Ha Long Bay - environmentalism and "sacrifice caves"

Tim Moore

In 2010, the older of my two sons was to complete his secondary schooling. In order to stimulate his study habits, I made him an offer. The offer was this:

> *If you apply yourself diligently, next year I'll take you for a week to anywhere you choose within about 11 hours flying time from Sydney.*

His response was to say:

> *You're on! I'd like to go to Hanoi.*

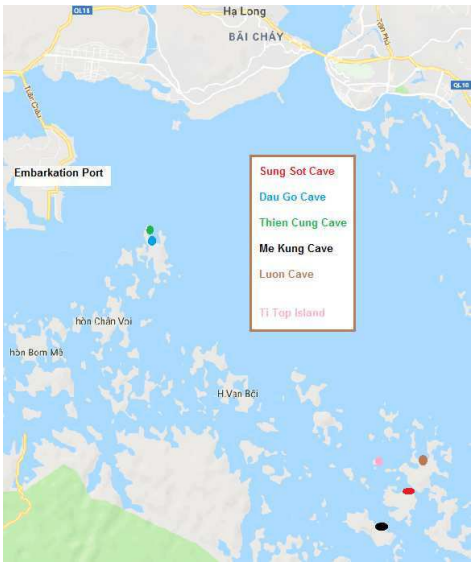
Anticipating that he would keep his end of the bargain (as he subsequently did), I set about preparation for the trip. One element I was determined to build into the itinerary was an overnight cruise on Ha Long Bay. This I arranged through the hotel in Hanoi which had been recommended to me by my brother (who had visited Hanoi on a number of occasions as part of Australia's foreign aid program in supporting judicial capacity building within the Vietnamese judicial system).

Our father/son bonding holiday went off without a hitch, including the arrangements for the overnight cruise on Ha Long Bay.

Fast forward to 2018.

My wife and I have been taking our teenage children to language school on Bali for the past five years during their midyear school vacation (they attend a school where studying Bahasa is compulsory until the end of Year 8). I thought it would be a good idea to continue on for a father/son bonding week with my younger son. I asked him if he, too, would like to visit Hanoi (with us retracing my steps with his brother – including an overnight cruise on Ha Long Bay). Unsurprisingly, he went for it like the proverbial rat up the proverbial drainpipe!

Ha Long Bay was inscribed on the World Heritage Register in 1994. It encompasses 755 islands over 434 square kilometres. In 2014, the Cat Ba Archipelago was added but is not engaged for this article.



The map gives an idea of the size and distribution of the many islands in the portion of Ha Long Bay closest to the embarkation harbour and used for tourist cruising.

However, by the time you reach this point in my travelogue, dear reader, you may be wondering what in heaven's name does this have to do with caves?

For now, it is sufficient to note that there are, as our guide on our cruise junk advised me, significantly more than 400 individual, substantive known caves spread across the Ha Long Bay islands with some of the larger islands having multiple significant caves located on them. The vast majority of these caves are, at best, only partially explored. A small number of these caves have been made accessible for use as guided caves for the tourism industry. It is these guided caves (and the pressures on them) that triggered me to write this article about environmental management changes now mandated for the tourism industry operating on Ha Long Bay.

The trip was a success, but there was a marked contrast between the two visits to Ha Long Bay, including the visit, on each occasion, to Sung Sot Cave on Bo Hon island. This article discusses the environmental changes adopted by the Vietnamese government in managing the tourism industry impacts on Ha Long Bay and the contemporary understanding of the role that Sung Sot Cave (and the other tourist caves on islands within Ha Long Bay) play as "sacrifice caves", serving the increasing demands of the tourism industry.

On both occasions, the visit to Ha Long Bay commenced with a four hour bus trip through the Vietnamese countryside. There had been significant improvements to parts of the road network during the period between the two visits. However, there was no improvement in the apparently suicidal driving habits of the riders of the many thousand motor scooters we observed both in the towns and villages and on the open road.

Unlike during my first visit, the guide on the bus (who turned out not to be the guide accompanying us on the cruise) spoke of the need that had been identified in recent years to take steps to protect the environment of Ha Long Bay from the increasing pressures of the rising demand of the tourism industry. Although he did not give any comparative figures, the information about contemporary cruising demand was extraordinary. At the present time, there are over 500 cruise boats operating on the Bay and out amongst the limestone outcrops that are its attraction.

These boats are in two quite distinct and differing configurations. First, there are smaller boats designed to accommodate single day visitation. My observation was that these appeared to have capacities ranging from 20 to 40 visitors. From what was able to be seen on the water, a very high proportion of these visitors appeared to be local tourists (perhaps as a result of increasing Vietnamese affluence from the now more open national economy).

The second class of vessels were those such as the junk upon which we were to embark. These vessels had two or three decks of accommodation. They had indoor and outdoor observation areas; dining and kitchen facilities; and crew accommodation spaces. These vessels ranged in size from our comparatively modest one (with 12 cabins across two levels) to quite large vessels that appeared to have 40 or more cabins across three levels. Unsurprisingly, all prices for foreign tourists were in US dollars and ranged from the US$160 per head for an overnight cruise (on a more humble vessel such as our own) to cruises of two or three nights with prices of up to US$1000 per head on the more swanky vessels.

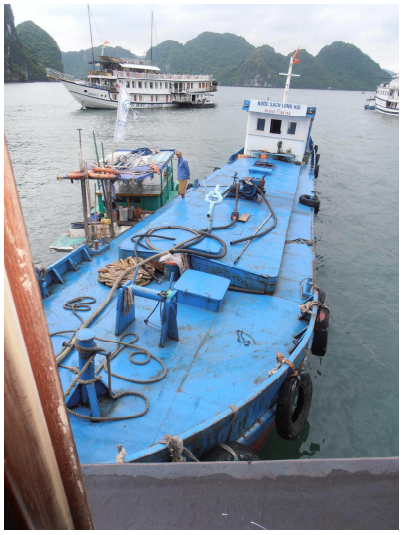
The more than 500 vessels in total are plying this trade out of a port on Tuan Chau Island connected to the mainland by a causeway and located some 15 kilometres away from Ha Long City proper. This embarkation port itself showed the nature of the increasing tourism pressures as there were at least 10 multi-storey hotels under construction along the road which ran around the shores of this harbour.

The guide on our junk informed us that, at the present time, there were about 500,000 tourists per year cruising on Ha Long Bay and that this number continued to increase. This, he said, had given rise to an understanding in government that protective measures had needed to be introduced and an acceptance by tour operators of the necessity of doing so.

The embarkation and commencement of the outward cruise differed little on this occasion. From what I had observed when travelling with my older son on my earlier visit, the only observable change was the forest of cranes above the skyline of Ha Long City, reflecting the number of completed and under construction 10 storey or so buildings (also reflective of accommodation demand from the booming tourism industry).

There are two operational aspects of the vessels that stay out overnight that have changed for the better.

First, each vessel has now been assigned a designated night-time mooring location. In the past, the vessels were free to choose a location anywhere amongst the islands (limited only by the sailing time back to port). Although each operator had its own favourite overnight mooring place, these could vary unpredictably. The fact that these are now organised with appropriate privacy separations between the various vessels (but nonetheless at identified locations) enables greater efficiency for the operation of the pump-out barge which collects the grey and black water from the holding tanks on each of the vessels. In the past, the activity of this barge (**picture above right**) was on a somewhat haphazard basis with the barge crew needing to hunt for the vessels to do the pump-out. Now, my guide told me, these arrangements are on a strict appointment basis so that there is a known roster of where and when pump-out will take place. This, I was told, significantly lessens the risk of accidental discharge because a vessel might be overlooked (as had been the case in the past haphazard overnight mooring regime).



The second change related to regulation of swimming by tourists. During my earlier visit, our vessel stopped to permit the guests to go swimming. The location for doing this was randomly selected with the vessel dropping anchor at a convenient time and location. The guests jumped from the embarkation door; swam around in the vicinity of the vessel; and climbed back on board using a stainless steel swimming pool style ladder. These activities are now regulated with a wharf having been constructed on one of the islands (named Ti Top Island, the Vietnamese pronunciation of the name of a Russian Air Force officer, General Titov (**picture below**), who had been lent by the Soviet Union to "Uncle Ho" in the late 1960s to assist train the Vietnamese Air Force in their "glorious struggle against the American imperialists").

This island has a sandy beach and organised disembarkation/embarkation wharf facilities to be used by tenders from the larger vessels or directly by smaller ones. There are changing and ablution facilities and the beach is protected by a netted enclosure approximately 100 m long and extending some 30 or so metres into the Bay. When we were there, several hundred swimmers were visible at any one time - with a regular turnover as the tenders came and went.

My guide informed me that these arrangements had had a positive impact in two respects. First, the organising of human and litter waste collection had limited this aspect of tourism's impact. Second, the fact that there was now a more confined area where boats would moor for such activities meant (as was also the case with the designation of the overnight mooring locations) that there was confinement of the potential damage to the floor of the Bay itself.

Indeed, as a consequence of the increasing pressures of the tourism industry, this facility at Ti Top Island was, itself, becoming overcrowded and a new facility was under construction to utilise a beach on another island a kilometre or so away. We were able to observe, during our passage back to harbour, that construction of this new facility was well advanced (see photo below). When it is operational, however, it will lack the "attraction" of a statue of the General!

Enough digression, I now turn to the caves.

First, changes have been made to where tourists are permitted to disembark from their vessel to go kayaking. In the past, such activities took place at a wide range of locations. At one of these, depending on the tide (the tidal range being some 2 m), it was possible to kayak into Luon cave. My guide advised me that this was still permitted, but was now controlled so that entry did not happen at higher points of the tide cycle when there was a greater risk of damage to the formations from paddle strike.

However, the major change concerning cave impacts arose, I was told, from a better understanding of the impact that tourist groups had on the various show caves to which access steps and paths had been organised and through which tour groups could traverse.

For Sung Sot Cave, there are formalised and well organised facilities with separate arrival and departure wharves and a one-way circulation pattern up to the cave and then down to the embarkation wharf.

The visitation process has evolved by better sequencing management of groups from the various vessels. This has meant that, inside the cave, there is better and more efficient sequencing of "ripples going down the caterpillar" as the groups move through the two chambers (an interconnecting pathway having been cut to join them). This meant that the groups were better able to be confined to the organised concrete or earthen floored walkways and, my guide informed me, had resulted in reduction (but not elimination) of visitors seeking to climb on the formations.

The high tourist throughput has meant that there has been significant lampenflora impact from the older style lighting system used and my guide was unaware of any contemplation of upgrading to an LED system at this cave or any of the other tourist caves. Indeed, although not at Sung Sot Cave, some other tourist caves are lit using rainbow lighting to "enhance" the cave's formations.

This year, our visit was at the commencement of the wet season. In 2011 and now, there was virtually no moisture evident in the cave with hydraulic activity confined to only one area. On each occasion, save with respect to this extremely limited area, each of the chambers of this cave looked dead.

I remarked upon this to our guide and he indicated that this was a position in common with some of the other caves (although he was not precise as to whether this applied to all the other tourist caves). He did, however, observe that there was a growing awareness amongst the tourist operator community about the negative impact that the very high levels of visitation had on the caves that had been adapted for tourism purposes.

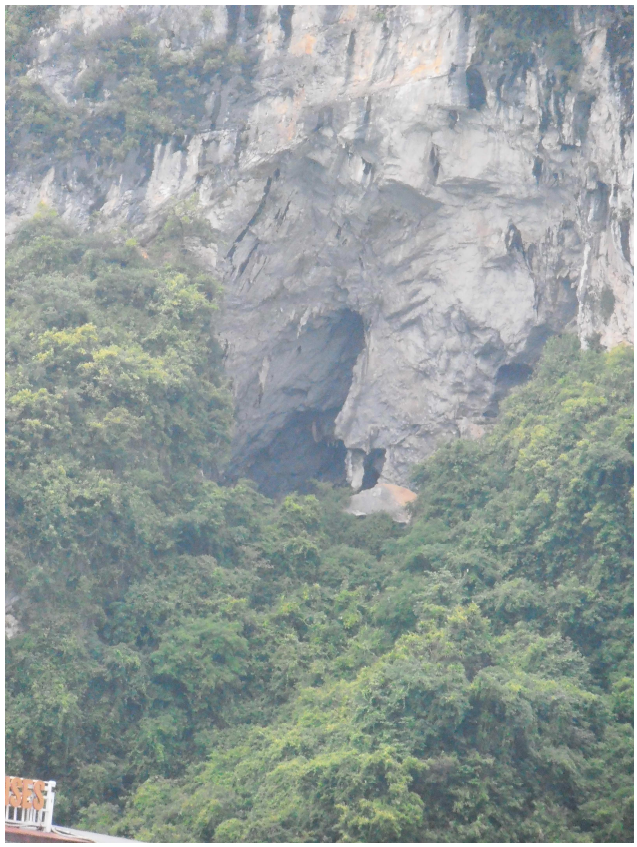
He said that, unlike what was happening with the development of a second designated swimming beach location, he did not anticipate that any more caves would be opened up. What he thought would happen was that the time period across which visits were scheduled would be extended from the presently, broadly speaking, mid-morning to mid to late afternoon. In the longer term, he expected that there might well be lighting to the pathways and in the wharf areas to permit cave visits to extend into the evening. This, he thought, would lead to potential significant expansion of utilisation of the caves without the necessity to adapt and impact new caves for tourism purposes.

It is fair to observe that, as we threaded our way through the channels between the myriad islands passed during our cruise, there were a number of obvious significant openings in a number of islands – with sufficient darkness behind to at least hint at the potential existence of a cave system beyond.

In this context, two matters warrant observation. The first explains the caves' relevance (at least for us). It comes from the official description on the UNESCO website of the reasons for the (now expanded) World Heritage inscription. A small, but relevant, part reads:

> *Possessing a tremendous diversity of caves and other landforms derived from the unusual geomorphological process of marine invaded tower karst the caves are of three main types: remnants of phreatic caves; old karstic foot caves and marine notch caves. The property also displays the full range of karst formation processes on a very large scale and over a very long period of geological time, possessing the most complete and extensive example of its type in the world and providing a unique and extensive reservoir of data for the future understanding of geoclimatic history and the nature of karst processes in a complex environment.*

Second, although anecdotal, our guide's confirmation that there were many hundred known caves, many of significant size, makes it clear that managing the present tourist visitation caves in a fashion which will increase their utilisation (and, also, it is reasonable to assume, increase the extent of the human impact on them) is an environmentally responsible alternative that will meet the demands of the tourism industry and avoid further environmental sacrifices on its altar.



Neil Kell's comments

In October 2015, I visited three caves at Ha Long Bay following a one week consultancy at Trang An Landscape Complex south of Hanoi - it is in simple terms a inland version of Ha Long Bay. At Ha Long Bay my 'announced arrival' as a touristic visitor turned into a management accompanied tour of review and assessment of Thien Cung Grotto, Dau Go Cave, and Sung Sot Cave over three days travelling out by both the management launch, and the staff ferry. Management asked if I could provide a report - it ran to 15 pages about show cave lighting, management, and operations as I experienced it.

In brief, I was shocked by the extent of lampenflora (and the lack of understanding of it) and the seeming disregard for in-cave conservation management. Adding to the lampenflora impacts is littering by both visitors and staff and includes rusting light fittings, spent lamps, decayed walkway materials cunningly hidden out of view and under walkways. And in Thien Cung Cave, there was the stench of a site for urination adjacent to where an in-cave attendant was positioned.

Then I reflected back some 20 years previous to a conversation I had had with the late Elery Hamilton-Smith who had just completed the second stage World Heritage Area assessment process. Elery expressed his admiration of the caves and the management's regard for the resource conservation. He was confident that new developments of the show caves were well executed and that management had a good focus on their stewardship of the resource and the visitor experience. In Elery's words - "I feel confident those caves are in good hands".

So in 2015 - just two decades later, I am being accompanied through these caves by the same management person who accompanied Elery during his assessment work. In Thien Cung Cave, this person commented to me that when the cave was discovered and then opened for showing that much of the cave surfaces were white, and now those once white surfaces are variously mid brown-grey tones. I was asked why this was so - my reply was that it is air-borne visitor detritus settled onto every surface.

Lampenflora was similarly ubiquitous and seemingly equally not identified as an unacceptable show cave impact requiring active cave management. I bought locally in Ha Long City some sodium hypochlorite and a pump sprayer, and made up the approved solution to spray on a test site to demonstrate one possible method of control.

From this experience I returned to Australia quite stunned in my thinking that such wondrous karst resources - in less than 3 decades - could be so degraded, and possibly irretrievably so. I was about to turn 65 in a few months and thought that maybe retirement from being involved in show cave development is possibly the next best thing for me. Experiencing show caves so degraded and mis-managed in such a short time scale under World Heritage Area oversight was disturbing.

Further adventures in Seongryugul, Uljin, South Korea

Andy Spate

Neil Kell and I have been working in Seongryu Cave for many years – mainly in 2006. I visited the cave during the Samcheok City World Cave Expo in 2002 – on a very, very wet day in Samcheok – but dryish in Uljin. That day elements of the Expo were washed away. A few days later Lana Little visited Seongryugul (gul = cave) and had to swim though parts of the show cave!

Seongryugul Ticket Office. Somewhat classier than ours!

The cave, designated Korean Natural Monument No. 155, was the first show cave to open in Korea – in 1963.

But, it has a much longer history as the use of Korean caves as refuges during times of invasion stretches back a millennium or more. Seongrygul, near the east coast city of Uljin, is mentioned in a book written by a Gok Lee in 1349. There are two examples of Chinese script engraved in the rock at the cave entrance which are said to date from this time.

The cave was initially called Seonyugul because it was a beautiful site for mountain gods to stay and rest. Its current name originated during the Japanese Invasions of Korea (1592-1598). During the wars, Buddhist statues housed in the nearby temple were relocated to the cave; hence the name, Seongryugul (Cave Where Buddha Stays).

Ancient Chinese characters are engraved in the limestone just at the entrance to the cave and a short distance inside. I am unable to find what they spell out They are said to be recording a public officer's visiting the cave on March 8 in 544 CE (Silla Dynasty, 57 BCE– 935 CE). There are 38 characters carved on the limestone near the exit of the cave each are approximately three centimetres wide and four centimetres in height. Only 30 of them are recognizable.

Seongryu cave has long been an inspiration for many artists during history including a travel journal during the Goryeo Dynasty (918–1392) and in poems and paintings during the Joseon Dynasty (1392-1897).

Tragically, as happened in other Korean show caves that Neil and I have worked in, during either (or both?) of the Japanese occupations, Koreans took refuge in Seongryugul which was then blocked by the Japanese - scores of men, women and children starved to death.