



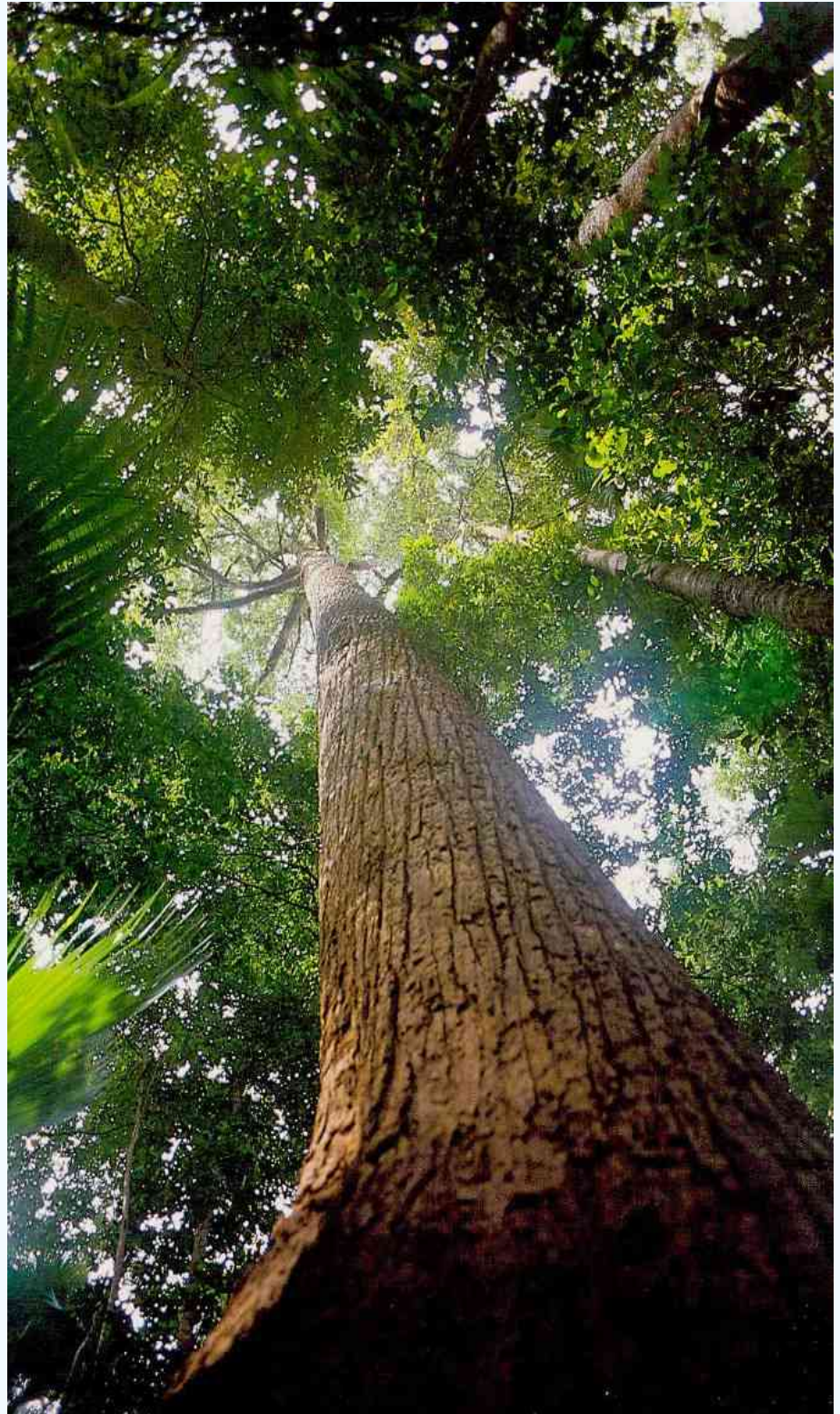
# Forests of Hope

Avoiding deforestation and combating climate change

## Site profile

### Belum-Temengor Forest Complex, Malaysia

The Malaysian Nature Society (MNS) is undertaking a major initiative to conserve 283,000 ha of evergreen forest in the Belum-Temengor Forest Complex, in the far North of Peninsular Malaysia. Belum-Temengor is a hilly to mountainous region ranging in altitude from 130 m to 1,533 m, straddling the Main Range, Peninsular Malaysia's backbone. The MNS Belum-Temengor Conservation Initiative focuses on the largest tract of unprotected forest on the Malay Peninsula, with the aim of creating the peninsula's second largest protected area. The area covers the majority of a vast forest block, which includes a further 130,000 ha in southern Thailand. Photo: Shorea sp. by Ken Rubeli/MNS.



## ■ Basic information

**Country:** Malaysia

**Site name:** Belum-Temengor Forest Complex

**Location:** In Perak State, Hulu Perak District, in the far North of Peninsular Malaysia, against the border with Thailand. IBA MY07. At its centre lies the 17,200 ha, dendritic Temengor Lake, a result of the damming of several rivers in the 1970s for irrigation, water storage and hydro-electricity. Besides the lake, the MNS initiative concerns several parcels of land:

- Royal Belum State Park (117,500 ha; formerly upper Belum Forest Reserve)
- Lower Belum Forest Reserve (16,000 ha)
- Temengor Forest Reserve (148,000 ha, of which 68,000 ha is Protection Forest, 80,000 ha Production Forest)
- forested State Land (1,500 ha) extending 1.5 km on each side of the East-West Highway, which crosses the site.

## ■ Biodiversity and current status

Belum-Temengor contains the largest contiguous expanse of unprotected forest in Peninsular Malaysia, one of the world's most biologically diverse regions. As such, it one of Asia's most highest priority areas for biodiversity conservation. It contains a range of forest types characteristic of the northern monsoonal Burmese-Thai forest vegetation zone: Hill Dipterocarp Forest, Ridge Forest, and Edaphic and Montane Forest. The forests contain over 3,000 species of flowering plants, many endemic to just the northern part of the Malay Peninsula, including the giant *Rafflesia hasseltii*, 46 species of palms (15 endemic), over 30 species of gingers, rare limestone flora and many others.

It has an extraordinary megafauna: 101 mammal species occur, among them almost all the large species of the Malay Peninsula: Malayan Tiger, Malayan Tapir, Asian Elephant, Sumatran Rhinoceros, Gaur, Malayan Sun Bear and Wild Dog. Two are critically endangered: Sumatran Rhinoceros and Malayan Water Shrew. Important salt licks



Belum-Temengor may be the world's richest site for hornbills. Photo: a flock of the rare Plain-pouched Hornbills, by Ooi Beng Yean/MNS.

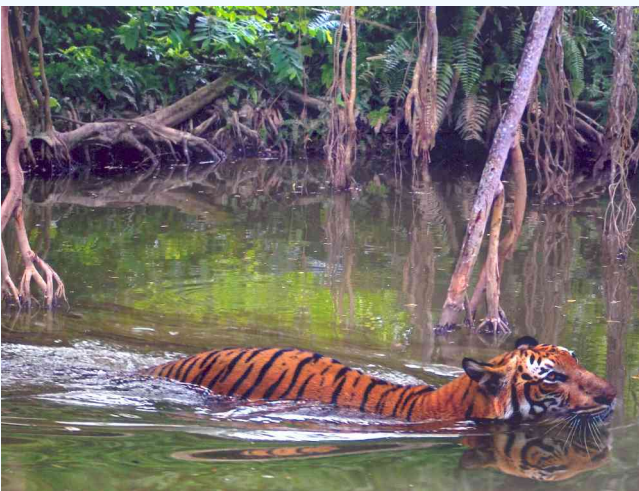
— damp mineral soil areas — attract dense populations of big mammals. It is also an exceptional site for birds; in all, 316 bird species are known so far, in particular all 10 of Malaysia's magnificent hornbill species, for which it is probably the world's richest site. The reptile, amphibian and freshwater fish fauna are equally impressive.

## ■ Current conservation approach

Conservation at Belum-Temengor is based on a series of land use categories affording varying degrees of protection.

**State Park** As a resulting of campaigning by MNS and others (see below), Royal Belum State Park was legally gazetted as a protected area in 2007. It is managed by the Perak State Parks Corporation.

**Forest Reserve** The remaining two-thirds of Belum-Temengor (almost 200,000 ha) remain unprotected. Temengor Forest Reserve and the lower Belum Forest Reserve are managed by the Perak State Forestry



Tigers and three species of *Rafflesia* (the world's largest flowers) are among the flagship species of Belum-Temengor. Photos: SamLKH/MNS and CheangKS/MNS.

Department. Temengor is gazetted as the Permanent Forest Reserve but this does not constitute permanent protection. Within the legal framework for forest reserves in Peninsular Malaysia, Permanent Forest Reserve includes 11 different forest classifications, including Production Forest for timber extraction. Over half of the Temengor Permanent Forest Reserve is allocated as Production Forest.

**State land** is under the jurisdiction of the Perak State Economic Planning Unit. Finally, the lake is managed by electric utility company Tenaga Nasional Berhad.

Belum-Temengor supports significant populations (and settlements) of the indigenous peoples of the Malay Peninsula, or Orang Asli, estimated at around 10,000. Respect for the heritage and livelihoods of indigenous communities is a component of the proposals for the sustainable management of the forest.

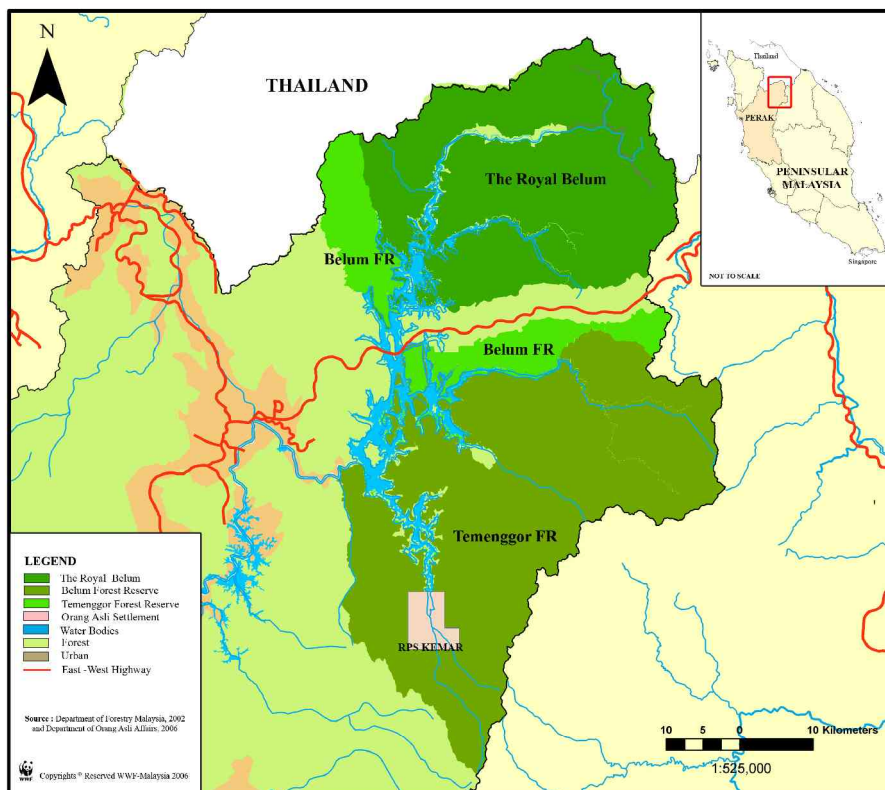
MNS's past and present conservation initiatives include two Scientific and Heritage Expeditions in the (then) Belum and Temengor Forest Reserves in 1993 and 1998 respectively, the development of *Management Guidelines for Proposed Belum Nature Park* (1995), the MNS Hornbill Conservation Project (2004-present), the Belum-Temengor Conservation Initiative (2006-present), Belum-Temengor Postcard Campaign (2006), and Forest landscape governance along the E-W Highway (2008).

## ■ Threats

Threats to the unprotected part of Belum-Temengor are high. Furthermore, although the Royal Belum State Park is legally protected, persistent threats exist even here, illegal wildlife hunting being one of the most critical issues; this still needs to be addressed. For this reason, the State Park, while protected, still forms part of the MNS Belum-Temengor initiative

Elsewhere, the main driver of forest loss is logging, which has already claimed most of Peninsular Malaysia's forests. Some of this is reported to be being done with conservation in mind, particularly within the Perak Integrated Timber Complex, which has been recognised by the Forest Stewardship Council for its sustainable logging practices, but this is not typical of the whole site. While three large logging concessions may, arguably, be less threatening to the forest complex, widespread smaller-scale license holders are the major threat to the ecosystem.

The State Land is under a range of threats, particularly along the East-West highway which risks facilitating land conversion and development, exacerbating the fragmentation of the forest. Specific threats include plantations and a proposed gas pipeline. Its importance as an ecological linkage is recognised, but developments along it have proven hard to resist in the face of powerful interests and large investments made.



Map of the Belum-Temengor forest complex; the State Park is known as The Royal Belum.



The MNS Belum-Temengor Initiative works closely with indigenous people or *orang asli*. Photo: Yeap Chin Aik/MNS.

### ■ New conservation approach

The MNS Belum-Temengor Conservation Initiative advocates protection and integrated management of the whole forest complex. Legal protection through a range of governance systems is important, but additional approaches are needed to sustain the conservation of the forest in the long term. The forest is an irreplaceable asset, which delivers free environmental services that would be exorbitantly expensive for the state to replace. It is a key nature tourism attraction, rich in megafauna and easily accessible like few other rainforest areas.

It is classified as an Environmentally Sensitive Area of the highest rank under the National Physical Plan, and its protection would be in line with Malaysia's *National Policy on Biodiversity (1998)* and *A Common Vision on Biodiversity (2008)*. A fully protected Belum-Temengor Forest Complex could, perhaps in conjunction with transboundary Thailand and other Perak forests, become a World Heritage Site.

Environmental governance of the site is complex, with many stakeholders who are often unaware of each other's roles and responsibilities, and uncoordinated efforts. The State Government is open to reappraisal of logging needs in Temengor, and the project will capitalise on this to reduce or stop logging through a phased approach.

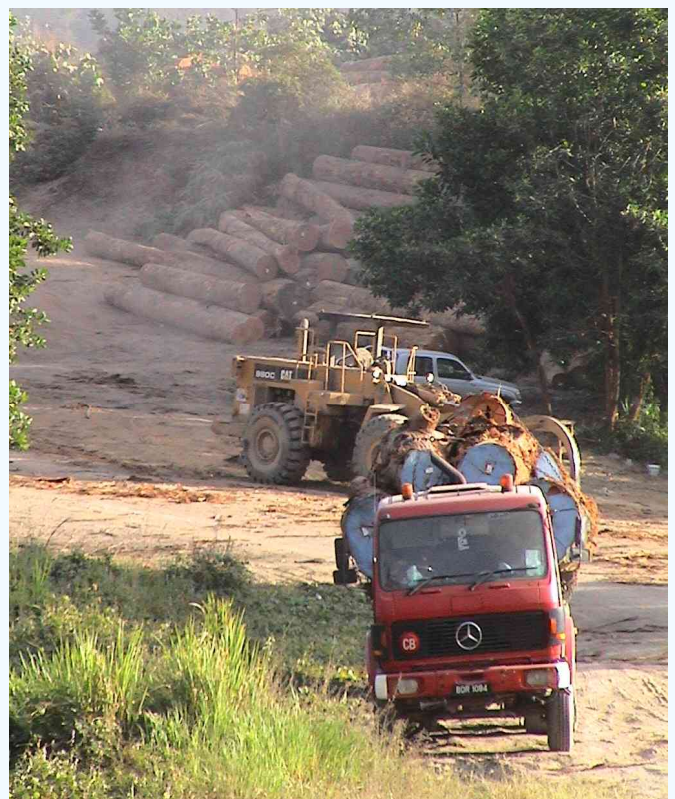
In recognition of these needs, a process to develop a Belum-Temengor Integrated Management Plan by Perak State government, working with Perak Forestry Department, has been ongoing since October 2008. Perhaps the greatest need is to develop a suitable mechanism to generate sustained funds from the intact forest for the State. MNS's other recommendations to this process include:

- re-assessment of current logging practices within Temengor Forest Reserve, with consideration to

- according it protected area status,
- protection of the state land forest flanking the East-West highway; including monitoring its threats,
- improved management of the forest landscape
- advocacy to Perak State Government and Federal Government for establishing a sustainable financing mechanism (through Payments for Ecosystem Services or other means).

In 2006, MNS was invited on to the Advisory Panel (and later as a member of the Board of Trustees) of the Pulau Banding Foundation, a non-profit and non-political organization established to promote the sustainability of Belum-Temengor forest. Its vision is to develop a gateway to Royal Belum State Park and to position it as a premier heritage destination on the world eco-tourism map. The Foundation further agreed and endorsed the Pulau Banding Charter to guide its deliberations and above-mentioned objectives.

Involvement of the indigenous Orang Asli within the legal and regulatory framework in Malaysia is limited, as prescribed by Malaysian law. However, other roles and mechanisms exist in engaging with them. Conservation programmes such as the MNS hornbill and WWF-Malaysia Tiger and Rhino projects, involve employment of the Orang Asli to support conservation action. This is further demonstrated by other agencies including the Perak Integrated Timber Complex and Perak State Parks Corporation to support improved management and



Logging remains a threat to large parts of Belum-Temengor. Photo: Kanitha Krishnasamy/MNS.



View over Belum-Temengor, looking North over the Lake towards Royal Belum State Park and southern Thailand beyond. Photo: KHKhoo/MNS.

conservation of Belum-Temengor. The primary roles of the Orang Asli within Belum-Temengor would focus on tourism and monitoring.

#### ■ History and capacity of the BirdLife Partner

MNS has a strong track record in conservation nationally. It has organised Scientific and Heritage Expeditions to several sites now protected (including Belum-Temengor), advocated for the Protected Areas network nationally (and is one of the NGO representatives on several State and Federal Steering Committees on Protected Areas), and was awarded the inaugural Merdeka Award (Environment) in 2008 for its 'outstanding contribution to the Belum-Temengor Forest Complex Conservation Initiative'. MNS also received the BirdLife Partnership Award in 2008, also partly as a result of the success at Belum-Temengor.

MNS has the capacity to implement programmes with high technical content and transaction costs, and to engage in policy debate and advocacy to ensure replication. Both Federal and State Governments are interested in participating in a new, expanded conservation initiative, as is the private sector, while the potential to develop partnerships with other agencies nationally and internationally is strong.

#### ■ Detailed knowledge of the forest

**The knowledge base** Belum-Temengor is well known, in part thanks to MNS expeditions since 1993; various studies have also been conducted by a range of other agencies, without overall synthesis. Monitoring baselines are available through the MNS Hornbill Conservation Project and WWF-Malaysia's camera-trapping project (for tiger and rhino populations). WWF-Malaysia is conducting sociological & tourism studies in Royal Belum. One rapid assessment study on indigenous communities of the Belum-Temengor area was conducted by the Forest Research Institute of Malaysia. However, detailed socio-economic data are lacking, and much needed.

**Values of the forest** A preliminary Total Economic Evaluation has been carried out by MNS. This assessed values in terms of stored carbon, timber, tourism, water, pharmaceuticals and other non-timber forest products, flood protection, fishing, and others including electricity. Of these, carbon value dwarfed all others, but converting this value into sustained revenue for the Belum-Temengor management needs to be reassessed with more recent and detailed information. Other potential sources of sustainable financing in Belum-Temengor include nature-based tourism, forest certification, and an endowment grant or trust fund, which may be justified because of the site's high profile nationally.

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