

# INTEGRATED CATCHMENT MANAGEMENT OF PUTRAJAYA LAKE AND WETLAND (MALAYSIA)





#### **Up-dated in June 2015**

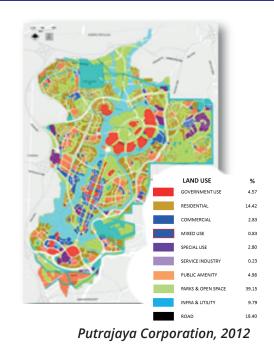
### Demosite description

Lithology / Geochemistry

Calc-silicate hornfels, granite, carbonaceous schist and quartz-mica schist. Thinly bedded meta-siltstone and

meta-sandstone





## Main description:

- Putrajaya Lake and wetland catchment (fig.1) are located in Putrajaya Federal Territory within the Langat River Basin area in Malaysia. The lake is at the southern part of the wetland.
- Putrajaya Lake (fig.2) is an urban lake in which its foreshores are the most popular resource for informal recreation as a waterfront city.
- Putrajaya Eco-hydrology Management won the Excellent Award in the Green City Award Category of the Malaysia Landscape Architecture Awards (MLAA) 2012 and a Gold Award of The International Awards for **Liveable Communities 2012.**

**Conserve Ecohydrological** processes in natural ecosystems



**Enhance Ecohydrological** processes in novel ecosystems



**Apply complementary Ecohydrological processes in high** impacted systems

**✓** YES

### **Ecohydrology Principles and Solutions**

# **IMPLEMENTATION PRINCIPLES**

\* Ecological engineering

#### **EH SOLUTIONS**

**Plantation** of a variety of aquatic plants in this wetland (more than 70 species totaling 12 million number of plants)



**The Putrajaya constructed wetland system** (implemented since 1998) comprises five arms with 24 cells



### Lifezones

Life Zone Tropical Moist

PPT (mm/yr)

**PET ratio:** 0,69 **Elevation:** 50m **Humidity:** humid



Fig.1- Aerial view of the series of wetland cells with different reed bed vegetation (Courtesy of Putrajaya Corporation)

### Major Issues

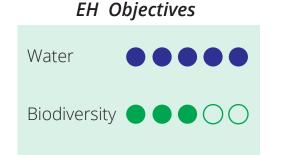
\* Elevated level of pollutants from upstream inflow to the lake



Catchment Sociological sub-system

### Social-Ecohydrological System

#### , Catchment Ecohydrological sub-system



\* The ecohydrological approach is implemented by the use of constructed wetland as

EH Methodology

a natural treatment system to treat primary upstream inflow to the

*Set conditions for:* 

#### **Objectives**

\* To increase stakeholder engagement and community participation in Putrajaya \* To create awareness

among communities \* To educate people to be more responsible in taking care the environment

Fig.2-Putrajaya Lake (courtesy of

### **Stakeholders**

- \* Researchers (Institute for
- Environment and Development)
- \* Universities (UKM, UPM, UNITEN) \* Local Authority: Putrajaya
- Corporation (PPj
- \* Government Bodies: Ministry of Federal Territories, NRE, KETTHA, KPKT, state government of Selangor MARDI, LUAS, DOE, DID, SPAN,
- \* Private Sectors: IOI, TNB, IWK, PJH
- \* Community/Individual ownership

Participate in:

### **ACTIVITIES**

\* Transforming Putrajaya from a Garden City to a Green City (Putrajaya Structure Plan – Sustainable Putrajya 2025)

- \* Local Agenda 21 a Community Programme for Sustainable Development
- \* Development of Nature Interpretive Centre (NIC) at Wetland Park Putrajaya
- \* Monitoring, Surveillance, and Maintenance Works of Lake and Wetlands
  - \* Environment & Ecosystem Educational Programmes (3EP)
    - \* Healthy Community Healthy Ecosystem (HCHE)
- \* Series of Putrajaya Lake and Wetland Management Workshop/Seminar/Forum/Dialogue/Colloquium
  - \* Series of Putrajaya Lake and Wetlands Explorace
  - \* Series of Workshop & Photography Contest on Biodiversity Appreciation
    - \* Series of Catch and Release Fishing Competition
    - \* Series of Bird Watching and Identification Programme

# Results

Services

#### MAIN EXPECTED OUTCOME

Are inputs to:

Improvement of the water quality of the surface runoffs flowing into the lake from the upstream areas

Set conditions for:

### LATEST RESULTS

The ecohydrological approach that combining the need of the ecosystem into the overall planning, approval, monitoring and enforcement jurisdiction of the city development and the human activities in this catchment area, significantly having a direct impact to the Putrajaya Lake. A number of monitoring and surveillance conducted in this area has shown very positive signs of interesting habitat development and ecosystem enhancement. Water quality is remained in good water quality for allowing water related activities conducted in the lake.

**CLICK HERE TO SEE THE REFERENCES** 













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