

## Importance of Ayer Hitam Forest Reserve in the Klang Valley and the Multimedia Super Corridor

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### ABSTRAK

*Kedudukan Hutan Simpan Ayer Hitam dalam Lembah Klang dan Multimedia Super Corridor diketengahkan dan dibandingkan dengan keadaan dan keluasan kawasan hutan lain di kedua-dua kawasan ini. Anggaran semua kawasan hutan adalah berdasarkan peta sumber hutan (FS6 dari 1991). Anggaran populasi kawasan juga dibuat dari bancian 1990. Beberapa unjuran tertentu pada tahun 2000 dibuat dan dibincangkan.*

### ABSTRACT

*The location of the Air Hitam Forest Reserve within the Klang Valley and the Multimedia Super Corridor is highlighted and compared to the state and extent of other forested areas in the Klang Valley and the Multimedia Super Corridor. As insufficient detailed information was available the estimates for the all forested area were based on the forest resources map (FS6 from 1991). Population of the areas were also estimated from the 1990 census. Some projections to the respective conditions in 2000 was also made and discussed.*

### INTRODUCTION

Traditional roles of forests include the production of timber and non-timber resources as well as for providing water. Since the last two decades, the other uses and roles of forests have become significant. These include the use of forests as resources for education and recreation, and also the role of forests in conservation of biological diversity as well as in maintaining global climate. In the last role, there has been much debate and even controversy, although it is now accepted that forests are important as sinks and sources of CO<sub>2</sub>, which is important in global warming. In considering the role of the Air Hitam Forest Reserve (AHFR) within the Klang Valley (KV) and the Multimedia Super Corridor (MSC), we should look at some of the interesting statistics related to the extent of the forest within the areas and what roles they could possibly play in view of the size and condition of the AHFR and in relation to the other forests within the KV and MSC.

### METHODOLOGY

As it is difficult to get the latest maps and locations of the forest and the corresponding

statistics, we have used the FS6 map (Anon, 1991) to generate the information. This map was produced in 1991 by the Forestry Department from the inventory conducted circa 1990. The information given is quite detailed as the forest are classified according to the ecological type, when logged and quality of the forest. For example, an area can be classed or described as a logged forest, when logged (eg. 1981 - 1986) condition in 1990 - whether disturbed or regenerated. Although this is about 10 years old, it is still the most current forest resource map that is available. There are statistics from reports published since then but these do not show where the actual areas are.

The FS6 map and land-use map for central and south Selangor (including Kuala Lumpur) were digitized and combined. The KV and the MSC were marked out and the various forests in the areas were highlighted and estimated (Figures 1 and 2). From the Geographical information system database, information on the total area, urbanised area, forested area, and the area of the AHFR (in 1991) can be extracted.

## Forest within the Multimedia Super Corridor

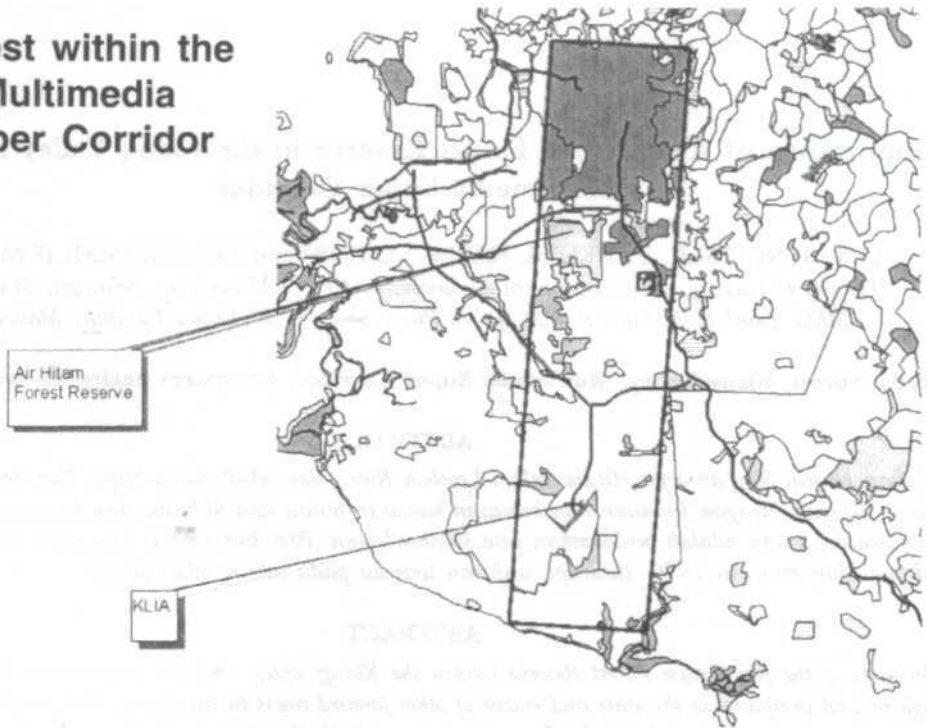


Fig. 1. Forest within the Multimedia Super Corridor

## Forests in the Klang Valley

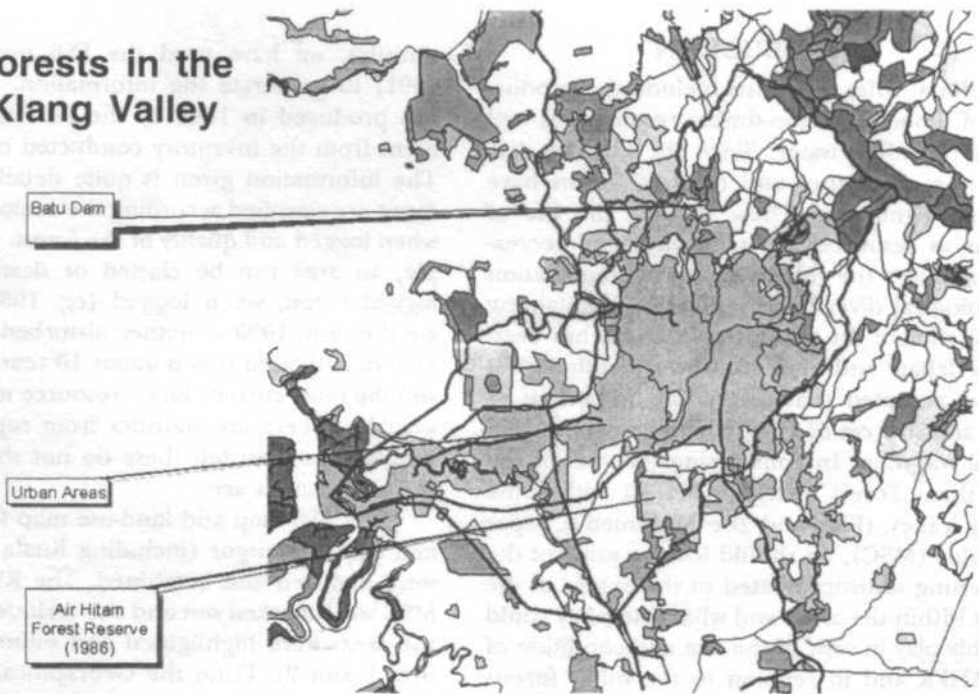


Fig. 2. Forest in the Klang Valley

**RESULTS AND DISCUSSION**

*Status of Forest Resources in the Klang Valley (KV) and the Multimedia Super Corridor (MSC)*

The area of AHFR for 2000 was estimated at 1250 ha (rounded up from the official 1248 ha allocated) (Table 1 and 2). Much rapid development has taken place in the KV in the last 30 to 40 years. The rate of conversion of forested areas as well as tree covered areas to urban areas has increased tremendously in the last 20 years.

The satellite image in 1990 still show some forested areas which are no longer so currently (Figure 3). The AHFR is a good example of what has happened in the last ten years in the whole KV area. Two large blocks have been excised and converted into housing estates (the Equine Park and Lestari Perdana) so that the whole area has been effectively halved from over 2500 ha to 1250 ha.

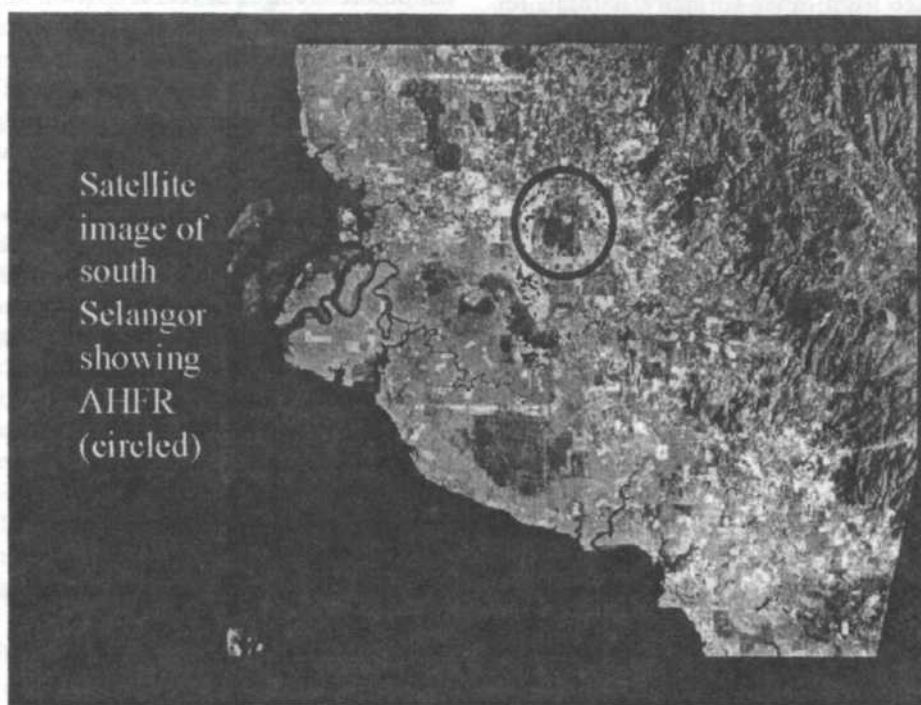


Fig. 3. Satellite Image of South Selangor Showing AHFR (Circled)

**TABLE 1**  
Total land area and areas under different land-use in the Klang Valley

	Total area (ha)	% of total area
Total KV area	120,817.14	100.00%
Total urban area	45,149.00	37.37%
Total rural area	35,662.71	29.52%
Forested (non agric)	8,045.67	6.66%
Forest (according to FS6)	31,511.07	26.08%
AHFR (1991)	2,550.00	2.11%
AHFR (2000)	1,250.00	1.03%
AHFR of total forest	1,250.00	3.97%
Population in KV in 1991	2,193,963	
Estimated KV Population in 2000	3,084,695	

**TABLE 2**  
Land area and areas under different land-use in the Multimedia Super Corridor

	Total area (ha)	% of total area
Total land area in the MSC	92503.99	100.00
Urban area	25472.18	27.54
Rural	50121.23	54.18
Forested (non agric)	7254.61	7.84
Forest (according to FS6)	13854.10	14.98
AHFR (1991)	2559.46	2.77
AHFR (2000)	1250	1.35
Estimated MSC Population in 2000	1058270	

*Importance of AHFR in the KV and MSC*

How can importance be assessed? It can be assessed in many ways; some of these may include:

1. Forest area per capita in the KV and MSC;
2. Distribution of forested areas - in the different sections of the KV - the eastern-most quarter, eastern-central quarter, western-central quarter and the western-most quarter. This can be similarly determined for the MSC (in a north to south direction);
3. Distance from other (primary/natural) forest patches and relative size of nearest forest patch/patches;
4. Suitability for protection of 'big' wildlife - is it too urbanised? except for those tolerant of urban environment such as some birds, small mammals such as civets, tree shrews and squirrels and reptiles such as monitor lizards;
5. Suitability for other forms of biodiversity - small animals such as insects and other invertebrates, and plants such as herbs and shrubs and microscopic plants and fungi as well as ferns and perhaps secondary forest species;
6. Suitability as a water catchment/watershed, - the Rasau is only a small tributary of the Kelang and the amount of water from the forest area is probably not sufficient for sustained extraction although previously (over 30 years ago, there was an extraction point in the old forest area which is now under the Enquine Park area).

When reviewing the condition of the forest in AHFR with the other forests in the KV and the MSC, the AHFR still stands out as an important patch of forest that is recovering well - it is

not quite old growth (climax) forest which would resemble undisturbed stands, but it is an intermediate growth forest and thus in a much better condition than young growth or recently disturbed forests. AHFR is the only patch of lowland dipterocarp forest in the KV and MSC. The Kuala Langat Forest are peat swamp forests while the forests in the northern and eastern sections of the KV are mainly hill dipterocarp forests. The remnant patch of 1250 ha has a fairly high diversity of habitats and also comprises patches at different stages of recovery (Roland and Lim, 2000). However, because it is surrounded by development, it is and will be under much pressure and subject to encroachment. This could result in changes along the forest edges which will favour species that are more tolerant of such modified exposed conditions.

However, if the forest is viewed from a larger and perhaps a longer (time-wise) perspective, we can also see that AHFR is also relatively large compared to other patches of forests nearby, such as those in Bangi and Sg. Besi. We can then consider AHFR as an important source of biodiversity (plants and animals) for re-colonising the other forests and other abandoned land/areas. Therein lies yet another role for the AHFR in the KV and MSC.

*Health of KV and MSC*

What is the basis of health of the KV and MSC? Does this refer to the health of the populace and/or of the natural ecosystems, or a combination of both? Does the index/ratio of forest area per capita indicate anything? How do the figures in the KV and MSC compare with this for the whole country and the world average? The ratio of the forest area per capita can be considered as what is available for the populace;

TABLE 3  
Population densities and forest per capita

Region	Total land area ha	Total forest 1000 ha	Population million	Density per 1000 ha	Forest/capita
World	13,048,300,000	4,081,900	5,166	396	0.790
Asia	3,085,414,000	556,996	3,486	1,130	0.160
Malaysia	32,975,780	19,200	19	564	1.032
KV	120,817	31.51	2.19	18,151	0.014
MSC*	92,503	13.85	1.06	11,437	0.013

Data circa 1990/91

\* Population figure is for 2000, MSC did not 'exist' in 1991

when compared to other areas, it could be an indication of what should be set aside for the maintenance of forest related function - supply of wood and non-wood products and fresh air and water and a place for recreation. The forest per capita ratios in the KV and the MSC are relatively low compared to the national and even world average have a lower quality of a life that is influenced by adjacent forests. The inverse value of persons per ha indicates the pressure of the population on the forest.

From the medical health point of view, would carbon dioxide, oxygen, dust, and pollutant levels indicate anything? Would the presence or absence of forests and water catchment indicate a healthy environment? Many of these relationships are not really known proven, but the availability of forests for recreation and exercise could certainly contribute to mental and physical health. How much of the forest and urban parks are actively used? What are the roles and importance of other forested areas in the KV and MSC? Are these primary or secondary forests? There is probably a need to classify forests according to 'their use' or level and type of disturbance, such as disturbed 'real' forest (such as AHFR) as against mature abandoned rubber and other 'secondary' forests such as Bt. Gasing, Bt. Nenas; Federal Hill and Kenny Hill and their usefulness for education, research and as sources of teaching materials.

The capacity of AHFR to store and absorb Carbon has been estimated (Roland & Lim 2000) to range from about 40 t/ha to 115 t Carbon / ha and the absorption rate at 0.3 to 0.5 t/ha/year. Much of the forest may be logged but as regrowing forests, they are useful in many ways - and can provide much diverse habitats for

some of the smaller mammals. Air Hitam is relatively small and is an island in a sea of developed landscape; even then, it is reputed to be home to a number large carnivores, which may soon die out because the area is rapidly becoming too small to sustain any viable population. In spite of this, there are still other wildlife species that may survive the shrinking AHFR.

### CONCLUSION

The KV and MSC are relatively small but economically important areas; but the extent of forests in these two strategic zones in Malaysia are relatively lower than the average for the country. Although the AHFR makes up less than 5% of the total forest area within the KV and the MSC, it is strategically located within these two zones and can play important ecological, economic and social roles in forestry, urban forestry, recreation, conservation and provide for many other functions such as in research and education. For these reasons and many others, the AHFR should therefore not only be conserved as a forest for its diverse uses and functions, but the area of forests within the KV and the MSC should be increased to bring the forest per capita of the two regions to at least the national average.

### REFERENCES

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