
WORLD HERITAGE RENOMINATION – IUCN TECHNICAL EVALUATION

HA LONG BAY (VIETNAM)

1. DOCUMENTATION

- i) **IUCN/WCMC Data Sheet:** (2 references).
- ii) **Additional Literature Consulted:** Nguyen Thi Son. 1997. **How can Tourism and National Parks Exist Symbiotically? Cat Ba Island, Vietnam;** Tran Duc Thanh. 1998. **Geological History of Ha Long Bay;** Vermeulen, J. and T. Whitten. 1998. **Land and Freshwater Molluscs of the karst regions ENE of Haiphong and the Cuc Phong National Park, northern Vietnam.** unpublished report; Vermeulen, J. and T. Whitten. 1999. **Biodiversity and Cultural Property in the Management of Limestone Resources;** Vietnam National Commission for UNESCO. 2000. **Draft feasibility report for a project to develop Ha Long Bay as an ecomuseum;** Waltham, T. 1998. **Limestone Karst of Ha Long Bay, Vietnam, Engineering Geology Report;** Watson, J. *et. al.* 1997. **Guidelines for Cave and Karst Protection,** IUCN.
- iii) **Consultations:** 3 external reviewers, Senior officers of UNESCO (Vietnam), Vietnam National Committee for UNESCO, Department of Conservation and Museology, Fauna and Flora International, World Bank, and Quang Ninh Provincial People's Committee. Park staff and Senior Officials from the Management Department of Ha Long Bay.
- iv) **Field Visit:** Elery Hamilton-Smith, March, 2000. Field visits prior to initial listing in 1994: Jim Thorsell, March/April 1993, and Jacques Lecoup, November, 1994.

2. SUMMARY OF NATURAL VALUES

Ha Long Bay is located within the Quang Ninh Province of Vietnam. Situated in the Gulf of Tonkin the site includes some 1600 islands and islets forming a spectacular seascape of limestone pillars. Because of their precipitous nature, most of the islands are uninhabited and relatively unaffected by human influence.

In recognition of its remarkable scenic quality, Ha Long Bay was inscribed as a natural World Heritage site in 1994 under criterion (iii). The inscribed site covers an area of 434sq. kms and this renomination seeks to have the current World Heritage site inscribed under criterion (i) in addition to the existing listing under criterion (iii).

The values of Ha Long Bay, which resulted in its 1994 inscription under criterion (iii), are well documented and will not be elaborated here.

The geomorphology of Ha Long Bay is known as a drowned karst landscape due to the exceptional combination of its limestone karst features which have been subject to repeated regression and transgression of the sea over geological time. The limestones of Ha Long Bay have been eroded into a mature landscape of fengcong (clusters of conical peaks) and fenglin (isolated tower features) karst features, modified by sea invasion at a later stage.

The smaller islands are fenglin towers of 50m to 100m high with height to width ratios up to about 6. Many have vertical walls on all or most sides and these continue to evolve by rock falls and large slab failures. The larger islands contain the conical hills of fengcong karst, the summits of which average 100m above sea level with some exceeding 200m.

Marine invasion of Ha Long Bay has added an extra element to the normal process of lateral undercutting of the limestone towers and islands. The most conspicuous feature being the main notch cut into the entire rocky coastline. Notches are a feature of limestone cliffs worldwide, but those of Ha Long Bay are exceptionally well developed and, at many sites, extend into arches and caves. This process of undercutting and subsequent erosion

maintain the steep faces of the fenglin karst towers and thereby perpetuates the spectacular nature of the landscape.

A distinctive feature of Ha Long Bay is the abundance of lakes within the larger limestone islands: Dau Be Island, for example, has six enclosed lakes.

Extensive limestone caves represent another important feature of Ha Long Bay, with three main types able to be identified: old phreatic caves formed below the water table of the time; old karstic foot caves formed by lateral undercutting of cliffs at base level; and marine notch caves formed at sea level where rock structures are powerfully eroded and eventually reduced to a wave cut platform.

In summary, Ha Long Bay possesses a tremendous diversity of caves and other landforms which derive from the unusual geomorphological process of marine invaded tower karst. These areas provide a unique and extensive reservoir of data for the future understanding of geoclimatic history and the nature of karst processes in a complex environment.

3. COMPARISON WITH OTHER AREAS

The geomorphological values of Ha Long Bay are the key values to be compared with other sites in assessing the merits of this renomination under criterion (i).

The eastern Adriatic, Greek and Aegean coasts of Turkey provide other outstanding examples of tower karst although not of drowned tower karst, which is a style of karst landscape found mainly in the tropics and subtropics.

Ha Long Bay is not unique in SE Asia for being a drowned tower karst – other sites where such a phenomenon occurs include the Mergui archipelago off the Andaman coast of Burma; in northern Malaysia (notably Langkawi); in Thailand at Koh Maeku in Ang Thong National Park, and Changwat Surat Thani and, most impressively, in the area of Phangnga and Ao Luk on the Andaman coast of peninsular Thailand. Other karst areas include Ninh Binh in Vietnam, Yangshou and Wulingyuan in China, however, the great extent of the Ha Long Bay tower karst and the richness of its forms (both current and ‘fossil’ forms) set it apart from all comparable areas of drowned tower karst in SE Asia.

Apart from Ha Long Bay there are no equivalent sites on the World Heritage List, either in terms of steep tower karst in general or drowned tower karst in particular.

In summary Ha Long Bay is considered one of the most extensive and best-developed areas of tower karst in the world. What distinguishes this site from others is the process of marine invasion and, whilst the phenomenon of drowned tropical tower karst is known elsewhere in the world, Ha Long Bay provides by far the best example in the world.

4. INTEGRITY

The Bureau’s attention is drawn to the State of Conservation (SOC) Report submitted by IUCN to the World Heritage Centre which reports on a range of integrity issues for the Ha Long Bay World Heritage site.

Systematic management of the area has been instituted only since inscription as a World Heritage site and, while progress has been made, there is a continuing task to improve the integrity and quality of the environment. While the marine environment faces continuing challenges addressed in the SOC Report, the site’s scenic features, geomorphology and cultural heritage are all relatively intact. Although some minor threats to the quality of the area exist at present, including problems of littering, these do not prejudice the inscription of the site on the basis of its geological values.

Protective legislation at both national and provincial levels is adequate and will be further strengthened by the new national legislation for protection of natural and cultural heritage which is currently being prepared. However, legislation relating to development projects is not so clear and a number of proposed new developments could jeopardise long-term integrity of the site.

In addition, there are significant problems occurring below sea level. These have damaging geomorphic impacts, including the deposition of silt and other solid waste, pollution of the water and the introduction of invasive species.

Cat Ba Island and the islands of Bai Tu Long Bay provide extensive opportunities for the progressive expansion of the tourism industry and the necessary development of the aquaculture industry. Thus, with the current boundaries, these areas not only provide a buffer zone for the World Heritage area, but serve valuable complementary functions in their own right. There has been considerable research, policy development and action aimed at developing an appropriate balance between conservation and development throughout the region as a whole. Accordingly, the relevant government authorities may care to investigate and consider the potential value of seeking biosphere reserve status for the whole of the defined National Protection Area.

The renomination site meets all related “conditions of integrity” as described in the Operational Guidelines paragraph 44(b).

5. OTHER COMMENTS

The quality of tourism management is steadily improving. In particular, the sensitivity, aesthetic quality and attention to public safety of infrastructure such as pathways, steps and board walks is of a high standard. Every effort is being made to ensure that tourism is in keeping with the primary mandate for conservation.

The proposed recognition of the geomorphic values at World Heritage level should imply the highest standard of management and presentation of the site to visitors. Consistent with this a programme of measures to increase the understanding and appreciation of geomorphological processes and the management requirements for karst landforms should be put in place. There is also a clear need to build the capacity of staff in relation to cave and karst interpretation.

6. APPLICATION OF WORLD HERITAGE CRITERIA

This site was renominated under criterion (i). It has already been inscribed on the World Heritage List under criterion (iii).

The comparative assessment shows that Ha Long Bay is the most extensive and best example of marine invaded tower karst known and one of the most important areas of fengcong and fenglin karst in the world.

Although the site contains geomorphological features duplicated elsewhere, it demonstrates these better than any other area in the world. Furthermore, its size and area provide sufficient integrity for these large scale geomorphic processes to operate unhindered. Although the site has a long history of human use, it is not seriously degraded and retains a high level of naturalness. Finally, the site exhibits a wide range of diversity of natural features.

Ha Long Bay is considered to possess outstanding universal value as the most complete and extensive example of its type in the world.

7. RECOMMENDATION

The Bureau recommended to the Committee that Ha Long Bay be **inscribed** on the World Heritage List under natural criterion (i) in addition to the site’s existing 1994 listing under criterion (iii). The Bureau noted that the site is the most extensive and best known example of marine invaded tower karst and one of the most important areas of fengcong and fenglin karst in the world. The size of the area provides sufficient integrity for these large-scale geomorphic processes to operate unhindered.

The Bureau commended the Ha Long Bay Management Department on the improvement in management of the renominated area.

The Bureau encouraged the State Party to expedite a programme to increase visitor understanding of cave and karst geomorphological processes and to improve staff capacity in these areas.



Map 1: Location Map – Ha Long Bay



Map 2: Site Map – Ha Long Bay