



and has recommended steps to remove tourist facilities from fragile areas. Much of the cave system is not accessible to the public, and 1980 tourism was 25% less than in 1973; a tourism development plan provides for staging areas outside the cave drainage.

#### 7. COMPARISON WITH OTHER AREAS

Mammoth Cave system is well over twice as long as the next-largest cave system (Hölloch in Switzerland, 135 km). According to Dr. Arrigo A. Cigna, President of the Union Internationale de Spéléologie, "No other cave system in the world can be compared with it".

#### 8. EVALUATION

The limestone caverns of Mammoth Cave contain a natural spectacle of world interest. The site illustrates a number of stages of the Earth's evolutionary history, contains on-going geological processes, has superlative examples of natural features, and contains unique wildlife. It is protected by the US National Park Service, which has been charged by Congress to manage, develop, interpret and preserve the site. The possible dangers to the integrity of the site have been considered and steps are being taken to limit their influence.

#### 9. RECOMMENDATION

The Mammoth Cave National Park meets the criteria of the Convention and should be placed on the World Heritage List.



International Union for Conservation of  
Nature and Natural Resources

July 1981 (rev)

NAME Mammoth Cave National Park

MANAGEMENT CATEGORY II (National Park)  
World Heritage Site (Criteria: i, ii, iii, iv)

BIOGEOGRAPHICAL PROVINCE 1.9.7 (Chihuahuan)

LEGAL PROTECTION No information

DATE ESTABLISHED 1 July 1941. Accepted as a World Heritage Site in 1981.

GEOGRAPHICAL LOCATION Situated in Barren, Edmonson and Hart Counties, Kentucky. 37°07'30"-17'30"N, 86°00'00"-17'30"W.

ALTITUDE No information

AREA 21,191ha

LAND TENURE Public ownership except 6 parcels of private land totalling 3.7ha.

PHYSICAL FEATURES The Park contains the longest cave system in the world, with known passages extending some 306km and perhaps an equal length of undiscovered passages. It was formed over 100 million years ago by the Green River and its tributaries and the geological process is continuing. Most types of cave formation are found here and features include the long passages with huge chambers, vertical shafts, stalagmites and stalactites and gypsum "flowers" and "needles". Outside the cave there is superb karst topography with all the features of a karst drainage system - a vast recharge area, complex network of underground conduits, sinkholes, cracks, fissures, and surface and underground springs. Fossils are distributed throughout the rocks of the Mississippian age and include brachiopods, crinoids and corals. Mean annual precipitation is 1,270mm.

VEGETATION Luxuriant vegetation outside the cave system and a rich cave flora. Communities on the surface of the plateau include 84 tree varieties, 28 varieties of shrubs and vines, 29 types of ferns, 209 wildflowers, 67 species of algae, 27 species of fungi and 7 species of bryophytes. The Big Woods basin ecosystem (120ha) is reputed to be one of the best remaining examples of a virgin white oak/black oak Quercus velutina/tulip tree Liriodendron tulipifera forest in eastern North America and the cedar Cedrus sp. karren and savannas of the solution valleys are also of scientific interest.

NOTEWORTHY FAUNA The richest cavernicolous wildlife known, including species endemic to the cave system occur in the Park. There are 41 species of mammals, 203 species of birds, 18 varieties of reptiles, 15 species of amphibians and numerous invertebrates. Bat colonies include the Indiana bat Myotis sodalis (V). Of special concern is the Kentucky cave shrimp Palaemonias ganteri, a freshwater species of uncertain status. The geological setting has contributed to the species richness of the area with the cave system being old enough to have stable communities of fauna from three karst regions within an area large enough for speciation to have occurred. Nowhere else do the blind fish Amblyopsis spelaea and Typhlichthus subterraneus and their spring-cave dwelling relative Chologaster agassizi co-exist. Animal

species considered threatened and found only in the Mammoth Cave area include Kleptochthonius hageni, K. cerberus, Anthrobia monmouthia, Antriadesmus fragilis, Pseudoanophthalmus audax, P. inexpectatus, Vatrisoides henroti, Dorypteryx hageni, Arrhopalithes altus, Helicodiscus punctatellus, Sagittocythere stygia and Paleomonias ganteri.

CULTURAL HERITAGE

The Park contains evidence of 4 pre-Columbian Indian cultures: Mississippian, Woodland, Archaic and Paleo-Indian. The early Woodland culture period is of special archaeological importance because it shows the first evidence of organized horticulture in North America with primitive agriculture on river floodplains and was the period of the first exploration and mining in Mammoth Cave. Several mummies, sandals, campfire sites, bare foot prints have been found preserved in the stabilizing cave atmosphere.

ZONING

No information

CONSERVATION MANAGEMENT

The Master Plan for the National Park (1977) has recommended steps to remove tourist facilities from fragile areas.

DISTURBANCES OR DEFICIENCIES

Damage to some irreplaceable cave resources occurred during the early periods of cave use, and it is proposed that further damage be avoided by the relocation of essential visitor services from the Historic entrance to a peripheral area. The area adjacent to the Park is now turning from agriculture to light industry. Of major environmental concern is the Sinkhole Plain to the south and east of the Park. Precipitation falling on this extensive area collects in underground streams and is finally discharged into the Green River. Any changes in quality or quantity of water would adversely affect the unique aquatic life of the underground streams and alter natural cave development. Tourism is disturbing the cave system and particularly the bats, however, only limited access to the cave system is available to the public on organized cave tours. Tourism was 25% less in 1980 than in 1973 (1.9 million). The scattered distribution of the few small private tracts makes development in the Park unlikely.

SCIENTIFIC RESEARCH

A professional geologist is studying the hydrogeological and environmental relationships at Mammoth Cave. In 1981 the Environmental Agency was studying the environmental impact of the proposed wastewater system.

SPECIAL SCIENTIFIC FACILITIES

No information

PRINCIPAL REFERENCE MATERIAL

No information

STAFF

Superintendent for on-site administration assisted by managers and specialists skilled in administration, resource management, maintenance and visitor protection.

BUDGET

No information

LOCAL PARK OR RESERVE ADMINISTRATION

U.S. Department of the Interior, 18th and C Street, N.W., Washington D.C. 20240, U.S.A.

DATE

July 1981.