
WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

ST. PAUL SUBTERRANEAN RIVER NATIONAL PARK (PHILIPPINES)

1. DOCUMENTATION

- i) **IUCN/WCMC Data Sheet:** (4 references).
- ii) **Additional Literature Consulted:** Middleton, J. & T. Waltham. 1986. **The Underground Atlas.** 239 p; Olsen, D.M. and E. Dinerstein. 1998. **The Global 200: A Representation Approach to Conserving the Earths Distinctive Ecoregions.** WWF-US; Protected Area Management Board, Palawan. 1996. **Saint Paul Subterranean National Park Management Plan, 1996;** IUCN. 1996. **Red List of Threatened Animals;** Davis S. *et al.* eds. 1995. **Centres of Plant Diversity,** IUCN/WWF; IUCN. 1997. **A Global Overview of Forest Protected Areas on the World Heritage List.** IUCN; Villalon, A. 1999. **Profile of National Parks in the Philippines.** Protected Areas and Wildlife Bureau, Department of Environment and Natural Resources. Quezon City. 174 p; Republic of the Philippines. 1991. **An Act Providing for the Establishment and Management of National Integrated Protected Areas Systems.**
- iii) **Consultations:** 5 External reviewers, relevant officials from government and non government organisation in Philippines.
- iv) **Field Visit:** J. Thorsell, January 1993; D. Sheppard and H. Friederich, February 1999.

2. SUMMARY OF NATURAL VALUES

The nominated site, the St. Paul Subterranean River National Park (SPSRNP), is located in the Saint Paul Mountain Range. It is north-west of Puerto Princesa, the capital of Palawan province. Palawan itself is 490km south-west of Manila (see Map 1). The SPSRNP lies within the jurisdiction of the government of the city of Puerto Princesa. The nominated site is a revision of an earlier one deferred in 1993, due to questions about inadequate size. The 1993 IUCN Technical Evaluation noted that, while the site was suitable for World Heritage listing, the area was too small to adequately protect its underground river watershed and to ensure the long-term viability of its significant biodiversity. The original 1993 nomination, of 5,753ha was thus revised, and an expanded nomination was considered by the World Heritage Bureau in July 1999. This was further referred back to the Philippine authorities for final modification and legal definition of boundaries. The State Party submitted a draft Presidential Proclamation declaring a nominated area of 20,202ha and this adds a 14,449ha buffer zone (hereafter called the buffer zone) to the original 1993 core nomination area. The draft Proclamation noted several points of GPS coordinates, but no map was included.

SPSRNP consists of various landforms, the most impressive of which is the karst mountain landscape of the Saint Paul Mountain Range. The topography varies from flat plains to rolling hinterlands and hills to mountain peaks. More than 90% of the park comprises sharp, karst limestone ridges around Mount St. Paul which is itself part of a series of rounded, limestone peaks aligned on a north-south axis, along the western coast of Palawan. The area's natural values are significant, and have been previously assessed by IUCN as meeting World Heritage natural criteria (iii) and (iv). quality. The focus of the area is a spectacular karst landscape containing an 8.2km long subterranean river, one of the most unique of its type in the world. The underground river includes many speleotherms, and

several large chambers exist, up to 120 meters in width and 60 meters in height. The limestone mountain has extensive karst features, both surface karst (pinnacles, shafts, dolines and limestone cliffs), as well as an extensive underground river system. A distinguishing feature of the river is the fact that it emerges directly into the sea, and that the lower portion of the river is brackish and subject to tidal influences. The underground river (the Cabayugan River) arises approximately 2km south-west of Mount Saint Paul at an altitude of 100m, and flows underground for almost its entire length to an outflow into St. Paul's Bay. All rivers and associated tributaries are within the SPSRNP nomination, which is important in relation to catchment impacts on the water quality of the Cabayugan River.

Three forest formations are present: lowland, karst and limestone. Approximately two-thirds of the nomination is forested, dominated by hardwood species. The karst forest is restricted to small pockets where soils have developed. In the coastal area, mangroves, mossy forest, sea grass beds and coral reefs are also found. The significance of forest biodiversity within the nomination is discussed in Section 3 of this report. The Alugan Bay component of the SPSRNP has been noted by a number of reviewers as having national significance for its mangrove forest. The faunal diversity in the SPSRNP is moderate, especially with respect to invertebrates. Endemic mammals include the Palawan tree shrew, Palawan porcupine and Palawan stink badger. Dugong have been recorded in the marine component of the park. Monitor lizard and marine turtles are also present. The Palawan Peacock Pheasant has also been recorded in the SPSRNP (recognised as an internationally threatened species). The subterranean fauna has not been studied in detail, but comprises fish, prawns, snakes and insects. The tunnel and chambers of the subterranean river are home to abundant populations of swiftlets and bats. Eight species of bats are also found in the cave, and cave swiftlets nest on some of the underground boulder piles. Further studies are required to determine the extent and diversity of the underground fauna.

3. COMPARISON WITH OTHER AREAS

St. Paul Underground River has similar geomorphological qualities as some other limestone areas in South and Southeast Asia, notably Gunung Mulu National Park in Sarawak, Phong Nha Nature Reserve and Ha Long Bay in Vietnam, Lorentz National Park in Irian Jaya and Gomantong in East Malaysia.

The vast majority of existing World Heritage karst sites are in temperate regions. Within the tropical karst region the following comparisons can be made. Ha Long Bay in northern Vietnam contains significant karst topography and caves, in a spectacular coastal setting. This site was not nominated on the basis of these values but the potential World Heritage significance of karst values within the site has recently been reviewed. The caves in Ha Long Bay are mostly small in comparison to the St. Paul Subterranean River, but they do have ancillary value as they provide key evidence of changing sea levels on the Sunda Shelf. In Thailand, the Thungyai-Huai Kha Khaeng Wildlife Sanctuaries contains significant areas of lowland riverine forest and other forest types more typical of strongly seasonal tropical climates. This property includes low-relief limestone terrain with some caves, and karst wetlands.

The major feature of the nominated area is the 8km underground river. There are many underground rivers in other karst regions around the world. For example, the Clearwater Cave and the 37km Melinan River in Sarawak's Gunung Mulu National Park have arguably more significant underground rivers. Within the Philippines a 9km river cave exists at Callao on Luzon. The underground river in St. Paul is not as dramatic as similar features found in existing World Heritage sites in Slovenia's Skocjanske Jama, Kentucky's Mammoth Cave or the Canadian Rockies Castleguard and Maligne River Caves.

One feature that distinguishes St. Paul, however, is that the underground river flows directly into the sea amidst a tropical coastal setting. The underground river flowing into the sea, and the associated

tidal influence, makes this an outstanding feature. One reviewer also noted that St. Paul warrants special consideration simply because it is one of the few such rivers which the general public can easily experience and appreciate.

There is one other World Heritage site in the Palawan Biogeographic Province: the Tubbataha Reef Marine Park. However, this protects different values from those identified for St. Paul. Palawan is an important biogeographic province, with a rich biota drawn from both Malaysian and Pacific sources. Palawan is distinct from the rest of the Philippine archipelago as it lies on the Sunda Shelf and has derived most of its fauna from Borneo during recent geological times.

The biodiversity within this site is considered significant. The Palawan Moist Forest, which is represented within the nomination, is noted in WWF's Global 200 report as having the richest tree flora of Asia, with high levels of regional and local endemism. The Palawan Moist Forest also has the largest and richest examples of limestone forests in Asia. The St. Paul National Park is also noted, in a recent global overview of forested protected areas on the World Heritage List (IUCN, 1997), as a forested protected area which may merit consideration for World Heritage nomination. This was reinforced in an expert consultative meeting on World Heritage Forests, which was held in Sumatra in December, 1998. This meeting considered St Pauls to be a tropical forest site of high biodiversity value, with high World Heritage potential. The conservation significance of this forest at the international level is heightened when considered in the context of the high levels of past and current deforestation in the Philippines and in the region. For example, the Environmental Legal Assistance Centre (ELAC) of Puerto Princesa notes that: "in 1903, there were more than 21 million hectares of forest in the Philippines, or more than half of the country's total area. Today, less than 6 million hectares of forest are left. In 1994, there were only 800,000 hectares of old growth forest left". Palawan has, in fact, been described as "the last best hope" for forest conservation in the Philippines. The role and maintenance of St. Paul takes on a special urgency in this perspective.

The marine component of the property is a small but important feature of the nomination and the mangrove swamp, adjacent to the limestone hills, adds to the what is a spectacular natural setting.

In conclusion, SPSRNP has a number of features that combine to distinguish it from other areas. These include:

- ◆ The underground river flowing directly into the sea amidst a tropical forest setting, with its associated tidal influence;
- ◆ The forests within the nomination which are amongst the most significant in Asia, being representative of Palawan Moist Forest, and which have been identified in a number of expert reviews as having World Heritage potential; and
- ◆ The fact that this is the most important site for conservation in the Palawan Biogeographic Province.
- ◆ The coverage of a complete "mountains to the sea ecosystem", within the nomination

4. INTEGRITY

4.1. Boundaries

A Presidential Proclamation has declared that nominated area of 20,202ha as the St. Paul Subterranean Natural Park, under the Philippines NIPAS Act of 1992. The Proclamation includes specific GPS co-ordinates describing the nominated area. The area is shown in Map 2 and includes land within the boundaries of three Barangays (Barangay is an administrative boundary for local purposes).

There are two relevant points which were reinforced by the 1999 field inspection. First, the reason for the deferral of the original nomination was to ensure adequate protection of the catchment of the underground river, and thus ensure protection of the natural values, particularly those related to water quality and quantity of the underground river. This river and its tributaries are all within the Barangay Cabayugan. This is thus the critical area for protecting any potential World Heritage values in the nomination. The adjoining Barangay Marufinas also has important biodiversity values, particularly for forest conservation. The natural values of the other Barangays, while still important, are less significant in the context of potential World Heritage, as these areas are not essential for the protection of the catchment values of the subterranean river, and are less important for biodiversity conservation. IUCN thus notes that the current nomination is confined to the core area of the park and to the immediately adjacent Barangays (Tagabinet, Cabayugan and Marufinas).

It should be noted also that Ulugan Bay, while considered by IUCN to not be of World Heritage status, is very important for mangrove conservation, at a national level. This significance should be recognised, possibly through designation as a Ramsar site, if agreed by the State Party.

Second, the nomination notes that consultation with key stakeholders within the nominated area occurred in December, 1997. However, the field inspection in February, 1999 noted a lack of clear agreement by relevant Barangays to the inclusion of lands within the nominated area as World Heritage. This was addressed by the State Party through further consultation. Formal resolutions have been submitted from the three Barangays surrounding the St. Paul Subterranean River National Park noting their agreement to include their respective areas within the revised nomination boundaries.

4.2. Legal Status

The previous IUCN review recommended deferral until a legal definition of boundaries is available. Clear legal protection of natural values is essential before the area could be considered for World Heritage listing. The boundaries of the nomination have been incorporated within a Presidential Proclamation, which declares the nominated site as protected area under Republic Act 7586 (NIPAS Act of 1992).

IUCN also notes that the legal owner of the Park is the City Government of Puerto Princesa, by virtue of the Memorandum of Agreement (MOA) for Devolution, between the City Government and the National Government. Under this MOA, the City Mayor is the authority with full responsibility over the property and all management decisions for the Park are made by the Mayor in consultation with the Protected Areas Management Board (PAMB). This agreement means that the area is protected at a local rather than a national level. This arrangement appears to have worked effectively to date, largely reflecting strong support at the local political level, particularly from the City Mayor. If this area is inscribed as a World Heritage site, IUCN considers it important that the status of natural values is monitored effectively over time, to ensure that these values are not compromised by any change in local management perspectives which may occur in the future.

4.3. Management

Management can be considered at two levels: the core zone and the buffer zones. Management of the core zone (comprising the Park) is currently very effective, reflecting strong local political support as well as reasonable funding and staffing levels. Funds raised from tourists visiting the site are increasing and earnings are deposited into a trust fund, with expenditures from the proceeds allocated for park management purposes. St. Paul is the only National Park in the Philippines that earns an income from fees in this way. Staffing levels are adequate but more training in park planning and management is required. Current park management builds on the foundation of earlier work, particularly that started when the park became the subject of an internationally financed Debt-for-Nature Swap Programme in 1989, through WWF – The World Wide Fund for Nature.

There is a management plan for the Park which sets out relevant objectives and programmes to ensure effective management of the Park. The plan provides for zonation within the park boundaries. IUCN considers the management plan for the park to be a professional document, but more resources are required in order to fully implement the plan.

Management of the buffer zone is covered by management guidelines which seek to regulate activities to minimise impact on the core zone. These guidelines are presently being prepared by the PAMB with the assistance of the European Council-Palawan Tropical Forestry Programme (EC-PTFFP), which aims to establish sustainable protective measures for the agricultural land within the buffer zone. It further aims to introduce protective measures that conserve natural resources and improve the quality of life of the area's residents. IUCN considers that the existing management plans for the core zone and the management guidelines for the buffer zone should be consolidated and harmonised, in order to effectively protect the catchment of the underground river. It is noted that such harmonisation is underway at present and this is to be commended.

4.4. Threats

There are several threats to the core zone of the SPSRNP from activities in the adjacent catchment area. The main threats are from forest clearing and agricultural activities. Tourism in the area, if not carefully planned and implemented, also has great potential to adversely impact on the natural values of the core zone. At present, tourism is at low level although it is increasing. Tourism management objectives for the Park are set out in the management plan and these appear relevant and effective. It is important that a tourism development strategy be developed for the entire nomination, (core and buffer zone) which enhances visitor appreciation of nature while protecting natural values. Water quality in the underground river is invariably affected by upstream agricultural activities in the catchment area. Evidence of these activities was witnessed by the IUCN mission team in 1999. There is need for the previously mentioned management guidelines to cover issues such as removal of pollution inputs to the river.

5. ADDITIONAL COMMENTS

5.1. Regional Integration

The nominated area demonstrates the importance of integrated regional planning, if core World Heritage values are to be protected. It is noted that all of Palawan is covered by an Integrated Conservation and Development Plan. Within the nomination, the Palawan Forestry Protection Programme is currently addressing many of the issues mentioned above, within the buffer zone.

5.2. Cultural Heritage

St. Paul Cave was known to local people since ancient times, in their thoughts it was inhabited by a spirit that prevented them from entering the cave. The park's territory and surroundings are the

ancestral lands of the Batak and Tagbanua communities. The needs of the local communities are being considered through the preparation of the previously mentioned management guidelines.

5.3. Ulugan Bay

This area is located within the nominated area, and it comprises mangrove forests in various conservation states. It has been estimated that 15% of the mangroves in the Philippines are in Ulugan Bay. Possible threats to Ulugan Bay from a proposal to establish a Naval base were also noted by the IUCN mission. This area is considered nationally significant and IUCN considers that it may be suitable as a Ramsar site. This should be considered by the State Party.

5.4. Recommendation from the twenty-third ordinary session of the Bureau: July, 1999.

The Bureau noted that the site meets natural criterion (iii) and (iv). The Bureau however decided that the nomination be referred back to the State Party for amendment and legal definition of boundaries so that they include the area most important for the protection of the catchment of the underground river and for biodiversity conservation. As noted, the State Party submitted a draft Presidential Proclamation to the World Heritage Centre on 15 September, 1999, which noted a number of GPS coordinates. A map was requested but had not been received by IUCN as at 6 October, 1999.

6. APPLICATION OF WORLD HERITAGE NATURAL CRITERIA

The SPSRNP is nominated under three natural criteria. The previous IUCN evaluation report in 1993 noted that the site: “meets two natural criteria: criterion (iii) as a site with a spectacular karst landscape including its underground river and caves, and criterion (iv) with its habitat for many rare and endemic species.” This evaluation report reinforces the 1993 evaluation and notes the following in relation to the three natural criteria under which the SPSRNP was nominated.

Criterion (ii): Ecological processes

The SPSRNP provides examples of important on-going ecological processes. IUCN considers this importance to be of regional rather than international significance and considers that this nominated site does not meet natural criterion (ii).

Criterion (iii): Superlative natural phenomena, scenic beauty

The Saint Paul Mountain Range features a spectacular limestone karst landscape. The underground river, flowing into the sea, and its associated tidal influence, make this a significant natural phenomena. IUCN considers that the nominated site meets criterion (iii).

Criterion (iv): Biodiversity and threatened species

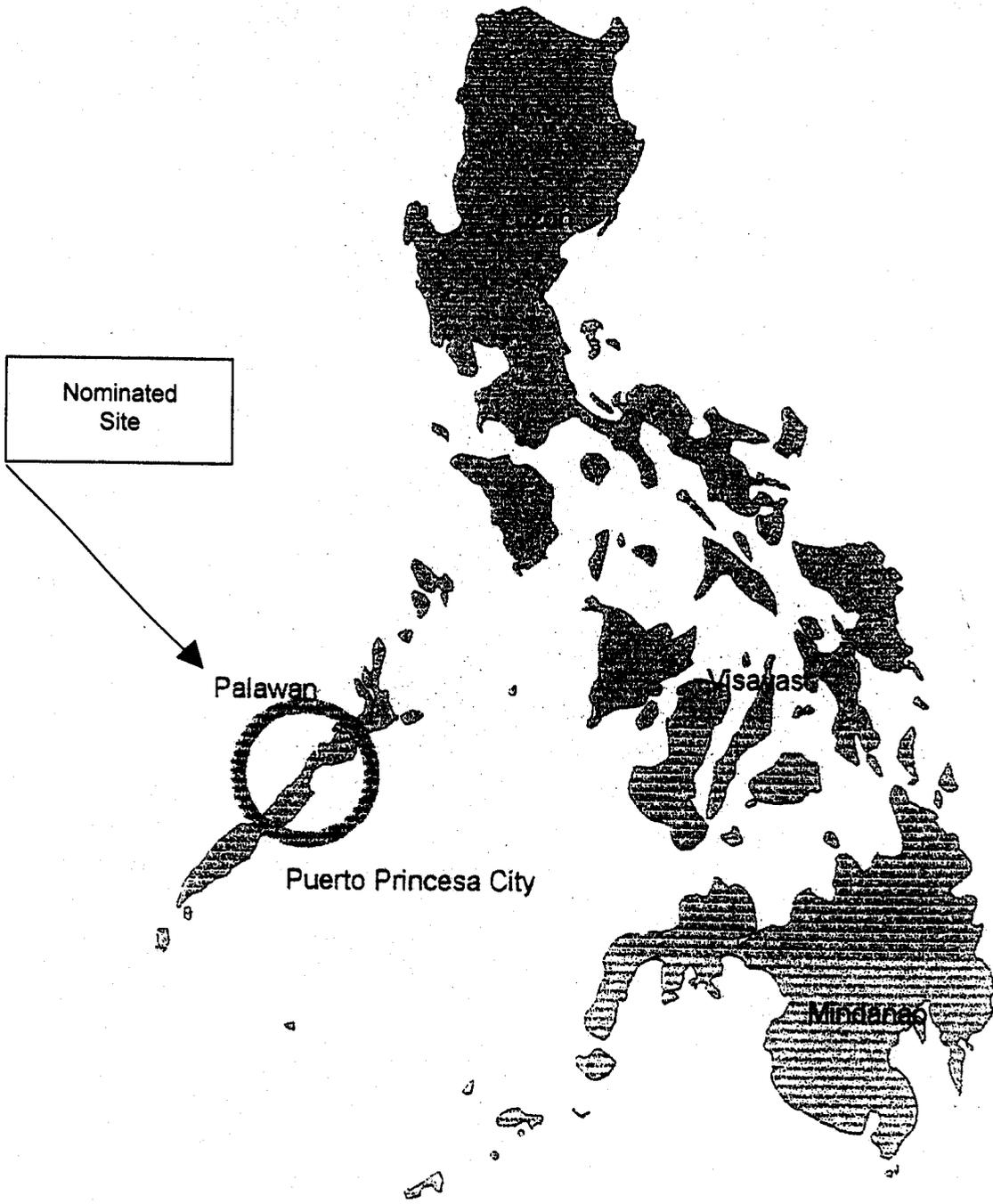
The nominated area represents a significant habitat for biodiversity conservation. The SPSRNP contains a full mountain to the sea ecosystem and protects the most significant forest area within the Palawan Biogeographic Province. IUCN considers the nominated area meets natural criterion (iv).

7. RECOMMENDATION

That the Bureau recommend to the Committee that the St. Paul Subterranean River National Park be **inscribed** on the World Heritage list under natural criteria (iii) and (iv), subject to a signed Presidential Proclamation and a map of the site being available by the time of the November 1999 Bureau Meeting. The Bureau should commend the Government of the Philippines on two issues:

- ◆ Their consultative process undertaken with relevant authorities, specifically the affected Barangays; and
- ◆ Their approaches to integrated regional land use planning which aim to ensure that the World Heritage values of the nominated site are maintained.

PHILIPPINES



Palawan

Visayas

Puerto Princesa City

Mindanao



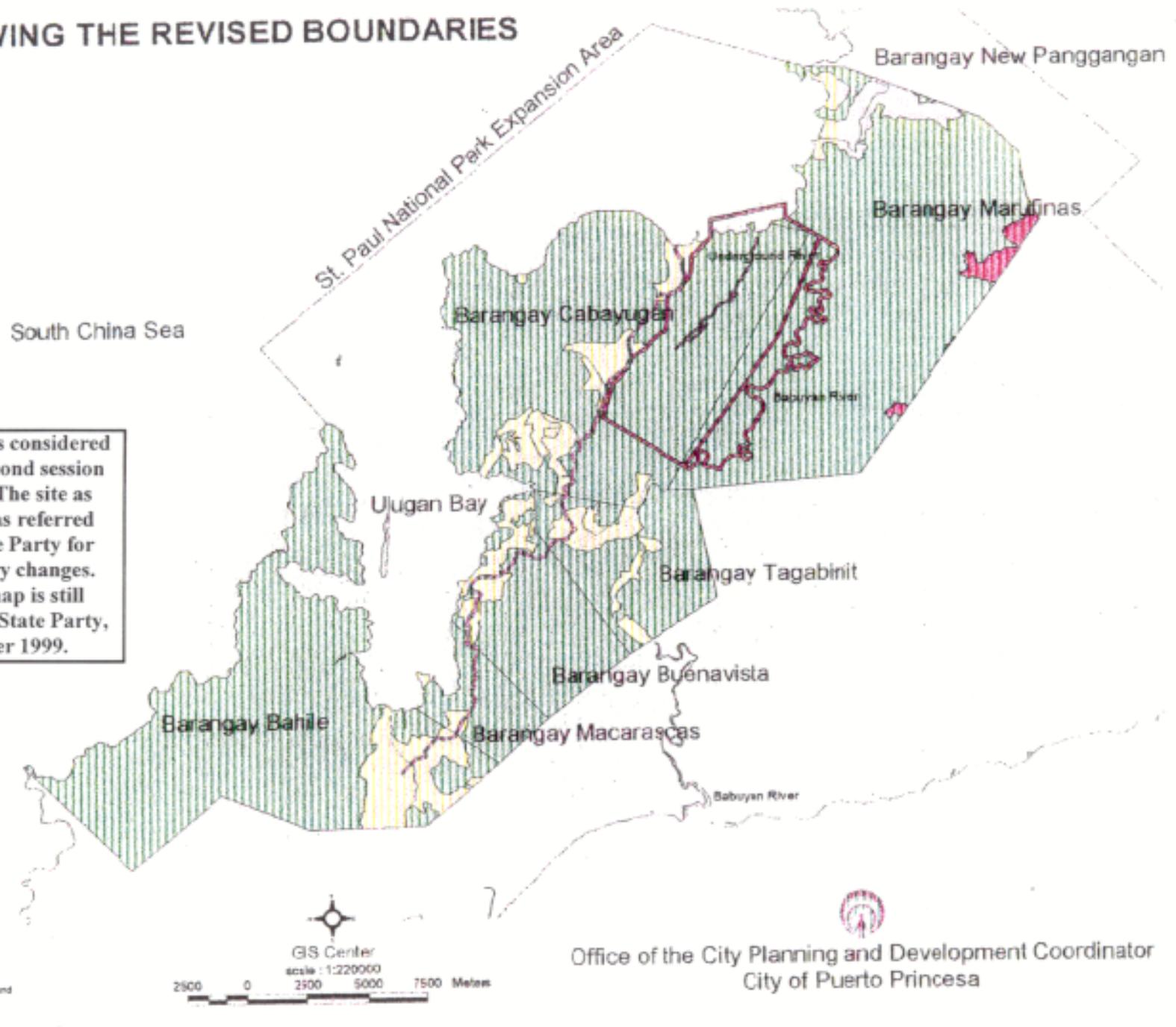
GIS Center

Office of the City Planning and Development Coordinator
CITY OF PUERTO PRINCESA

Map 1. Location of Nominated Site

MAP SHOWING THE REVISED BOUNDARIES

Nomination site as considered by the twenty-second session of the Bureau. The site as outlined here was referred back to the State Party for further boundary changes. The final site map is still awaited from the State Party, as at 6 October 1999.



Office of the City Planning and Development Coordinator
City of Puerto Princesa

Map 2. Nominated Site