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Assessment Mission (Croatia, 5 - 9 May 1996)

PLITVICE LAKES
WORLD HERITAGE SITE
IN DANGER
REPUBLIC OF CROATIA
REPORT

MULTINATIONAL RAPID ASSESSMENT MISSION

5 - 9 May 1996

World Heritage Centre

UNESCO, Paris

MISSION REPORT: PLITVICE WORLD HERITAGE SITE IN DANGER

I. Introduction: At the request of the Republic of Croatia and with the authorization and endorsement of the Nineteenth Session of the 21 nation intergovernmental World Heritage Committee (December 1995), The World Heritage Centre, UNESCO, convened a multinational and cross disciplinary rapid assessment team to assess the conditions and situation at Plitvice Lakes National Park and World Heritage Site (inscribed in 1979) in Croatia, which was placed on the World Heritage Site In Danger List (1992) as the result of potential damages and disruption to specific World Heritage values threatened by armed conflict. In the interim, the World Heritage Committee Chairman authorized the provision of Emergency Assistance in the form of radio equipment to assist in the partial restoration of effective park management and visitor protection.

Mission Statement: The primary objectives of the rapid assessment team, together with Croatian counterparts, were to: (1) Analyze the current situation on site with respect to the most urgent issues including potential and ascertained threats to the World Heritage values of the area; (2) Identify immediate requirements for restoring resource integrity and effective management capability to the site; (3) Determine the requirements for removing the site from the In Danger List; and (4) Provide guidance for renewing sustainable socioeconomic contributions of the site to the region.

Mission Terms of Reference: The World Heritage mission team met with appropriate Croatian officials in Zagreb to discuss the current socioeconomic, political and institutional context of Plitvice WHS and environs. Organizational, statutory and policy factors will be addressed. The team was to proceed to Plitvice to meet onsite with Croatian experts, park staff and others as appropriate. Emphasis was placed on the following: (1) Assessment of the status of conservation of the area with particular focus on the water quality and management, forest disturbances, large mammal populations and site management capability; (2) Identification of impact and damages caused by armed conflict to park infrastructure requiring remedial actions; (3) Review of relevant legislative, organizational, administrative and management framework regulating the site and environs; (4) Assess the socioeconomic situation of the site and environs with particular reference to tourism potential and the recovery of related sustainable benefits; (5) To develop a summary action plan to address priority needs with a view to removing the site from the World Heritage In Danger List; and, (6) Consideration of a conceptual framework and requirements to elaborate and/or revise the general management plan for the area and to reestablish an effective management capability, as necessary.

II. Executive Summary: Under the terms and conditions of the World Heritage Convention, twenty five years has been invested in the global identification and inscription of universally significant properties on the World Heritage List. In that period, seventeen natural world heritage sites have been acknowledged by the collective wisdom and political consideration of the Advisory Body (IUCN) and World Heritage Committee as having the very values that are attributed as having universal value to mankind, threatened, and in danger. There remains an enormous, and essentially untapped potential for the collective and cooperative action of the 146 States Parties to the World Heritage Convention to minimize, mitigate and remove such threats to these properties.

Plitvice Lakes World Heritage Site was inscribed on the World Heritage In Danger List (1992) for potential and ascertained threats of armed conflict to the primary values of the unique dynamic biogeomorphological formation of travertine terraces (*criterion ii*) forming a series of lakes and connecting streams of high aesthetic merit (*criterion iii*) and the associated relatively intact ecosystem including old growth beech forest and key populations of European brown bear and wolves. These specific World Heritage values survived the armed conflict (1990-1995) without damage and have been undergoing a natural restorative process to conditions of higher quality than have existed for several decades. In the absence of any damage to the primary resources, and with cessation of armed conflict and subsequent withdrawal of international armed forces (November 1995), there is no longer the potential or ascertained threat of armed conflict to the values for which the property was inscribed on the World Heritage In Danger List, as described by Croatian authorities (1992) and the 1992 World Heritage Mission.

However, it is noted by this 1996 Mission, that for reasons not articulated and declared in 1992, the World Heritage values of Plitvice Lakes had been undergoing unmistakable and documented deterioration for at least two decades. In addition, the war did destroy essentially all park structures and displace all park staff, which only now, are slowly returning; without staff maintenance for essentially five years, the much of the park infrastructure was also lost and/or damaged. Croatian emergency funds have been allocated and are available by loan to the Park Authority for the repair, replacement and restoration of core facilities, services and equipment and basic infrastructure functions and management intended to partially resume by June 1996. Visitors however, are returning to the area in increasing numbers, and unless managed effectively, constitute a yet to be acknowledged threat to World Heritage values of the area. The park professional staff does not yet have resource and visitor management and protection capability sufficient to meet the needs of the area. A labour force of approximately 200-300 workers is available, but not fully employed pending funding. Significant deterioration of accessibility in the form of walkways and boardwalks in the primary resource area has occurred due to lack of maintenance and requires repair before visitor safety and security can be assured; this is scheduled for June 1996, subject to the availability of materials and labour. The park sewage treatment facility and related water pumping equipment has deteriorated; it requires rehabilitation and repair before the anticipated increased visitation occurs and causes contamination and destruction of the primary resource. In light of these deficiencies and inadequacies, the existing park management plan and supporting resources are no longer adequate, valid or sufficient.

The Republic of Croatia is considering a new institutional framework for the management and operation of Plitvice Lakes World Heritage Site. A new "Spatial Utilization Plan" is being developed and a new "Tourism Revitalization Plan" has been authorized by the Ministry of Tourism, but not yet implemented. Many aspects of these initiatives hold clear promise for a more effective resource and visitor management regime than previously existed, if followed. However, in the absence of an updated General Management Plan, an adequate level of professional park staff to manage and monitor both resources and visitors, adequate baseline data inventories, a functional park infrastructure and ecological and design carrying capacities, The Republic of

Croatia may wish to request the property remain on the World Heritage In Danger List for quite different reasons than in 1992, and until such time as these forward thinking initiatives can be implemented and the park infrastructure can be modified, restored and restaffed to an effective level and in accordance with the new National Park Law (1994).

Summary Conclusions:

1. *The Plitvice Lakes World Heritage values are no longer threatened by armed conflict. Other potential and ascertained threats to these primary values may exist and are identified in the Mission Report.*
2. *Constructive steps and positive actions have been taken by the Republic of Croatia to provide an environmentally sensitive legal and policy framework favoring the protection, management and presentation of Plitvice Lakes National Park and World Heritage Site.*
3. *An equally environmental sensitive Spatial Plan and General Management Plan for the park are yet to be developed and implemented; community and NGO participation will be critical factors in the success of this effort. International assistance and advisory services may be required to facilitate these efforts. Specific recommended related actions are contained in the Mission Report.*
4. *A variety of urgently recommended short and mid term actions requiring immediate attention to mitigate visitor impact in the 1996 - 1997 visitor seasons are identified in the Mission Report.*
5. *To support a revitalization and recovery of the economic, social and ecological elements of the area, a strategic regional development plan will be required to address and resolve the wide range of complex and interrelated issues necessary for the sustainable use of Plitvice Lakes World Heritage Site in a national context. National and international resources will be required to meet this objective.*
6. *A local, regional, national and international effort will be required to assist the Republic of Croatia address national and international responsibilities for the effective protection, management and presentation of Plitvice Lakes.*

III. Background - World Heritage Nomination and Listing: Plitvice Lakes National Park, established in 1949, was nominated and subsequently inscribed as a natural area on the World Heritage List by the World Heritage Committee during its second session in 1979.

A. World Heritage Values and Criteria - In evaluating the nomination and area, IUCN advised the World Heritage Committee (April 1979) that Plitvice Lakes National Park merited World Heritage status “primarily on the basis of the ‘undisturbed production of travertine (tuff)’ which molds the character of the landscape and hydrologic systems. This process is in accord with *Criterion 10 (ii)*, ‘ongoing [geological] processes in the development of communities of plants and animals, land forms and marine and freshwater bodies’. The review stated that: “The tuff and tuff-producing plants are the decisive factors influencing the morphology of Plitvice Lakes...there are waters, lakes, waterfalls, and woods in other parts of the world too - but the Plitvice Lakes are unique”. Additional reasons for inscribing the area on the World Heritage List that were identified by IUCN “relate to *Criterion 10 (ii)* ‘interactions between man and his natural landscape; and *Criterion 10 (iii)* exceptional combinations of natural and cultural elements. eg. long period of settlements, continuing role in historical evolution of governmental system”. *Criterion iii* also addressed “superlative natural phenomena, formations or features, such as outstanding examples of the most important ecosystems and areas of exceptional beauty”. IUCN concluded with respect to area integrity that in light of the long-term management plan for Plitvice Lakes National Park, combined with a continuing research programme, the Government’s commitment to the management of the park was indicated.

B. World Heritage In Danger Listing - Plitvice Lakes National Park and World Heritage Site is situated in a region which was the locale of the start of armed conflict Easter 1990; the war’s first casualties occurred within the park boundaries in the administrative and high visitor use area. When the area was occupied by opposition forces, the resident park staff and village residents were forced to evacuate the area. The Plitvice park authority maintained an exiled management team in Zagreb throughout the war and until November 1995, when it was possible for the park managing director and an available skeleton staff to return to the park. The majority of residents of the area including former park employees were unable, or unavailable to return. Armed conflict reduced 22 villages and multiple facilities located adjacent to, and within the boundaries of the World Heritage Site, to rubble. While war damage was higher outside the park boundaries, 7 out of the 8 hotels, essentially all park administrative offices, maintenance facilities, and restaurants, and much of the staff housing located within the site, were destroyed, or damaged beyond repair. Park communications, equipment (including all small tools, heavy equipment and a fleet of over 150 vehicles) and utilities, water pumps and the sewage treatment plant were stolen, damaged and/or destroyed. In 1991, the area was occupied, protected and supervised by international peace keeping forces (UNPROFOR-Czech Battalion); considerable additional damage to facilities and campgrounds accidentally occurred with the movement of heavy equipment and in areas where these forces were billeted. Significant amounts of private property were stolen and/or damaged. Damage claims to the United Nations for these incidents remain unresolved.

At the request of the Government of Croatia (1992), the World Heritage Bureau at its sixteenth session (July 1992) recommended the Plitvice Lakes National Park and World Heritage Site be placed on the World Heritage In Danger List as the result of potential and ascertained threats of armed conflict. The Bureau further requested that an international team of experts visit the area to identify the major threats facing the site and propose mitigating measures. This mission was accomplished in September 1992 and the report was presented to the Bureau in December 1992. Based on the report and its recommendations, the World Heritage Committee placed Plitvice Lakes on the World Heritage In Danger List. Included in the recommendations of the report, it was noted that pre-war tourism had been high and visitor regulation measures had not been strictly enforced. The report further recommended that motor traffic in the park should be minimized and an alternative route for through traffic be established; water drawn from lake sources should remain at lowest possible levels and alternative water sources would have to be located; set up adequate sewage treatment and discharge facilities; confine the building of new tourist facilities to areas outside the park; spread the visitor season over a longer period; establish special interpretation (conservation education) programmes for selected areas outside the lake area to ease congestion and visitor concentrations. In addition, it was recommended that regular monitoring programmes of the major hydrological characteristics, brown bear and other select wildlife populations and of the status of old growth forests in catchment areas be implemented. The park authority was requested to provide periodic reports on the results of the monitoring programmes.

Recommendation on World Heritage In Danger Status: Plitvice World Heritage values are no longer threatened by armed conflict. Relist Plitvice WHS as "In-danger" due to "potential visitor impacts on primary World Heritage Values in the absence of effective management capability resulting from prior armed conflict".

IV. Natural Resource Assessment and Analysis

A. Water Quality, Quantity and Travertine Formations

1. **Status** - The primary water and biogeomorphological World Heritage resources and values of the sixteen Plitvice Lakes, travertine formations and connecting waterways were undamaged and indeed, protected by war. Evacuated and abandoned villages, diminished livestock populations and the cessation of visitor activity clearly reduced and perhaps eliminated most, if not all, immediate sources of surface and ground water contamination from excess nitrogen, phosphates and bacteria (E. coli) for up to the last five years. Water levels behind continuously building travertine terraces have risen indicating an active, unimpaired and continuing biogeological process. The only available water sample data from this period, obtained during the 1992 World Heritage Mission to Plitvice Lakes, reflected a predictable reduction in background coliform bacteria. Agricultural activity in the vicinity, but external to the World Heritage Site, involving the use of chemical fertilizers and pesticides was halted prior to the war and has not resumed. Previous forest harvest activities, perhaps contributing to documented siltation of the drainage, ceased in 1990 (except for the occasional isolated felling of trees for military blockades) and has

not resumed significantly. Inconsequential tree cutting for fuel wood, peripheral, or external to the park boundary, has occurred without damage to the hydrological regime in the interim. The Croatian Academy of Sciences suggests an expansion of the park boundary from 19,000 ha to 35,000 ha would be required to fully protect and control land use in the watershed.

Recommendation: Efforts should be made to accumulate, record and maintain data monitoring records which would provide an on-going basis for determining changes in environmental parameters related to World Heritage values of the park.

Without the significant volumes of water being drawn directly from Plitvice Lakes to meet all visitor and service requirements (estimated 20% of summer flow), or agricultural disturbances in the catchment areas, it may be concluded that essentially a "natural water flow" has occurred for over four years; a natural water flow would be at levels perhaps 20% higher than during the decade preceding the war, when the park was operating at an over-designed capacity with over 800,000 visitors/year in the area, primarily in the summer months at the lowest water flow levels. Unlike pre-war conditions, no sewage or domestic waste water has been discharged from park facilities into the lake drainage since 1991. No evidence suggests that military chemicals, or material, remains stored in the park or environs as potential contaminants, or hazards in the watershed.

Recommendation: Particular emphasis should be placed on determining changes in water quality and quality by systematic monitoring by standardized methods.

2. Conditions - The water quality appears higher than during pre-war conditions. Prior to the war, a variety of accumulative disturbances including dissolved organic matter, nutrient overloads, contaminants, and siltation had disrupted the water quality to the extent where: (a) crustacean kills were documented in the upper lakes; (b) marsh vegetation species had invaded the shallower waters; (c) turbidity (algal blooms/siltation) had periodically discoloured the lake water; and, (d) the dissolved organic matter in the water was believed to be inhibiting calcite sedimentation travertine formation process.

In early May 1996, the Mission observed both lake and stream waters were crystal clear with abundant index species including trout (*Salmon trutta*), minnows (*Phoxinus phoxinus*), perch (*Perca fluviatilis*) aquatic insects and amphibians (five species including *Rana sp.* were present. Shallow water and shoreline vegetation including rushes (*Typha sp.*) and reeds (*Phragmites australis*) and *Carex (sp.)* are still present, particularly in the upper lakes, but this may simply be the representation of a natural dynamic ecological lake process clearly evident elsewhere in the park with eutrophic and filled small, now drying, lake beds (marsh, bog and meadows). The primary feature of travertine terrace formations (barriers) are continuing to actively build in the lower lakes at a geologically rapid rate; the latter is reflected in measurably rising down stream lake levels (30 cm in ten years). New lakes are being built by a dynamic progression of newly forming travertine terraces down stream from those areas normally accessed by visitors.

Recommendation: Emphasis should be placed on identifying index species correlated with water quality changes and a systematic monitoring programme initiated. Further efforts to document lake level changes and new travertine formations should be made.

3. Trends - The non-use of Plitvice Lakes World Heritage Site for five years and depopulation of the watersheds and nearby villages has arrested and perhaps reversed a deteriorating water quality and quantity situation of several decades. A natural and normal restorative process is underway. Based on historical data, visual observations and considerable circumstantial evidence, water conditions and the related uniquely dynamic biogeomorphological process of travertine barrier formation for which the area was placed on the World Heritage List are returning to a "natural" state.

Recommendation: If this conclusion is to be further substantiated, and for the purpose of future resource protection and management, it is essential that prior to redevelopment and reuse of the area, baseline parameters be immediately established, and a systematic data collection and monitoring programme be initiated; extend park boundaries and/or protection zone to cover entire watershed.

B. Wildlife Populations

1. General Conditions and Trends - Pre and post war quantitative data on local brown bear, wolf and deer populations is lacking, or unavailable; investigations on the range, population structure and requirements of these particular species would provide valuable information for future wildlife management considerations. Quantitative data on avifauna, aquatic invertebrates and vertebrates was not immediately available. The park does not have at present the resident staff and equipment capability to carry out this type of research, or interpret such information for management, protection, or presentation purposes.

Recommendation: Remedy resource management staffing and basic equipment deficiencies; strengthen partnerships with the Academy of Science and appropriate non-governmental organizations to supplement research capabilities.

2. Status of Select Species - Circumstantial evidence supports the observations of experienced residents who estimate that neither the brown bear or wolf populations have been substantively altered by the war. Pre and post war populations estimates suggest that stable condition of 11-12 bears and 4-6 wolves continue to utilize the park as primary habitat; both species would normally range well beyond the existing park boundaries. A young bear was found dead in a park lake this spring, but appeared to park staff as having died of accidental (drowning) and natural causes. Deer are present in the park in undetermined numbers; no browse line was evident in the forested area, nor was normal forest regeneration visibly affected.

Recommendation: Initiate systematic research and monitoring programme focussed on select species.

3. Wildlife Habitat Conditions - The park habitat is predominately a healthy woodland of mixed age, structure and species, interspersed with numerous meadows and adjacent agricultural lands with interstitial forest corridors. This composition of species and landscape creates an extensive edge effect, which when combined with abundant surface water, varied karst topographic relief and controlled human intervention, has resulted in diverse and productive conditions highly favourable to many vertebrate and invertebrate species. With the exception of the pre-war park development sites and high visitor impact area concentrated in approximately 200 ha, Plitvice Lakes National Park represents enhanced wildlife habitat. Under current legal national park definition, protection and the perpetuation of natural processes may tend to simplify habitat conditions in this relatively small area. If through time the latter occurs, management intervention may be required in areas beyond an enlarged core zone and perhaps extended to areas external to current park boundaries, if diversity and productivity is to be retained.

Recommendation: Develop regional resource management plan to address issues within and external to expanded park boundaries.

C. Forest and Vegetation

1. General Conditions and Trends - The general conditions and trends within park boundaries are good. Over 70% of the World Heritage Site area (15,400 ha) within the current boundaries (19,172 ha) is covered by forest. The remainder is meadow grassland and now fallow pasture (27%), water surface (1%) and developed area (approximately 2%). The dominate beech (*Fagus sylvatica* 73%) and mixed beech/fir (*Fagus-Abietsalba* 22%) forest within the park is a portion of a larger ecosystem between Plesivica and Velebit (MAB Biosphere Reserve-not protected by law in Croatia). Pine and heath occur as pioneer vegetation on the limestone formations; oak (*Quercus petraea*) and hornbeam (*Ostrya carpinifolia*) occurs on the warmer lower slopes of the river canyon. The forest under the management of the Park Authority is in a healthy natural condition divided only by one regional road and the park developed areas. This park forest is now excluded from management by the State Agency for Forestry (Hrvatske sume) which selectively harvested approximately 40,000 cubic meters/year of timber, or about 40% of new growth, from the park (1961-91) under pre-war conditions, and prior to that, endured both irregular and regular selective cutting from 1937-61. During the war, the timber cutting and related wildlife and forest disturbances were significantly reduced to only meet limited occasional local fuel wood needs and to provide a limited number of military road barriers within the park. This timber harvest reduction, and eventual elimination is in keeping with the 1994 National Park legislation and recommendations made by the 1992 UNESCO World Heritage Plitvice Mission. Within the forested area of the park, there is a small (79 ha) old growth beech/fir forest (Corkova uvala) previously zoned for strict protection and which has not been logged for many decades that is joined with a considerably larger well structured, healthy and maturing younger forest of over 400 ha; the majority of the 20, 000 ha within the park has the regenerative capacity to evolve in a similar manner in time and without manipulation. This combined relatively intact, stable and minimally disturbed forest community holds promise for melding into a larger older growth forest contributing to the overall ecological stability of the area, as well as providing habitat reserves for the more mobile species ranging far beyond the park boundaries.

Recommendation: Establish forest research and ongoing monitoring programmes which would contribute significantly to the understanding of an undisturbed forest maturation process.

2. Disturbances/Adverse Impacts - non war related - Pre-war vegetation disturbances and attendant disruptions of the ecosystem have resulted from centuries of timber utilization and land clearing for agricultural purposes and habitation. Since the early 1900s, and particularly in the last 30 years, increasing tourist demand prompted unsustainable overdevelopment of the area with a misdirected accessibility and facility expansion within the park boundaries. Unfortunately, in light of a lack of scientific data and its interpretation, monitoring and understanding of the ecosystem, and in the absence of adequate protection policy and regulatory mandates, short term economic gains dominated the management objectives of the area. The resulting proliferation of the tourism industry and related high impact infrastructure and demands within a 200 ha area immediately adjacent to, and effecting the sensitive primary resource and World Heritage values of the park has not necessarily resulted in permanent damage to the area. A slow and deliberate recovery of the forest vegetation, structure and function will occur in the absence of further major disturbances. Evidence of this recovery process is already readily visible in the clearings of the 1000 car parking area near Entrance Gate 1 of the park.

3. Watersheds - The exclusion and/or mitigation of disruptive human activity in all relevant watersheds and surface and ground water drainage within and external to the park boundaries will be a critical factor in the protection of the primary World Heritage values of Plitvice Lakes. The control of forest encroachment into meadows with, or without live stock grazing, may enhance the habitat for certain species, but must be carefully weighed against the priority of water quality, quantity and periodicity requirements of the aquatic biogeomorphological system. Key meadow and forest-edge species may satisfactorily have their requirements met elsewhere outside these specific watersheds, as an alternative to encroachment control.

Within the watersheds, several other small vegetative complexes of particular interest exist. These include the peat bog on the south side of Prokosko jezero and the marsh in the same area.

Recommendation: Survey and expand resource base map to identify small ecologically sensitive areas of particular scientific and conservation interest and establish carrying capacity such areas.

D. Resource Management Practices - Although pre-war forest sanitization, timber harvest and stock grazing were traditionally carried out within the park, no specific purposeful wildlife or vegetation management practices, other than survey, appear to have been directed, or implemented by the park staff. In the immediate post war period, the implications of a variety of new factors influencing wildlife and habitat must be considered and addressed.

Recommendation: Develop a resource management plan to address issues related to the following: visitor circulation and use patterns; the incipient successional forest encroachment into meadows and pasture land; reduced prey species for the wolf and scavenging opportunities for bears; abandoned agricultural lands and changing regional land use patterns; wildlife corridors

between the park and other protected areas; reconstruction and development activities; and, hunting and fishing regulation and enforcement.

E. Research Requirements - There are extensive ongoing baseline inventory and monitoring needs in this World Heritage Site. Related to management practices is the establishment of research priorities, coordination (perhaps by a permit system), data interpretation and the systematic monitoring of index species and habitat conditions. Meadow encroachment and management will be a particularly visible issue; without traditional live stock grazing in these open areas within the park, a natural progression of fir tree is already colonizing the meadows. It is clear that an intensive baseline inventory of the primary features of the park is urgently required and a thorough systematic monitoring of these primary features related to surface and ground water quality and quantity, lake shore succession, eutrophication and the biogeomorphological processes is an ongoing requirement.

Recommendation: Establish baseline inventory and ongoing long term monitoring of other ecosystem components, including large mammals, dominant forest species, meadows and any specially protected species should be given priority with special emphasis on sections of the park with high visitor use and impact. The Croatian Academy of Sciences recommends the establishment of a scientific research laboratory within the park to facilitate the required research and monitoring activities.

F. Resource Management Capabilities - It is noted that the Croatian Academy of Sciences has conducted and supported research in Plitvice Lakes National Park for seven decades. Primary investigative emphasis was placed on the natural properties of the area including the specific features and vulnerability of the terrace building phenomenon; research was also conducted on the threats of human influence. This body of data will be a contributing factor for future resource management decisions and actions. The Croatian Ecological Society (CES) founded in 1969, and now with more than 1000 members, has demonstrated effective capabilities in promoting environmental awareness and in organizing scientific workshops, seminars and symposia on comparative Croatian ecosystems, the state of research and ecosystem protection problems.

Recommendation: In the near future, both scientific bodies are urged to focus their collective knowledge, wisdom and experience on the issues of Plitvice Lakes World Heritage Site In Danger. A gathering of relevant data and baseline inventory information, the identification of research needs and priorities, and the determination of resource management requirements, in published form at the earliest possible date, will be essential for the future protection and presentation of this park. At this critical juncture, and prior to tourism redevelopment, this collective database and guidance would be invaluable. With this information, the Park Authority would be in a favourable position to effectively allocate resource management staff and resources required to meet the primary objectives of resource protection and management.

V. World Heritage Site Management (Status and Evaluation)

A. Park Management and Objectives

Although the existing General Management Plan for Plitvice National Park and World Heritage Site (1984) is for the most part outdated and no longer relevant to the circumstances and conditions of the area at this time, the 1994 National Park Law, the recently authorized Tourism Revitalization Plan and the Park Authority's Basic Guidelines for the Proposed Work Plan are generally compatible and complementary, if followed. With clarification and refinement of the application of the World Heritage Convention, national law, national park and tourism policy guidelines in the context of the area's resource dynamics and sensitivities, the formulation of specific park management objectives and related actions will be required. Further concentrated efforts at remedial and corrective restoration of the park infrastructure and adequate baseline inventorying, monitoring and interpretation of the resulting information, will assist at providing a sound basis for establishing a valid general management plan.

Recommendation: Based on a thorough review of scientific data, current law and policies including a consideration of requirements under the World Heritage Convention and park management priorities, revise and update the Plitvice General Management Plan.

1. Staffing and Organization - The pre-war tourism/park management corporation directly employed between 1800 and 2400 people and indirectly supported most of the families in the general vicinity of the park. The post war park mandates, constraints and divested commercial interest condition may still require 300-500 employees, of which would include 15-18 professional management staff, according to park authority estimates. There are only four senior officials on the park management team at present (Managing Director, civil engineer, resource protection and public relations). The critical position of Managing Director is scheduled for renewal, or replacement selection by the Croatian Government May 1996. There are now an estimated 300 local individuals (many former corporation employees) to form a core work force available for immediate employment, subject to the availability of funds authorized by the Government, to begin the necessary restoration of critical facilities and services necessary to operate, manage and conserve the World Heritage Site.

In the postwar transitional period, it remains unclear what the current park staffing organization is, or will be. Uncertainty with respect to new legislative mandates, budget constraints, multiple priorities, emergency repair and park restoration requirements require the complete focus and attention of the park staff, as it exists. Further, it is evident that institutional uncertainty with the new domestic and international definitions and standards of "national park" management, criteria and structure are an unfamiliar, and unknown concept. It may be particularly constructive for the park authority to analyze other national park organizational structures, and/or seek the advice of national park professionals from elsewhere, to assist in the development of the necessary administrative and management framework for addressing the emergent issues of Plitvice Lakes World Heritage Site.

Recommendation: Seek international assistance in the form of staff training and advisory services from experienced national professionals to assist in the development of an effective and cost efficient park management unit which would enhance not only Plitvice WHS management capabilities, but serve as an organizational model for the management and operations of other national park in Croatia.

2. Administration and Budget - As no distinct and separate park management unit existed prior to the war and corporation investments extended far beyond the requirements and the boundaries of the Park and World Heritage Site per se, there is no immediate basis for estimating either the administrative, or financial requirements of managing and operating the area to protect, conserve and present the site. It is evident, however, that seasonal peak visitor demands could require 2, or 3 times the staff during July/August, than during the remainder of the year. A realistic consideration of a seasonal contract and/or temporary work force balanced against the permanent requirements of a core staff has significant policy, administrative and budgetary implications; repair and maintenance, visitor management and services, and research/monitoring functions would lend themselves to a seasonal work force.

Recommendation: Seek international park professional advisory services to assist in the development of the staffing structure required to address management and operational issues.

3. Equipment - While the park corporation owned and maintained a fleet of over 150 vehicles and a variety of heavy equipment items, these were destroyed or stolen during the war. With the primary responsibilities of the park authority shifted to the protection, conservation and presentation of the natural features of the area in the post war period, a complete reevaluation of essential vehicle and equipment requirements is necessary.

Recommendation: Non-motorized methods of park patrol and protection should be a partial consideration.

4. Visitor Management - Over 100,000 tourists have visited the park since the reopening of the area in November 1995; over 10,000 of these visits took place between Easter 1996 and the Mission. Park staffing levels are not sufficient to provide either adequate visitor management, or resource protection.

Recommendation: Consideration should be given to the adoption of a recognizable "park uniform" for all park personnel. This would extend a visible and identifiable public presence to increase effectiveness in visitor management and information activities, and resource protection. As this is primarily a seasonal function, long term requirements may perhaps be partially met by students, teachers, tour operators and volunteers, as the area becomes repopulated. A carefully developed and expanded publication programme, combined with a well-designed and systematic signing programme would increase visitor management effectiveness and reduce staffing requirements.

5. Emergency Response Capability - At present, the park has neither an emergency response plan nor staff trained in first aid, medical emergencies, or fire fighting (structure, forest, or vehicle fires). There is no health clinic in operation, nor is a physician readily available. Medical and fire emergency vehicles, facilities and equipment were destroyed during the war. Limited law enforcement capability is available and is provided by a small force of local police located within the area.

Recommendation: Minimum essential equipment and basic training of personnel is an urgent requirement for visitor and employee safety.

9. Planning and Development - A revised "Spatial Plan for Plitvice Lakes National Park" is under development by the Government of Croatia to replace the still valid Spatial Plan of 1985. In the latter plan, it had been envisioned that the tourism capacity of the park be raised from 2000-3000/day, to over 10,000/day, with a projected doubling of the annual visitation to over 1.6 million, with 1.1 million visits taking place in the summer season. A draft of the revised new plan was not available for review or discussion during the Mission. However, it is understood that physical space utilization, function, the allocation of fiscal resources, site development, staffing, resource protection and visitor management will be addressed and affected by this critical document. The World Heritage Committee may wish to request the opportunity to review the revised Space Plan at a draft stage.

The Mission did review the Summary Document of the "Basic Elements of the Tourism Revitalization Programme in Plitvice National Park" prepared by the Institute for Tourism, Zagreb, May 1996. In this "revitalization plan", it is acknowledged that the 1985 Spatial Plan has serious defects and constituted a threat to the primary park resources had it been implemented. Stricter measures of environmental protection are called for with particular concerns expressed for sewage contamination, impact on the travertine terraces by visitors utilizing the existing pathways and boardwalks and traffic congestion; it further called for maximal efficient use of existing resources and internal business efficiency. In summary, the Tourism Institute Revitalization Plan called for:

- 1) "Conducting of economic activity in accordance with and adhering to the existing Croatian Law on National Parks (1994), thus banning any kind of activity that might endanger the environment, particularly the unique natural phenomenon of the Plitvice Lakes";
- 2) "Avoidance of anything that might interfere with long-term aims concerning the development and preservation care of the National Park already documented in existing plans or planned in accordance with newest insights";
- 3) "Establishment of such an organizational structure which will ensure the maximization of internal efficiency".

This revitalization plan, as authorized by the Ministry of Tourism, calls for the constructive and mutually supportive separation of the two inherently different missions within the park: (a) “The park’s mission to preserve, scientifically monitor and educate about the environment”; from, (b) “The business unit’s mission to generate profit”. If implemented, and as noted, if certain dilemmas of development, management and self-sustainability can be overcome in time, this plan could provide a logical framework for the long term restoration of world heritage values and park integrity, while gradually restoring economic viability to the region. A deficiency of the plan may be the lack of diagrammatic clarity with respect to the diverse requirements and responsibilities of the Plitvice Lakes Park Authority and suggested staffing organization to address these issues.

Recommendation: Within the Tourism Revitalization Plan, clarify and articulate the detailed and specific role of the Plitvice Park Authority for park management and responsibilities relative to tourism and visitor services.

An additional element of planning, development and management consideration presented to the Mission is the “Basic Guidelines from the Proposed Work Plan” recently prepared by the Plitvice Lakes National Park Authority. While the latter identifies basic guidelines for work and activities scheduled for the park, the guidelines do not have an approved status at this time. The Mission viewed these proposed guidelines as fundamental in concept, basic to the protection, conservation and presentation of Plitvice Lakes World Heritage Site and essential to the long term management and economic recovery of the area. The guidelines are appended to the Mission Report. The Park Authority has also proposed boundary modifications which would exclude two village sites and increase the area of the park by approximately 6000 ha; the proposed extension awaits decision.

Recommendation: Adopt and incorporate the Basic Guidelines, including boundary extensions, into relevant planning, management and development documents including the Space Plan and General Management Plan.

B. Programmes and Services

1. Public Awareness and Information - An onsite and offsite public awareness and information programme is integral to a successful resource and visitor management park protection and presentation effort. The implementation of a well designed and diverse initiative has significant implications in increasing cost efficiencies for park maintenance, protection and operations; it will certainly increase visitor awareness and satisfaction. In a larger sense, it will contribute to an increased understanding, appreciation and pride of the Croatian people in this internationally significant resource. Basic components of this programme could include a central information/visitor centre to provide a park overview, orientation, schedules and opportunities through the skillful presentation of media, maps and exhibits; a publication programme would provide more in depth information on various aspects and features of the park; a well trained staff would be required to respond to visitor questions and needs; a modest sales programme in local crafts and park publications would be complementary to the facility function, but food services would not. In low visitation months, the facility could serve various community needs for

meeting space and social activities. The Croatian Ecological Society and other NGOs would be envisioned to play an initial and crucial role in-situ and external programme efforts.

Recommendation: Together with appropriate partners and international assistance, develop and implement a detailed "public awareness and information programme as a central element of park management and operations.

2. Community Involvement - Although the region has been depopulated by war, there will be a need to gradually develop a new, and balanced relationship between the park and the nearby communities as individuals and families return to the area. Even under the altered management structure suggested with the separation of the park protection from commercial development, a close and integrated mutual support system will be necessary if both the park and community are to mutually benefit. There will be ongoing opportunities for employment, services, resource protection, sales opportunities and visitor needs to be met outside park boundaries which could be stimulated by park management.

Recommendation: A broad regional development plan should be developed with public participation to address land use, water supply, utilities, water treatment, settlement, transportation, economic recovery and other social issues. This would be essential to effective long term park protection and management.

VI. Physical Infrastructure of Park and Environs

A. Assessment of Park Conditions and Requirements

1. Structures and Facilities - During the five years of war, most of the structures and infrastructure of the World Heritage Site were destroyed or damaged; most of the residences in the vicinity were destroyed or abandoned. Much of the undamaged park staff housing within the park boundaries has been required to shelter displaced families from the surrounding area; park management staff and a significantly reduced support staff are being placed in housing as it becomes available. One of the smaller park hotels (Hotel Bellevue-140 beds) remains partially operational; 2 motels and 5 hotels (828 beds) within and immediately adjacent to the park (566 beds) have been damaged and/or deteriorated beyond repair. Campgrounds (within the park, and others external to the park boundaries with accommodations for 544) can be restored to operation. The majority of hotel restaurants (seating for 1610) and additional detached park restaurants (seating for 760) cannot be reopened. Vandalism and theft has been extensive and few buildings in the park and surroundings have escaped untouched.

Recommendation: Restore and maintain only those structures and facilities deemed essential for the effective management and operation of the park.

2. Utilities - The existing water supply system depends on taking water directly from the primary resource of lakes and streams in the immediate vicinity of the developed and high visitor use area. It served all park administrative and tourist facilities and nearby villages. The pumping

station has a design capacity of 150 liters/sec. It was evident to park staff that this pre-war demand (estimated at 20 % of available surface water) was excessive during peak summer visitation and low flow months of July and August, and in itself, a threat to the biohydrological system and the primary park resource. Pre-war considerations contemplated utilizing an alternative water source 50 km distant to adequately serve the region including the park. A World Bank loan for this purpose was under consideration in 1989.

The sewer and waste water system has deteriorated from 5 years without maintenance; the system requires immediate repair, restoration and rehabilitation to assure the primary resources are protected. This system collected waste water from park facilities in the developed area and carried it by gravity flow to a pumping station which was used to remove the waste water to a treatment facility outside the park boundaries. The pumps are being repaired at present. Public toilets in the Hotel Bellevue and operational restaurants and near the lake shore facilities (boat ramps) are undergoing repair. However, pre-war overloading, leakages and failures of this system were not uncommon. Adequate sanitary facilities will be essential in light of already increasing numbers of visitors and eventual resettlement.

Recommendation: A thorough engineering assessment of the adequacy and effectiveness of this system is required; upgrading of this system and conversion to a regional system with facilities and treatment outside the park watershed is essential for long term resource protection.

Solid waste material is currently being disposed of in small landfills scattered in areas of high demand and use (housing and hotel areas). As a result of the war, domestic debris, destroyed cars, damaged equipment, and building rubble is scattered on the landscape in, and outside the park. While the clean up has started, it will require significant time and funds to remedy this situation.

Recommendation: On going ground maintenance and solid waste disposal is an immediate and increasing problem in the park high use area which must be addressed on an urgent basis.

Electrical distribution is from a main grid system; service has been restored and is working satisfactorily in operational park facilities and occupied residences. Outdoor public lighting has been destroyed throughout the park and will require replacement and/or repair. The park telephone system was severely damaged and equipment damaged and/or stolen; new equipment throughout the area is required. The World Heritage Committee has provided partial funding for emergency radio equipment installation and maintenance for the park; the balance has been provided by the Government.

3. Park and service roads, parking areas, foot paths and raised walk ways - Commercial vehicles and automobiles heavily use the north - south transportation corridors currently through the park. Visitors and the primary park resources would sustain major benefits and greater protection if this through traffic would be rerouted away from the current alignment with the construction of a

by-pass road. Visitor safety would be increased, noise and pollution reduced, traffic congestion significantly reduced and a reasonable degree of protection from primary resource contamination from commercial vehicle accidents spilling hazardous materials (eg. petrol) would be assured with the construction of a by-pass road east of the park. The Government has authorized funds for a road relocation feasibility study. In preparation for the high visitor use season, the current road is undergoing extensive repair. Two large parking areas (several thousand car capacity) are located at the two park entrances.

Recommendation: A park by pass road is recommended. Reconsideration of the location and design capacity of these parking areas is warranted, prior to committing scarce resources to the full repair and restoration of these facilities.

The only access through, and around the lakes and connecting streams, is an intricate pattern of raised rough hewn chestnut-planked boardwalks which cross and recross the waterways. Although undamaged by the war, lack of maintenance for five years has resulted in significant deterioration of this system; portions of the boardwalk are extremely hazardous; portions of the system have wisely been closed to foot traffic and other portions should be, as a result of disrepair and decay. Pre-war maintenance required a 5% per year replacement schedule; prior to visitor full use of the area will require the replacement of in excess of 35% of the system. Subject to the availability of materials and labour, the park staff hopes to have portions of this system in both the upper and lower lake areas operational by the end of June 1996. Other hardened pathways in high use areas appear to be in relatively good condition, with the exception of lower lake shore trails where rising water has flooded portions of the trail and visitors are forced to climb up the steep hillsides to avoid areas of mud and water. Attempts to raise the foot surface above the inundation level have been made with the construction of low stone walls along the shoreline; the impact of such construction efforts and water level projections should be assessed prior to further work.

Recommendation: Consideration should be given to the overall design and structural adequacy of the boardwalk for future resource protection and visitor management requirements. Foot paths and raised walkways should be reassessed with respect to potential adverse resource impact, upgraded and/or relocated as necessary and maintained on a systematic basis.

Corporation housing in the park for the several thousand pre-war employees and families is now being converted to private ownership for the occupants. Over 200 flats and single employee quarters will be retained by the park management and provide shelter to displaced persons from the region. Essentially all houses and apartments were damaged, destroyed or vandalized during the war; these are selectively undergoing repair. Currently only about 300 people now live in the park. Community support facilities located within the park such as stores, health clinic, sports and theatre building, pumping stations and playgrounds are damaged and in disrepair; these are not being restored or rehabilitated.

Recommendation: Consideration should be given to the relocation of all park housing to outside the park boundary.

4. Other - The park had maintained a fleet of 150 vehicles which were destroyed and/or stolen during the war; all heavy equipment suffered the same fate. All electric motors, small machines, furniture and office equipment, hand tools, supplies, materials and parts inventories were damaged and/or stolen. Rowboats and two larger electric boats used to ferry visitors on the upper lakes were damaged; one electric boat and a floatilla of 7 rowboats have been repaired and are now in use. Informational and directional signs are damaged and will have to be replaced in anticipation of increased visitation.

Recommendation: Equipment needs should be surveyed and priorities established based on those items essential to park management and operations and resource management; contract services and intragovernmental cooperation should be encouraged. A coherent sign programme with the use of appropriate low maintenance materials should be developed in conjunction with a revised and updated visitor management plan.

5. Post-war Security - Neither the means, nor the staff exists to assure resource, visitor or facility security at this time. The small police office located in the park cannot address issues beyond minor crimes. No medical emergency response capability currently exists in the park; none of the park staff have had first aid or medical technician training; the health clinic has been damaged and looted; and, no emergency vehicles, or equipment exist in the park. There is no fire fighting capability in the park; park staff has not been trained in the suppression of structural or forest fire, and no fire fighting equipment exists in the park, or immediate vicinity.

Recommendation: All appropriate measures should be urgently taken to correct this situation.

B. Cost Estimates - War damages to park owned buildings, facilities and utility systems has been assessed at 17 million DM; damage to vehicles, equipment, communications, roads, visitor walkways has been estimated at an additional 3 million DM. Total damage is estimated at 20 million DM. An additional 3 million DM is the estimated cost of damages to facilities resulting from the UN Peace Keeping forces. The Government of Croatia has authorized an initial 3 million DM one year loan to the park authority to begin immediate repair to primary visitor day use facilities and access to selected travertine terraces and waterfalls; work has begun. Limited, but safe visitor access for these major features in portions of the 200 ha developed area may be possible in June 1996 subject to the availability of funds, labour, tools and materials. The rehabilitation of domestic housing in the area is being financed by additional funds from the Croatian Government.

VII. Sustainable Tourism

The Croatian Academy of Sciences concluded in a 1994 symposium that: "...the construction of tourist facilities at present constitutes practically the greatest and the only danger to national parks, but that tourism is still in addition to science, education and training, an unavoidable factor in defining the functions of a national park".

Over decades, the Plitvice Lakes National Park was developed within a collective corporation with tourism industry related holdings and investments extending from the coast to Zagreb. The Plitvice corporation provided and marketed the park as a central attraction to over 800,000 visitors per year in the 1980s. Prior to the war, over 2300 people were directly employed by the corporation to operate this complex and lucrative system, exclusive of the intertwined regional agricultural support to provision of food services for both tourists, and the corporation itself. Income from this park dependent operation was estimated at over \$80 million (US) per year; no estimate of annual operating costs was available. Economic returns were proportionate to increased marketing and incentives for park visitation, without respect to resource carrying capacity, or resource protection and management capabilities. In consideration of World Heritage values, it is unlikely this could have been considered a sustainable system without additional significant investments in the park infrastructure.

Recommendation: Take all reasonable and feasible actions to seek regional development funds to establish regional water and sewage treatment facilities, road realignments, resource management, visitor dispersal and security systems to minimize adverse environmental, economic and social impacts which would result from the deterioration of the park resources and related loss of sustainable tourism. Distribute visitation away from the 200 ha development zone immediately adjacent to the primary resources.

A. Assessment of Existing Services, Infrastructure and Income Generation Capabilities

As noted in the assessment of the park infrastructure, all existing tourist services were disrupted and halted during the war; the large majority of accommodations and restaurants were damaged beyond feasible repair by the war, and/or badly damaged by lack of maintenance during this period. Only one linked vehicle of several survived the war and is being used to move tourists between the primary lake and stream features in the 200 ha developed area; and one electric boat is operational to transport tourists across an upper lake and to provide access to the board walk around the upper waterfalls. For an interim period, locally produced cakes and breads are sold by a few remaining villagers in parking areas. Prior to the war, a two tiered park entrance fee system was used (foreign visitors paid approximately twice the entrance fee amount as Croatian nationals); pre-war visitation often exceeded 10,000 tourists/day in July and August, with over 800,000 visitors/year in 1989. A single entrance fee is now in place and all adult tourists pay the equivalent of 3 DM. Park management operates all remaining existing services and facilities and collects all revenue, as it did prior to the war. However, the 1994 National Park Law, the

Tourism Revitalization Plan and the Basic Work Plan Guidelines appear to remove this responsibility from the park authority and shift such commercial enterprises (except for fee collection) to perhaps privatized arrangements through purchase, lease and contract.

According to park management, UNPROFOR and Croatian security thoroughly checked the park for mines, material and hazardous materials prior to allowing tourists to return to the area; none were found. Since the park management staff has been able to return to the area (November 1995), an estimated 100,000 visitors have come to Plitvice Lakes; 10,000 of these in the last month. Unlike during pre-war years when two thirds of the tourists were foreign, post war visitors have been predominately Croatians. It is recognized by the park management authority that with the current state of disrepair to facilities, utilities, access and services, a visitor flow of anywhere close to the pre-war levels could exacerbate the deteriorated infrastructure situation, would have an adverse impact on the world heritage values and resources of Plitvice Lakes and could have a long lasting negative affect in terms of visitor satisfaction. It is agreed by park authorities that it would be highly preferable to start the 1996 season with a comparatively small and even limited number of visitors (perhaps up to 2000/day), after critical essential repairs to the utilities, water/sewage system and trail/boardwalk access are completed. Clearly it would be inadequate to simply repeat past mistakes in a hurried restoration effort to reestablish the pre-war operational status quo.

B. Marketing Potentials and Promotion

A Tourism Revitalization Plan for Plitvice Lakes has been prepared by the Tourism Institute (Zagreb) utilizing a team of environmental and tourism experts and approved by the Ministry of Tourism. The plan is sensitive to maintaining, protecting and presenting the World Heritage values and ecological sensitivities of the park. Further, it appears to strike a reasonable balance between conservation and the economic interests of the tourism industry. The Revitalization Plan is explicit that the ultimate park management goal must be to preserve the unique features and processes of the park, with all other interests subordinated to that primary objective. It is evident from past visitor records that the area has marketability in its own right.

The unexplored area of marketing and promotion programmes for Plitvice Lakes World Heritage Site per se, will be to more adequately prepare and orient the visitor to realistic expectations and the appreciation of the area's natural values; adult playgrounds can be amply marketed and supplied elsewhere. A public relations campaign instigated on a national and international scale, indicating that the treasure of Plitvice World Heritage Site has survived the ravages of war would be advantageous. The elements of harmony between man and nature and the self-evident intention of the Croatian people to assure the protection of World Heritage values, and live peacefully with members of other ethnic groups, should be clearly and credibly recognized in this public relations effort.

C. Options and Opportunities - A Long-Term Perspective

Plitvice Lakes National Park and World Heritage Site rightly deserved and enjoyed an excellent reputation as a competitive and worthwhile destination point for Croatians, Europeans and tourists from every continent. However, in the 1980s it was becoming increasingly clear that the carrying capacity of both the park infrastructure and the primary resources was being seasonally exceeded on a regular and predictable basis. Rather fundamental changes in the infrastructure, design capacity and visitor circulation would be required to avoid a repetition of a damaging situation which in the long run would destroy both the area's marketability and the integrity of the World Heritage Site. Park management officials (past and present) have given these issues considerable thought and attention.

With adequate professional planning, design and infrastructure development based on reliable scientific data and combined with capable and effective visitor and resource management, Plitvice Lakes World Heritage Site can be presented in time, and in a manner that will make a significant long term contribution to the regional and national economy, without endangering the irreplaceable resources recognized as internationally significant. A decisive factor in the recovery process will be the rate at which the area stabilizes with the slow return of residents and a labour force. Beyond the most urgent remedial actions, an immediate restoration of effective management and visitor service levels is unrealistic.

Recommendation: A several year incremental implementation of the Spatial and Tourism Revitalization Plans is advised. During this time, the preparation of a General Management Plan for the park, feasibility studies, data sharing documents, base line resource monitoring programmes and marketing plans should be prepared, evaluated, elaborated on, and implemented. At the end of this period, a reassessment and evaluation of the situation would provide the basis for corrective actions as required and the execution of longer range actions.

The economic value and returns from Plitvice Lakes could not, and should not be measured solely on park entrance fees. Nor should the urgent requirements to reestablish a park infrastructure and implement a visitor and resource management programme be initially dependant on the immediate ability of the park authority to generate income from the resources; this would stimulate a reversion to over exploitation of the resources. Regional park-related income generation will, under the proposed system and focus of park management, require a complex cost/benefit analysis to determine a "true value" to Croatia. It is likely that such widespread revenues from diversified employment opportunities and related sales, support services and products outside the park will in time, well exceed previous levels of park income.

D. Tourism Related Priorities and Guidelines

The protection and conservation of the primary park resources and World Heritage values must at this juncture, precede the presentation of the area to visitors. With visitation increasing,

immediate priority should be given to assuring the resources can be, and are, fully protected, and that visitor safety and protection can be provided in the park.

The following short term action guidelines are identified and recommended:

- (1) On an urgent basis, continue and complete all necessary and remedial replacement, repair and maintenance work on the most frequently used installations including toilets and sewage treatment, water treatment, pathways and boardwalks, transportation facilities, emergency communications and signage;*
- (2) Minimize efforts to reestablish pre-war visitation levels, until such time as tourists can be confidently and adequately managed by the park staff.*
- (3) Allow visitor access and use in the park only to those areas which have been fully restored to adequate resource and visitor protection standards.*
- (4) Provide strict quality control over all aspects of the park. In this crucial post war period, those areas of the national park which are accessible and the services that are rendered must be of excellent quality. The public image and reputation of park and of park management authority will be built on the visitor experiences of this season. All services that cannot be provided at high quality standard, should not be provided.*

F. Summary Tourist Management Recommendations

It is recommended that certain key philosophical and physical restructuring elements be addressed within the essential management and operational requirements of the World Heritage Site:

- (1) Realignment of the present national park through road from Zagreb to Dubrovnik which leads through the park to the villages of Dreznik-Grad, Vaganzc and Licko Petrovo Selo, a few kilometers east of the park. The new alignment would join the present main road at the village of Prijeboj. This would remove heavy commercial vehicles, including those carrying hazardous materials such as fuel, and high numbers of pass through passenger vehicles which currently congest the park. This is an urgent matter;*
- (2) Relocate the Park Entrances 1 and 2 and related facilities to locations further away from the primary resources and at the periphery of the park. Over time, it may be both desirable and feasible to ban private automobiles from the primary resource area and/or the entire park, if a suitable and appropriate alternative public conveyance system can be developed;*
- (3) An expanded system of footpaths, non-motorized bikeways and horse trails along preexisting forest roads, or new carefully located and developed trails in the park may hold promise in dispersing high visitor use and impact away from the primary resources and traditional use area of 200 ha;*

- (4) *There is no need to rebuild the visitor/tourist infrastructure (hotels, restaurants, facilities and services) in the former development zone. This should be discouraged and all such commercial development could suitably and conveniently be located outside the park boundaries. This is a critical policy decision requiring immediate attention;*
- (5) *Additional park entrances could be considered to allow for a more even distribution of park visitors and to alleviate congestion in peak seasons and reduce the focus of impact on primary resources. Such an option may allow the park to eventually absorb increased numbers of visitors on any given day, but would require carefully planning and design so as not to potentiate additional impact problems;*
- (6) *The various zoning types on current resource base maps are confusing and perhaps misleading with respect to either resource sensitivity, or potential visitor use. After careful ecological analysis, a simplified system could be adopted which would assist in the elaboration and expansion of managed visitor use and World Heritage Site "presentation", while still assuring the protection of primary and uniquely sensitive resources. This could be done in close conjunction with a vigorous information and education programme for an overall positive affect;*
- (7) *The appropriate development of external and/or peripheral features outside the park boundaries have the potential for involving both communities in visitor transactions and reducing pressures on the park for the provision of similar services (picnic areas, overnight accommodations such as campgrounds and cabins, photographic overlooks, sales outlets, supply and convenience stores, and perhaps guide services). This should be encouraged;*
- (8) *A well designed and new visitor centre could provide a basis for a greater emphasis on orienting the visitor to having a low impact quality experience while in the park and World Heritage Site. Presenting the uniqueness of the features and natural processes in such a facility could shift the visitor attention from merely a pleasant destination point, to the park as a special place of learning, certain select types of enjoyment and an awareness of unusual aspects which may not be readily observed, or noticed otherwise. A high quality media presentation, a range of guide books, information, park maps and displays would be integrated into a coherent presentation to enhance the visitor's appreciation of the area, and perhaps be used in the off season, as a community facility for meetings, special presentations and events.*
- (9) *Professional merchandising could produce a series of quality sales items, regional souvenirs, crafts, local products and other items to be purchased by the visitor. Such items would contribute to both appropriate revenue generation and value added appreciation of the park in the context of regional resources and a distinct regional and national identity.*

VIII. Statutory, Regulatory and Policy Analysis - In accordance with the terms and objectives of this Mission and to assess the status of conservation and management capabilities of Plitvice National Park and World Heritage Site In Danger, the following review of legal, policy and institutional framework is provided.

A. Summary of International Obligations and Related National Legislation

1. The World Heritage Convention - Article 5 of the World Heritage Convention stipulates each State Party shall endeavour: (a) To adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes; (b) To set up within its territories, where such services do not exist, one or more services for the protection, conservation, and presentation of the cultural and natural heritage with an appropriate staff and possessing the means to discharge their functions; (c) To take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage.

The Republic of Croatia as a State Party to the Convention is bound by performance obligation of Article 5, but is recognized to be a special situation, as sovereignty over Plitvice Lakes World Heritage Site and the surrounding region was lost for five years as the direct result of armed conflict. Nevertheless, particular efforts such as the formation of a park administration in exile and requests to the World Heritage Committee and the World Heritage Centre, UNESCO, effectuated two investigative missions with the assistance of UNPROFOR, and the provision of emergency radio equipment during this period.

2. A National Legal Framework for Nature Conservation - The Republic of Croatia is a mixed system of centralized and decentralized protected natural area administration. As the central responsible Government entity, the State Agency for Cultural and Natural Heritage does not have the status of Ministerial level with consequences at the top-level decision-making. The State Agency is primarily responsible for policy and regulatory framework on nature conservation in Croatia.

a) The Nature Conservation Law of 1994. In accordance with provisions of this statute, the Government is to be supported in this function by an Advisory Council composed of Protected Area directors, representatives from several Ministries including Tourism, local authorities, the Academy of Science and others. The Advisory Council is not yet convened. The decentralized element in this system are the public park authorities that provide day to day management of the designated National Parks, such as Plitvice Lakes, which is in itself a legal entity since 1949. Under the 1994 statute, national parks are to be operated and protected by a Management Council (policy guidelines) and an appointed Managing Director.

In addition to the above institutions, a number of specific Government Ministries, agencies and institutions are responsible for various actions affecting natural resource management in Plitvice Lakes; included would be road traffic, water supply, tourism, law enforcement, planning and development and research among others. The role of local authorities (counties and municipalities) is difficult to assess in light of the mass destruction and abandonment of villages in, and outside Plitvice Lakes.

The Nature Conservation Law of 1994 is the basic updated legal instrument establishing protected area categories, management regimes and organizational structures; national parks constitute one such category. It is noted that "biosphere reserves" exist as a programmatic endeavour, rather than as a legal entity under current law. The statute resulted from a broad-based consultative process involving agencies, experts and the NGO community. A 1993 workshop convened by the Croatian Academy of Sciences provided a strong conservation orientation emphasizing the merits of the protection of lakes and forests; the need for protected areas to benefit from research and visitor control was also emphasized.

- b) The Spatial Plan. This references the basic relevant land-use planning instrument identified in and required by the Nature Conservation Law. The Spatial Plan in force for Plitvice Lakes was prepared in 1984 (ie. prior to Croatian independence) and is acknowledged as obsolete and inadequate. Preparations for a new spatial plan for Plitvice Lakes are underway. Basic terms of reference approved by the Government provide a basis for the elaboration of detailed plans. The responsible Government authority for Spatial Plans is the Ministry for Urban Development, Construction and Housing with its Planning Institute cooperating with the State Agency for Cultural and Natural Heritage and the Plitvice Lakes Park Authority. The Spatial Plan will establish a zoning system for the park.
- c) Internal Regulations. A new draft of regulatory guidelines will be adopted in the near future. This instrument will provide basic guidelines for the day to day operations and management of Plitvice Lakes. It is anticipated hunting will be prohibited, fishing will no longer be allowed and limits will be placed on tourism-related development and activities. Enforcement obligations and responsibilities were not clarified for the Mission.
- d) Land Tenure. 80% of Plitvice Lakes is public property; private lands and property is essentially abandoned. The Park Authority follows the Government policy to allow refugees and displaced tenants to retain ownership. While the Park Authority is therefore precluded from related land acquisition under the current circumstances, present policy does not appear to prevent land and property sales by absentee land owners and purchases by speculators.
- e) Environmental Impact Assessment. All tourism development activity in Plitvice Lakes is subject to compliance with Croatian statutory and regulatory requirements for environmental impact assessment.
- f) Species Protection. Under existing law, species such as the brown bear, wolf and other endangered species inhabiting the park are protected. Further baseline inventory efforts may reveal additional endangered species within Plitvice Lakes National Park.

In summary, while an ample statutory, policy and regulatory framework to effectively protect, conserve and present Plitvice Lakes National Park and World Heritage Site exists, insufficient

time has elapsed to assess the success of these measures and controls. A possible organizational deficiency may exist in the absence of direct Ministry level representation for the protection of Plitvice Lakes and assuring a uniform application of law and regulation. Statutory compliance will require the preparation of a management plan - Spatial Plan for the area; at that critical juncture, further assessment would be valuable.

Appendix 1: LIST OF PARTICIPANTS

World Heritage Centre

Team Leader

Robert C. Milne - Principal Advisor to the Director, The World Heritage Centre. U.S. National Park professional retired (park policy, management, planning, ecological research, training, environmental education and visitor services; former Chairman of intergovernmental World Heritage Committee and Vice Chairman IUCN Commission on National Parks and Protected Areas (Nearctic).

Team Members

Michel Lincourt - Resident Advisor to the World Heritage Centre. Canadian architect and planner; project design, planning and development; facility and infrastructure assessment and rehabilitation; community planning and development.

Gernot Brodnig - Programme Specialist, World Heritage Centre. Austrian environmental policy specialist; policy development; statutory and regulatory mechanisms; natural resource assessment and monitoring.

Stein Kollungstad - Representative of the Norwegian Ministry of the Environment and Nordic World Heritage Office, Oslo. Natural resource assessment and protected area management.

Martin Schneider-Jacoby - German ecologist; project manager at the European Natural Heritage Fund; landscape ecology; natural resource management.

Peter Skoberne - Slovenian natural resource conservation (botanist) and public awareness specialist; member of IUCN Commission on National Parks and Protected Areas and Species Survival Commission (Europlant Group); accomplished author and photographer.

Walther Czerny - Austrian tourism consultant, Vienna. Partner and Managing Director ATC; tourism feasibility studies; innovation, creation and implementation of tourism policy and products; investment counseling and promotion; market planning for hotels and regions; planning and implementation of eco-tourism programmes.

Republic of Croatia

State Agency for Cultural and Natural Heritage:

Professor Ferdinand Meder, Director

Professor Ivo Bralic, Director, Department for National Parks and Natural Areas

Head of International Relations

Plitvice National Park and World Heritage Site

Andjelko Kruzicevic, Park Managing Director
 Stipe Dujmovic, Director of Park Protection
 Vladimir Kukina, Civil Engineer/Construction and Maintenance
 Vinko Bartolac, Promotion/Public Relations
 Ela Pejicic, Park Guide/Interpreter
 Josip Movcan, former Park Director (retired)

Ministry of Tourism/Institute of Tourism

Dr. Zoran Klaric, Tourism Planner
 Neven Ivandic, Economist

Academic

Professor Dr. Branimir Prpic, Forest Faculty
 Professor Dr. Ante Marinovic-Ufelac, Architectural Faculty
 Dr. Paula Durbesic, Science Faculty/Ecological Society (NGO)
 Dr. Milorad Mrakovic, Science Faculty

UNESCO Commission, Zagreb

Dino Milinovic, Commissioner for Relations with UNESCO

Other

- 1) Press/Media
- 2) References
- 3) Schedule and Itinerary

Acknowledgements: The intergovernmental World Heritage Committee has expressed on going concern for World Heritage in Danger and specifically authorized this Mission to Plitvice Lakes World Heritage Site. The World Heritage Centre gratefully acknowledges the assistance, support, contributions and arrangements of the Republic of Croatia as represented by their Delegation to UNESCO (Paris), The State Agency for Cultural and Natural Heritage, the Director of Plitvice National Park and World Heritage Site and his dedicated and courageous staff, and invited academic and local specialists without which this Mission could not have met its objectives or terms of reference. The Ministry of Tourism/Tourism Institute provided invaluable information, as did individual members of the Croatian Academy of Sciences. The Nordic World Heritage Office and the Norwegian Ministry of Environment, Oslo, provided the support and complementary expertise necessary to address complex issues of on-site effective park management for the protection, conservation and presentation of World Heritage values. The Centre also wishes to thank the UNESCO National Commission, Zagreb, Croatia for facilitating required Mission communications and arrangements, and the IUCN/CNPPA for identifying the necessary and highly qualified expertise to assess the status of World Heritage values under *criteria ii* and *iii* as reflected in water quality and quantity related to travertine terrace formation, wildlife populations, forest conditions, vegetation and land use.

Basic Guidelines from the Proposed Work Plan

The Plitvice Lakes National Park management hereby identifies the basic guidelines of its work and activities schedule to be as follows:

1. A priority and permanent task of the National Park management is the protection of: forests and waters, calcereous sinter formations and calcareous sinter creators, being the key factors in the Plitvice Lakes biodynamics, which is why they have become the heritage of the entire mankind. Special attention needs to be paid to a permanent control of the supply waters and lakes quality.
2. It is necessary to continue the scientific determination of which ground and surface waters, with their pertaining forests, need to be protected against economic exploitation, as well as any kind of pollution. For this purpose, it will be necessary, based on the so far scientific realizations, to include new areas within the National Park limits, and protect them legally. Economic exploitation of woods needs to be stopped immediately on the entire National Park territory. Any interventions involving the National Parks woods would be permitted only in compliance with the Forests Management Act which is currently being passed, or, another solution lies in a thorough revision of the existing Programme.
3. One among the priority tasks is to complete the data on flora and fauna and their environmental properties through research, as well as to organize monitoring on the National Park's territory.
4. Based on the protective/environmental foundations of development and other planning, harmful impact of man has to be reduced to the lowest level possible. In this respect, the new Development Plan has to envisage, within a reasonable amount of time, the moving of the existing tourist and their accompanying facilities, with a part of the housing units, to wider access areas, but by all means outside the narrowest N.P. zone itself, including the fundamental phenomena zone. All the inhabitants of the National Park area must undergo basic environmental training.
5. On the National Park territory, the envisaged tourist and other activities need to be strictly controlled.

6. The National Park area needs to be entirely free from any public traffic, whereas visitor transportation, where necessary, must be organised using transportation means with as low environmental impact as possible (electric or similar drive).

7. In view of the Plitvice Lakes integral protection, it is essential to solve the water management related issues, and particularly wastewater drainage, in a safe and good quality manner. As regards the needs of tourist facilities and local households, the waters of the Plitvice catchment area and their sources must not be utilized in the narrowest protection zone.

8. The Plitvice Lakes National Park management must both maintain and expand cooperation with international nature conservation institutions (UNESCO - Protection Department, IUCN, The European National Parks Association) and coordinate its activities with their nature protection criteria that may be applied on the National Park's territory.