls, perched caves, sheer cockpit walls and downslope cascading rock falls. Each karst cockpit is a fortress-wall-surround that stands above the flat, water rich depression floor. Unlike other non-karstic terrain, there is neither an obvious entrance nor exit to the cockpits, nor always a linear valley floor to follow, just containment walls. Access to each cockpit is discrete and achieved via Trang An's subterranean footcave system. Coupled with the natural scenic values is a mix of human landscapes such as colourful paddy fields which add to what the nomination notes as a three dimensional landscape. The rugged, vertical karst features are essentially natural, but the downstream valley bottom lands are human modified agricultural lands.

3. COMPARISONS WITH OTHER AREAS

IUCN has considered the natural values of the property, whilst evaluation of the cultural values will be considered by ICOMOS. The nomination includes a global comparative analysis which is comprehensive and clear, and which IUCN has considered carefully with the benefit of a range of inputs from expert reviewers. The analysis is well-argued and with respect to karst values it strongly references the 2008 IUCN Thematic Study on Caves and Karst. Trang An was compared with a number of existing World Heritage properties inscribed under criterion (vii) for their outstanding karst and scenic values. The analysis assesses World Heritage properties with different karst types in different climatic conditions to assess Trang An's relative values against six of the most comparable World Heritage properties within humid tropical settings. IUCN notes that the nomination argues that the outstanding beauty of the tower karst landscape, its landscape diversity and aesthetics relate to the mix of natural waterways, caverns and human occupation. As such a combination of natural and manmade features has been taken into account which is inconsistent with the interpretation of natural values within criterion (vii)

under the Operational Guidelines. Nevertheless the Trang An Landscape Complex contains a relatively undisturbed “core area” of superlative natural phenomena *and* of exceptional natural beauty and aesthetic importance. This exceptional geomorphology, scenery and natural beauty is quite confined in its total area. It is an outstanding fengcong landscape of karst towers, connecting ridgelines and circular and rainforest and vegetation encrusted, steep-walled cockpit terrain. It is natural and self-protecting, and experience of this area is by emergence from subterranean passages to awe-inspiring karstic landscapes. The high quality fengcong landscape and its associated cockpit and foot cave system is part of the Trang An-Tam Coc-Bich Dong Scenic area and part of the Hoa Lu Special-Use Forest. IUCN notes that immediately outside of this very special core area, modifications to the integrity of the natural landscape and human land use patterns detract from the naturalness of a larger area that may have otherwise have been suitable for inclusion in the nomination.

The assessment of Trang An’s relative values under criterion (viii) is informed by an expert comparative analysis completed by internationally renowned karst specialists in October 2013. This analysis updates the 2008 IUCN Karst Study and assesses the nominated property against 77 other karst areas. Key findings include that Trang An is most comparable to Ha Long Bay in Viet Nam (noting the latter is a drowned karst system) and to the Lijiang River karst area of Guilin in China (included within China’s nomination of the South China Karst Phase II). The analysis finds that, of seven properties inscribed on the World Heritage list for karst values in a humid tropical sub-tropical context, Trang An is the only one with totally autogenic (rainfed) karst, in part due to its small size; Trang An’s compactness provides a relatively uncomplicated, readily visible and comprehensible model of karst evolution; and Trang An has almost certainly the world’s clearest demonstration in the landscape of the final stages of the humid tropical karst geomorphic cycle as it progresses from cone karst to tower karst to base leveled corrosion plain (i.e. from maturity to old age). The Ha Long Bay World Heritage site is part of the same limestone karst system as the nominated property and indeed sits within the overall South China Karst system. Trang An’s past history of sea level fluctuations means it would have resembled Ha Long Bay during former times of inundation. In a sense Trang An completes the erosional sequence of karst which is evident in the South China Karst serial property which is currently subject to a proposed extension by the State Party of China.

The 2013 comparative analysis concludes that *“Trang An can be regarded as a ‘bijou’ site: a relatively small but exquisite geological property that displays more clearly than any other on the World Heritage List the end stages of karst landscape evolution near sea level in a humid tropical environment. Adding to that quality is the excellent condition of the natural forest that clothes the landscape, which ensures that the natural processes operating in the karst can continue unimpeded for the*

foreseeable future. It is a superb model of its kind and outstanding at a global scale. Its exquisite beauty, which clearly qualifies as being of outstanding universal value, is a bonus”.

The complexity of the area gives rise to a variety of geomorphic forms present. This complexity also underpins appreciation of the outstanding scenery [(criterion (vii))] and has created the landscape that has been subject to cultural uses.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

All land within the nominated property is owned by the Socialist Republic of Viet Nam and is controlled by the Ninh Binh Provincial People’s Committee. The Trang An Landscape Complex comprises three areas that receive specific formal protection from the Government. These are the Hoa Lu Ancient Capital, which was inscribed as National Heritage in 1962 and inscribed on the list of Special National Heritage Sites in 2012. The joint Trang-An – Tam Coc-Bich Dong Scenic Area was also inscribed on the list of Special National Heritage at this time. The third area, the Hoa Lu Special Use Forest receives protection from the Ninh Binh Provincial People’s Committee.

Protection for the Trang An – Tam Coc-Bich Dong Scenic Area is achieved through the Law on Cultural Heritage 2001 and the Law on Forest Protection and Development 2004. Protection of the Hoa Lu Special-Use Primary Forest is through the Forest Law alone. The Forest Law identifies specific, prohibited activities; however, the regulations under the law provide for certain ecotourism developments provided they do not impact on biodiversity. IUCN notes that whilst the nominated area is protected, the laws still provide opportunities for what is described as sustainable tourism development. These opportunities could be a threat to the Outstanding Universal Values and guidance for how tourism infrastructure and services will be managed through management planning frameworks and regulations remains unclear.

Several areas within the nominated boundary are not included within these three designated areas (above) but are protected through national decrees consistent with the legal mandate given to the Trang An Landscape Complex Management Board on its establishment in 2012.

A 70 year lease has been provided by the Ninh Binh Provincial People’s Committee over the 3,000 hectare Trang An – Tam Coc – Bich Dong Scenic Landscape within the nominated property. The lease has been awarded to a private business, the Xuan Truong Enterprise, and is for the management of protection, conservation, tourist and promotional activities. More specifically the lease delegates the management of the

tourism services to this private sector company. A number of other private tourist resort operations exist within the nominated property. Lessees are subject to the objectives and regulations of the property Management Plan.

IUCN has concerns relating to the latitude afforded by current laws in permitting tourism and other infrastructure development as well as the protection status of areas outside of formally designated protected areas. IUCN therefore considers that the legal protection status of the nominated property does not meet the requirements of the Operational Guidelines.

4.2 Boundaries

All of the key elements of a fengcong and fenglin Karst landscape are present within the nominated property and the natural processes of Karst development are on-going. However, whilst the nominated property (6,172 ha) is of sufficient size to include all of the values that underpin World Heritage criteria (vii) and (viii), the boundary as selected is not the most appropriate in relation to natural criteria. From the perspective of criteria (vii) and (viii), the nominated boundary for the World Heritage property includes significant areas of development and human impact that detract from a case for natural values. For example the eastern boundary encompasses new road developments, tunnel developments, tourism development and a major car park at Trang An; major paddy field infill works that provide for re-settlement housing developments; major areas for cultural landscaping (not restoration); and, urban village development. Similar inappropriate commercial, rural lands and villages are included within the southern and northern boundaries. IUCN notes that the boundaries will need consideration in relation also to considerations of cultural value, as evaluated by ICOMOS.

A buffer zone surrounds the nominated property. IUCN supports the adjustments to the buffer zone boundary made to exclude several cement and limestone quarrying license areas. The buffer zone includes a mix of agricultural lands, villages, roads, utilities and some natural lands. Some 21,000 people live within this area. Planning emphasis aims to control impactful development, however, this will be very challenging given the potential for tourism related developments and urbanization within areas surrounding the nominated property.

IUCN has concerns regarding the configuration of the nomination boundary, which includes inappropriate areas for listing. IUCN therefore considers that the boundaries of the nominated property do not meet the requirements of the Operational Guidelines for a listing under natural criteria.

4.3 Management

The Trang An Landscape Complex has a Management Plan. A Master Plan for the Hoa Lu Ancient Capital also exists and the nomination document identifies that a Master Plan will be developed for the entire nominated area consistent with legislation. The State Party advises in February 2014 that a draft tourism management plan is in preparation. The State Party further advises that the (overview) “Management Plan” for the nominated property has been prepared consistent with UNESCO requirements, while the (more detailed) “Master Plan” has yet to be developed. The 2013 Management Plan has been prepared to strictly implement the spirit of the World Heritage Convention. It will be revised every five years. The Plan identifies a clear purpose, it reinforces the importance of protecting the Outstanding Universal Value; it establishes clear objectives of management; identifies threats and introduces management zoning and actions to help protect the Outstanding Universal Value.

The Management Plan provides a “management zoning plan” which identifies five zones which are cross-cutting to the protection tenures of the property. IUCN notes a number of inaccuracies in the zoning system principally that the mapped zones do not match the on-ground reality. Land use and activities are at odds with the zoning system, for example areas delineated as Tourism Development Zones were permitting developments in addition to tourism infrastructure including landscaping and residential housing development.

The Trang An Landscape Complex Management Board was established in 2012 by the Ninh Binh Provincial People’s Committee specifically to manage the nominated Landscape Complex and the buffer zone. The Board is legally mandated and co-ordinates the participation of the Ministries of Government, the National Commission for UNESCO, the National Council of Cultural Heritage, Research Institutes, City and District Authorities, Peoples Committee of Communes and the Xuong Trong Enterprise (and other Companies). The functions, accountability and strategic direction of the Board could be improved further to help protect the nominated property. There is no adequate vision statement for the protection of the possible outstanding universal value of Trang An, nor is there a specific Board mandate for the on-ground protection, conservation and restoration management which operates beyond general obligations to implement the Master Plan. As noted elsewhere tourism management is largely delegated through commercial leases.

The Board aspires for enhanced capacity. It has five departments with 57 staff and there are proposals to increase this staff number to 71. An additional 7 rangers manage the Hoa Lu Special Use Forest. Tourism management for the Trang An – Tam Coc-Bich Dong area is delegated to the Xuan Truong Enterprise and for its Trang An site. Lessee staffing is therefore supplemented by 5 ticket office staff, 11 business team

staff, 15 guards/rangers (for property security safety and maintenance) and 1,500 tourist boat operators that have been recruited locally.

The average budget for the Trang An Management Complex Board is equivalent to c.500,000 USD per annum and this is considered adequate. The Board, in recent years, has received the benefit of major capital investment funding in the order of c.7 million USD, but this high budget allocation period is coming to an end. Tourism revenue is also received from ticket sales.

Several other concerns have been identified with respect to management planning. These include the need to reinforce that the protection of the nominated property must have primacy in considering any permissible activities and developments. Linked to this is the need to revise the list of permissible activities within the nominated property as many are inappropriate such as road, utilities and infrastructure developments. There is also a need to reinforce the accountabilities for tourism lessees with respect to the protection of features of possible outstanding universal value. Timetables should be specified for the enactment of regulations to control infrastructure development and urbanization in and around the nominated property, and for the preparation of the tourism plan. IUCN also considers greater clarity is required regarding the relationship between the various planning instruments in effect for the nominated property.

In summary, IUCN has a series of concerns regarding management planning and believes the significant threat posed by tourism growth warrants the urgent preparation and completion of the tourism plan. IUCN therefore considers that the management of the property does not meet the requirements of the Operational Guidelines.

4.4 Community

The governance arrangements for the Trang An Landscape Complex are thorough and include all levels from the community to the highest levels of Government. Input to the management of the Landscape Complex is through local communes, the recently established Board and the Ninh Binh Provincial People's Committee. Opportunities for input include the development of the Management Plan and its revision every five years. Local people were involved in the development of the Management Plan for the Landscape Complex.

A survey of 500 households in the nominated property and the buffer zone identified that 90% of people surveyed were informed and supportive of the World Heritage nomination. A public meeting dealing with the World Heritage nomination at the Trang An Visitor Centre provided opportunities for comment by the more than 200 participants from the local area. All comments raised were supportive of World Heritage for the nominated property. Most comments focused on the benefits of enhanced tourism that would be linked to World Heritage status. The State Party has undertaken a

programme of community consultation on the World Heritage nomination. There is recognition that more work is needed to broaden the awareness of heritage conservation among local people and a major educational program is planned.

The land is owned by the Socialist Republic of Viet Nam and is controlled by the Ninh Binh Provincial People's Committee. People live within the landscape complex, they undertake agriculture that includes growing rice, raising livestock (ducks) and fishing. Many locals are directly involved in the nominated property as boat owners and operators, maintenance workers, security workers and many derive income by providing accommodation, supplying food and selling handicrafts. Traditional festivals and cultural events are encouraged within the property.

4.5 Threats

The remaining core natural area of the nominated property is still in a substantially natural condition. There have been considerable changes to other areas of the nominated property from highway development, village development, landscaping developments, car park construction, tourism developments and the presence of communication infrastructure and utilities. Agriculture dominates large parts of the property. Restoration of some disturbed areas is considered possible.

The greatest threat to the nominated property is from inadequately planned and managed tourism along with its associated infrastructure support and service provision developments. Over a million visitors visited Trang An in 2011 and 30% of these were international visitors. An estimated 5,000 people work in the tourism industry, and seasonally, there is an additional 5,000. IUCN was informed that an estimated \$US 7.1 million in tourism revenue is generated annually. The target growth for tourism in 2020 is for 2 million visitors. For the entire nominated property, there are a total of 2,600 tourism boats solely operated by local communities, with 1,500 at Trang An, 1,000 at Tam Coc, 50 at Bich Dong and 50 at the Milky Way Grotto.

New tourism infrastructure and associated developments observed leading from Ninh Binh City and to the Trang An Landscape Complex reflect that tourism is a key economic driver for the local area. Some of these changes have included a new dual highway; a major gateway; a landscaped highway route; the landscaping-infilling of paddy fields; a new high quality tourism Visitor Centre and an associated large car park. However, as noted above, the lack of a tourism plan leaves the property vulnerable to overuse and inappropriate development potentially jeopardizing values. The completion of the plan (that helps protect the Outstanding Universal Value) prior to consideration of World Heritage inscription is considered essential. The Plan would be directly linked to the protection of the Outstanding Universal Value as its primary objective, and its governance requirements would guarantee its

authority and primacy for protection of the property. Without these safeguards there is a possibility that premature World Heritage listing could add to unsustainable pressures. IUCN welcomes the State Party advice of February 2014 that a draft tourism management plan is in preparation. Addressing the control and limitation of tourism within a sustainable maximum number, and with a priority for conservation, is considered a pre-requisite before inscription on the World Heritage List could be considered.

Limestone quarrying for cement or for ornamental sculptures is a local industry based on the local high quality Lower Triassic limestone karst exposures. Quarry areas have been excluded from the nominated property and the buffer zone boundary has recently been amended to ensure any possibility of quarrying in the buffer zone is also excluded, although it appears very minor quarrying may take place within the Prison Complex within the buffer zone. The State Party has advised of a series of measures to minimise the impacts of limestone quarrying and cement production in the south of the Trang An Landscape Complex buffer zone.

Four rivers surround the proposed property with the Hoang Long River to the north, Chanh River to the east, He River to the south and the Ben Dang River to the south. Any possibility of external water-based pollution through an interconnected system of foot caves is removed or minimized due to the net positive outflow of water from the proposed property. Three rivers, the Sao Khe, the Ngo Dong and the Den Voi flow out from the Trang An Landscape complex.

Active dredging work is undertaken within the nominated property for maintenance purposes. Advice has been provided that this does not impact the natural water flow regimes, water quality or water levels. Given this dredging may occur across the nominated property and that it may impact the Outstanding Universal Value, dredging actions need to be the subject of a detailed Environmental Impact Assessment.

The Management Plan for the Landscape complex recognizes opportunities for growth in villages, for the immediate resettlement of people within the nominated area and a future that includes the expansion of urban areas within the proposed property. An agricultural landscape of paddy fields and rural dwellings provides an aesthetic landscape foreground which is sympathetic to the dramatic and precipitous fengcong and fenglin landscape elements; however an urbanized landscape is considered a threat to these landscapes. New tourism developments are also considered a threat to these rural and natural values.

Extensive infilling of paddy fields and ornamental landscaping work is being undertaken in the vicinity of the new Trang An Visitor Centre and especially between the Ninh Binh City and Trang An. It is indicated that this transformed area will be used for resettlement of people

displaced from elsewhere within the property and will be urbanized.

Two introduced animal species were identified by the nomination report: one a snail, the other being semi-wild goats. Natural karst evolutionary processes are dependent on the local natural ecosystems and natural processes and the impact of any introduced species needs to be clearly understood and appropriate action taken to minimize any threats to the Outstanding Universal Value. Domestic goats in particular are considered to be a threat to natural processes on the nominated property including the threatened *Chinese Seral*.

In conclusion, for the reasons outlined above, IUCN considers that the integrity, protection and management of the property do not meet the requirements of the Operational Guidelines.

5. ADDITIONAL COMMENTS

5.1 Consideration in relation to serial properties

Trang An has not previously been nominated, however it is part of the South China Karst geo-tectonic region which extends beyond China. It is therefore worth recalling the IUCN evaluation of South China Karst Phase 1 (2007) which noted that *“One area of reservation in relation to the current selection of properties across the three anticipated phases of the nomination is that the South China Karst region extends into Viet Nam, and that the significant karst landscape in North Viet Nam is coterminous with the Guangxi Karst. The State Party of China has confirmed its willingness to work with Viet Nam to examine possible transnational cooperation.”* IUCN recommended that the State Party of China consider transnational aspects with Viet Nam in any subsequent phases of nomination. Although not nominated as a transnational part of the South China Karst serial property, the Trang An Landscape Complex should be considered in this context.

Given there is already an ongoing process of extension of the South China Karst World Heritage Site in China, it appears to be difficult to insist on Trang An being directly connected to that process, however it would seem appropriate for links to be made as far as possible. What appears to be more appropriate to recommend is that Viet Nam might consider a parallel process to the Chinese South China Karst nomination, where a number of key karst sites have been nominated as part of a coordinated process, in a national serial approach. Noting that a key comparison for Trang An is the site of Ha Long Bay, the relationships to Ha Long Bay and the adjoining Cat Ba Archipelago would seem to warrant further consideration, notwithstanding the challenges of Trang An being nominated as a mixed site.

6. APPLICATION OF CRITERIA

Trang An Landscape Complex has been nominated under natural criteria (vii) and (viii), as well as under cultural criteria which will be evaluated by ICOMOS.

Criterion (vii): Superlative natural phenomenon or natural beauty and aesthetic importance

Trang An incorporates a footcave-enclosed depression (cockpit) landscape that is considered by experts to be the best example of its kind in the world. The nominated property encompasses a visually spectacular landscape with its enclosed cockpit depressions, and their vertical, high walls, rising to over 150m, cliffs, rockfalls, karst cones and karst towers. The human response to this landscape is multi-sensory, heightened by the aesthetics of colour of the enclosed depressions contrasted with dark green tropical rainforests, grey-white exposed limestone rocks and cliffs, darker brown coloured cockpit waters and the brilliant blue of the sky. Travelling in four-person sampan boats, visitors to the site experience the visual impact of an “arrival” at individual enclosed depressions accessed through the natural cave systems that connect the cockpits. This footcave boat experience stimulates the senses through the daylight to dark transition beyond a cave entrance; narrow dark passages with low ceilings, speleothems and cave formation features; moving water and the soft sounds of oar and water; and finally a return to bright daylight as the silhouette of a footcave exit is approached. At each exit, there is a heightened sense of anticipation as a new cockpit experience is unveiled.

The nominated property as presented includes inappropriate areas of development and human activity, and integrity, protection and management issues need to be address. However, a natural area of fengcong dominated Karst in the inner part of the nominated property is considered to have potential to meet criterion (vii).

IUCN concludes that the nominated property has potential to meet this criterion.

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

Trang An includes the range of karst solution evidence for the end point of karst evolution under a humid tropical environment including the fengcong features and isolated fenglin karst tower formations that are considered by experts to be the best evidence of their kind in the world. Trang An combines, within a small area, evidence of karst form, process, and primary and secondary controls. This includes fengcong and fenglin landforms of international significance, evidence of primary controls that influence their landform development processes such as structure and lithology; evidence of secondary controls such as fault crush zones and marine transgressions; evidence of the actual processes and landscapes in a natural condition that are contributing to on-going natural processes (such as the

rainforest environments and water tables within cockpits) and a variety of landforms as a consequence of these processes. The core natural area of the nominated property includes a range of outstanding fengcong karst solution landforms that includes enclosed depressions (cockpits), cones, towers, bell shaped towers, sharp ridges, saddles, fault influenced zigzag valleys, fault influenced linear valleys, karren, caves, foot caves, and boulder fields. The nominated area includes important variations of these landscape forms such as tectonically raised cockpits and evidence of sea level fluctuations. In addition Trang An reputedly includes the best developed set of footcaves known for the world.

The nominated property as presented includes inappropriate areas of development and human activity, and integrity, protection and management issues need to be address. However, a natural area of fengcong dominated karst in the inner part of the nominated property is considered to have potential to meet criterion (viii).

IUCN concludes that the nominated property has potential to meet this criterion.

7. RECOMMENDATIONS

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

The World Heritage Committee,

1. Having examined Documents WHC-14/38.COM/8B and WHC-14/38.COM/INF.8B2;
2. Defers the nomination of the **Trang An Landscape Complex (Viet Nam)**, in relation to natural criteria, taking note of the potential for this property to meet criteria (vii) and (viii), in order to allow the State Party to:
 - a) prepare a revised World Heritage nomination with a boundary that better reflects the areas and attributes of possible Outstanding Universal Value and an appropriate surrounding buffer zone;
 - b) ensure adequate legal protection for the revised nomination including the designation of any areas within the property as protected areas;
 - c) prepare a revised and upgraded Management Plan and Zoning Plan, that recognises the Outstanding Universal Value of the property and ensures that the protection is aligned and integrated into provincial planning;
 - d) finalise, as part of the Management Plan, an effective, well enforced, and adequately resourced tourism management sub-plan specifying regulations that will ensure full protection of the natural features of the property, and that will establish daily, seasonal and annual limits to visitor numbers based on ecologically sustainable use criteria as well as a social carrying capacity based on quiet enjoyment of the property.

3. Commends the State Party, and the range of stakeholders in the nominated property for their commitment to the preparation of this nomination, and encourages the State Party to resubmit the nomination, with appropriate assistance from the Advisory Bodies, consistent with the Committee's requests for greater upstream support to nominations.

4. Encourages the State Party with the support of the UNESCO World Heritage Centre and Advisory Bodies to review its Tentative List of World Heritage properties to ensure the most appropriate properties are identified and brought forward for nomination, and that opportunities for serial sites and extensions are considered as options for future nominations.

Map 1: Nominated property location



Map 2: Nominated property and revised buffer zone

