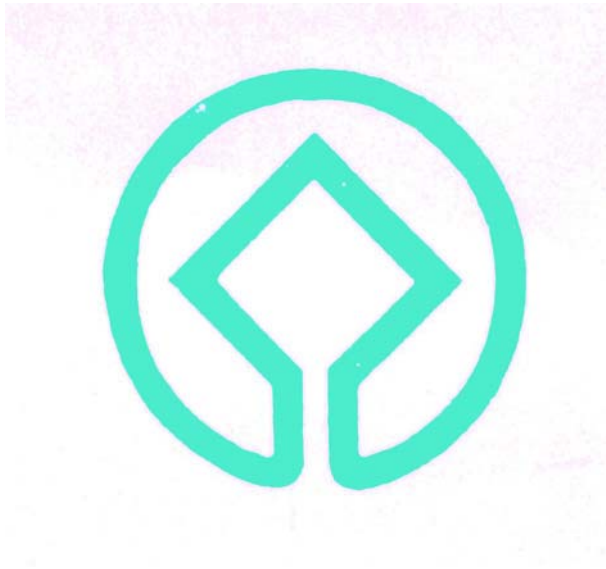


# Karst and World Heritage

Elery Hamilton-Smith



Chair

IUCN / WCPA Task  
Force on Cave and  
Karst Protection

# **The host country must ...**

- **Protect and conserve the site for future Generations**
- **Provide access to and experience of the site values for all people**

- **At first sight, these two demands may appear to be in conflict, but . . .**
- **They can both be achieved with good management**

# Firstly . . .

- **There are basic pre-requisites for sound karst management**
- **They provide the foundation for integrity and sound conservation practice**

- **Maintain the normal hydrological regime in terms of level, water quality and seasonal variation**



- **Over centuries, attempts were made without success to change the water levels at Cerknica in Slovenia**
- **Today, it is clear that the natural regime is the most appropriate**





- **In some protected areas, such as Plitvice Lakes in Croatia, it proved necessary to change the protected area boundaries in order to ensure proper control over water quality**





- Avoid pollution of any kind



- **Disturbance of the land itself must be minimised**
- **Elevated walkways achieve this, both on the surface and underground**
- **[Remember – the floor is often the most valuable part of a cave!]**







Walkways can be designed to maintain or complement the natural beauty



- **On a larger scale, infrastructure such as roads, bridges and other construction demands proper landscape and land stability assessment**
- **Use precautionary principle – if uncertain, do not proceed**



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# Retain or restore natural vegetation . . .

- Slovenia has carried out a program of reafforestation across much of the whole country
- While Indonesia is currently restoring the natural vegetation of the Gunung Sewu protected area



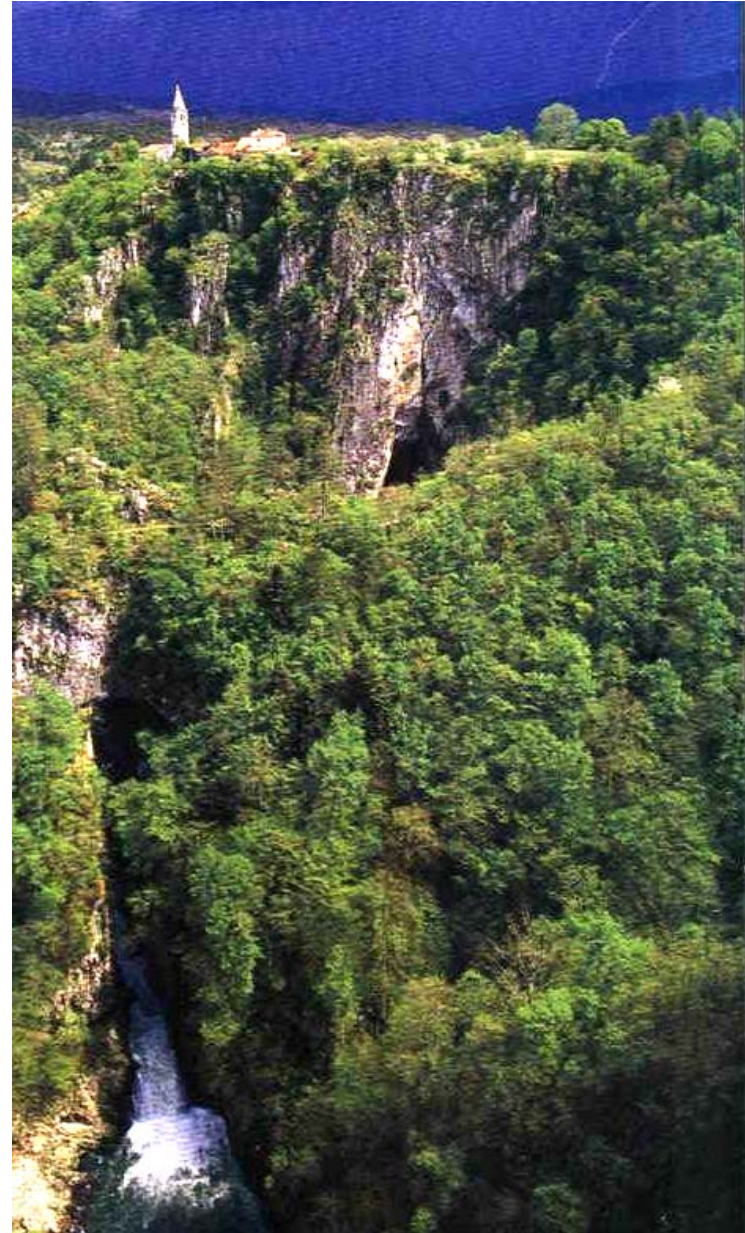
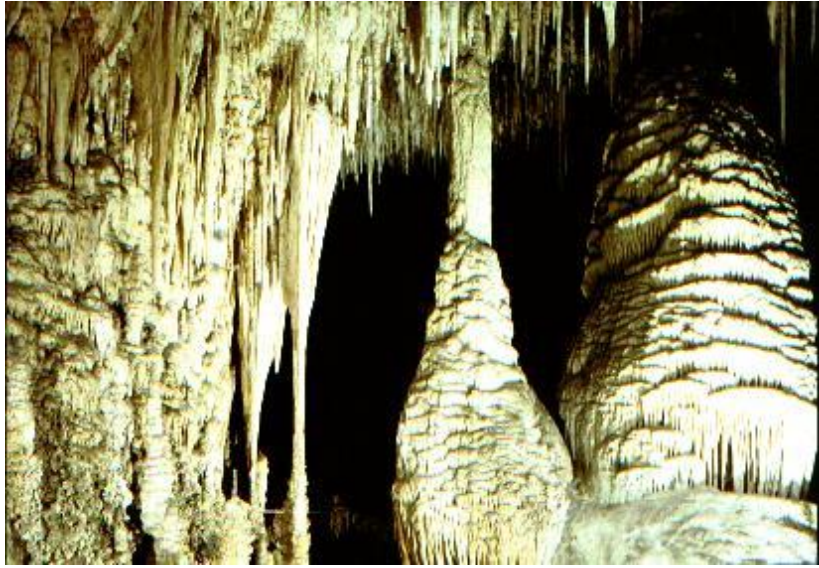
## Secondly . . .

- There must be adequate protection and conservation focused upon the specific values of the site
- This demands a comprehensive and integrated oversight of site values

# **Simple and natural beauty . . .**

- **Avoid trying to “improve” upon nature**
  - e.g., colored lights in caves
- **Make sure that all essential infrastructure is well-designed and unobtrusive**
- **Remember that we have a number of senses, and think of keeping all of them engaged**





# **Avoid Vandalism . . .**

- **Much vandalism results from either poor design by management**
- **But big vandalism is the worst!**



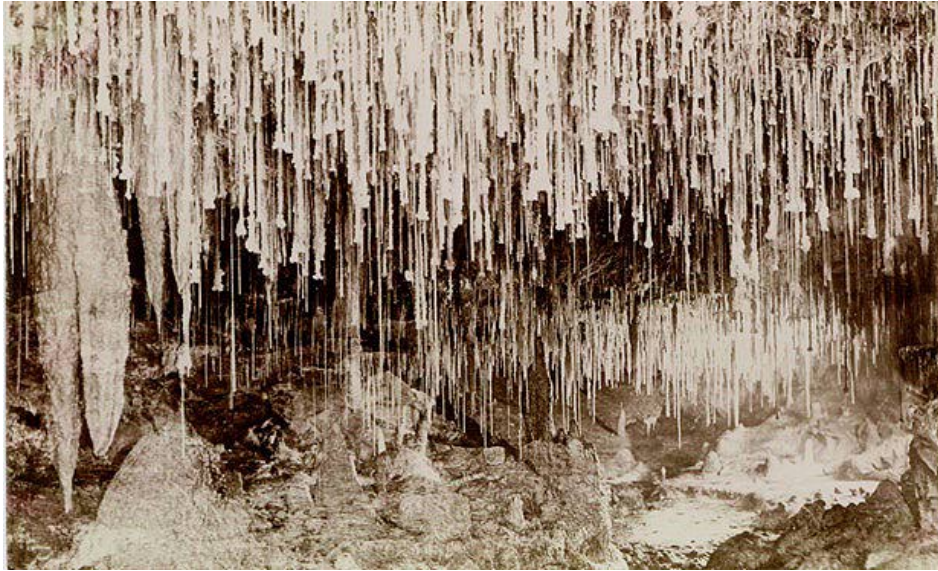
- Lampenflora is the result of poorly designed and managed lighting



Even if, as claimed,  
these were taken  
from a cave which  
was to be submerged  
by a dam, their  
display and sale  
legitimizes the  
destruction of natural  
wonders









It is important to prevent touching of vulnerable decoration but use public education and unobtrusive well-designed barriers







# Important Geological Features

**Must be protected from disturbance or damage**







**Palaeokarst may  
contain  
invaluable  
evidence of the  
past**

# Biota must be protected . . .

- Invertebrates are especially vulnerable
  - No Smoking
  - No Chemical pollution



**Disturbance of Bats  
should be avoided,  
particularly during  
rearing of the young  
or hibernation**



- **Although generally not visible, bacteria and nanobia are a fundamentally important element of cave biota**
  - **As the base of the food web**
  - **As an active agent in mineralisation**
  - **And in speleogenesis**





# Archaeology and Paleontology



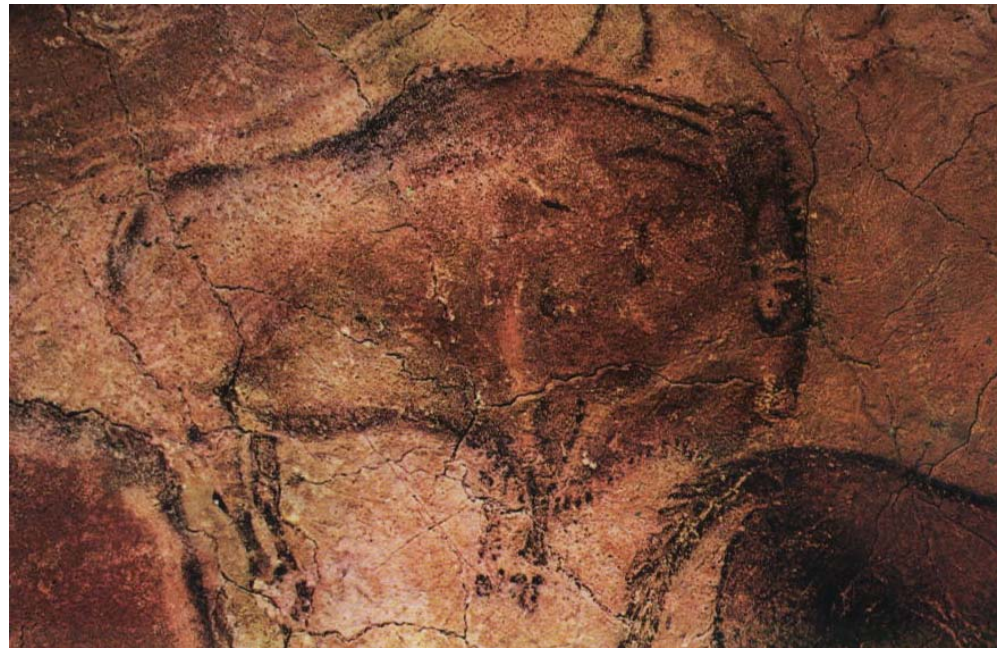


- These are not just cave bear skulls; they were ritualistically arranged in the cave by the Neanderthal



# Cave art as cultural history

- **Tragically, cave art is often damaged or “improved” by members of the public**
- **It must have the highest protection**



## **Thirdly, the living culture**

- **At the cave of Early Man in Vietnam, visitors burn incense in respect to their long departed ancestors**







- Many caves are of great spiritual significant





At Shilin, the Yi  
People not only  
present their culture,  
but are the best park  
hosts and guides of  
my experience

