



**Presentation on the  
Asian Wetland  
Inventory to the  
Mekong River  
Commission**

**Begg G, Lopez A & Lowry J**

**December 2001**



# **Presentation on the Asian Wetland Inventory to the Mekong River Commission**

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**Phnom Penh, 19 November 2001**

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## **CONVENTION ON WETLANDS: REVIEW OF EXISTING WETLAND INVENTORY**

- ▶ **Extent of global wetland inventory does not provide a comprehensive information base for the wise use and monitoring of wetlands**
- ▶ **Wetland area - estimates vary enormously**
- ▶ **Wetland classifications not being used consistently**
- ▶ **Data collation - methods used to collect and analyse data are not being used consistently**



# **CONVENTION ON WETLANDS: REVIEW OF EXISTING WETLAND INVENTORY**

- ▶ **Comparability - inadequate  
standardisation of inventory  
techniques**
- ▶ **Accessibility - information widely  
scattered and not always  
accessible**
- ▶ **Coverage - regionally incomplete**



## Resolution VII.20 Priorities for wetland inventory



11. URGES all Contracting Parties yet to **complete comprehensive national inventories of their wetland resources**, including, where possible, wetland losses and wetlands with potential for restoration (Resolution VII.17), to give highest priority in the next triennium to the compilation of comprehensive national inventories, in order for related actions such as policy development and Ramsar site designations to be carried out with the best information possible;
12. FURTHER URGES that in undertaking inventory activities Contracting Parties give consideration to affording highest priority to those **wetland types identified as at greatest risk or with poorest information** in the *Global review of wetland resources and priorities for wetland inventory* report;
13. REQUESTS Contracting Parties to give consideration in their inventory activities to **adopting a suitable standardised protocol for data gathering and handling**, such as that provided by the Mediterranean Wetlands Initiative (MedWet), and the **use of standardised low-cost and user-friendly Geographic Information System methods**;



## Resolution VII.20 Priorities for wetland inventory



14. ENCOURAGES Contracting Parties with shared wetlands or river basins **to work cooperatively** in the gathering of inventory and related management information, as urged through the *Guidelines for international cooperation under the Ramsar Convention* (Resolution VII.19);
15. REQUESTS the Scientific and Technical Review Panel, in collaboration with Wetlands International, the Ramsar Bureau, and other interested organizations, to **review and further develop existing models for wetland inventory and data management, including the use of remote sensing and low-cost and user-friendly geographic information systems**, and to report their findings to the 8<sup>th</sup> Meeting of the Contracting Parties with a view to promoting international common standards;
16. CALLS UPON Contracting Parties to **review the arrangements they have in place for housing and maintaining their wetland inventory data** where it exists, and, as necessary, to seek to establish a central repository or to ensure that access to this information resource is possible for all decision-makers, stakeholders and other interested parties, where possible through the World Wide Web and CD-ROM formats;



## Resolution VII.20 Priorities for wetland inventory



17. ALSO ENCOURAGES Contracting Parties and other interested organizations and funding bodies to provide the resources to allow **Wetlands International** to complete and document suitable standardised protocols for data gathering and handling as well as a comprehensive assessment of wetland inventory information, and to develop procedures for regularly updating this information and making it readily available through the World Wide Web and CD-ROM formats;
18. FURTHER CALLS UPON the **bilateral and multilateral donors to give priority to supporting the wetland inventory projects submitted by developing countries and those in economic transition**, noting, as urged above, the desirability of such projects being undertaken; and
19. DIRECTS the Standing Committee to give special attention to appropriate wetland inventory projects in its **consideration of projects** submitted to the **Ramsar Small Grants Fund**.



# **Ramsar Strategic Plan - 2003 - 2008 - Draft**

- **Theme 1. Inventory and  
Assessment**

- **Describe and monitor the extent and  
condition of wetland resources at the  
global and national level in order to  
inform and underpin implementation  
of the Convention, and in particular  
the application of the wise use  
principle.**





## **Major roles in the development of the AWI**

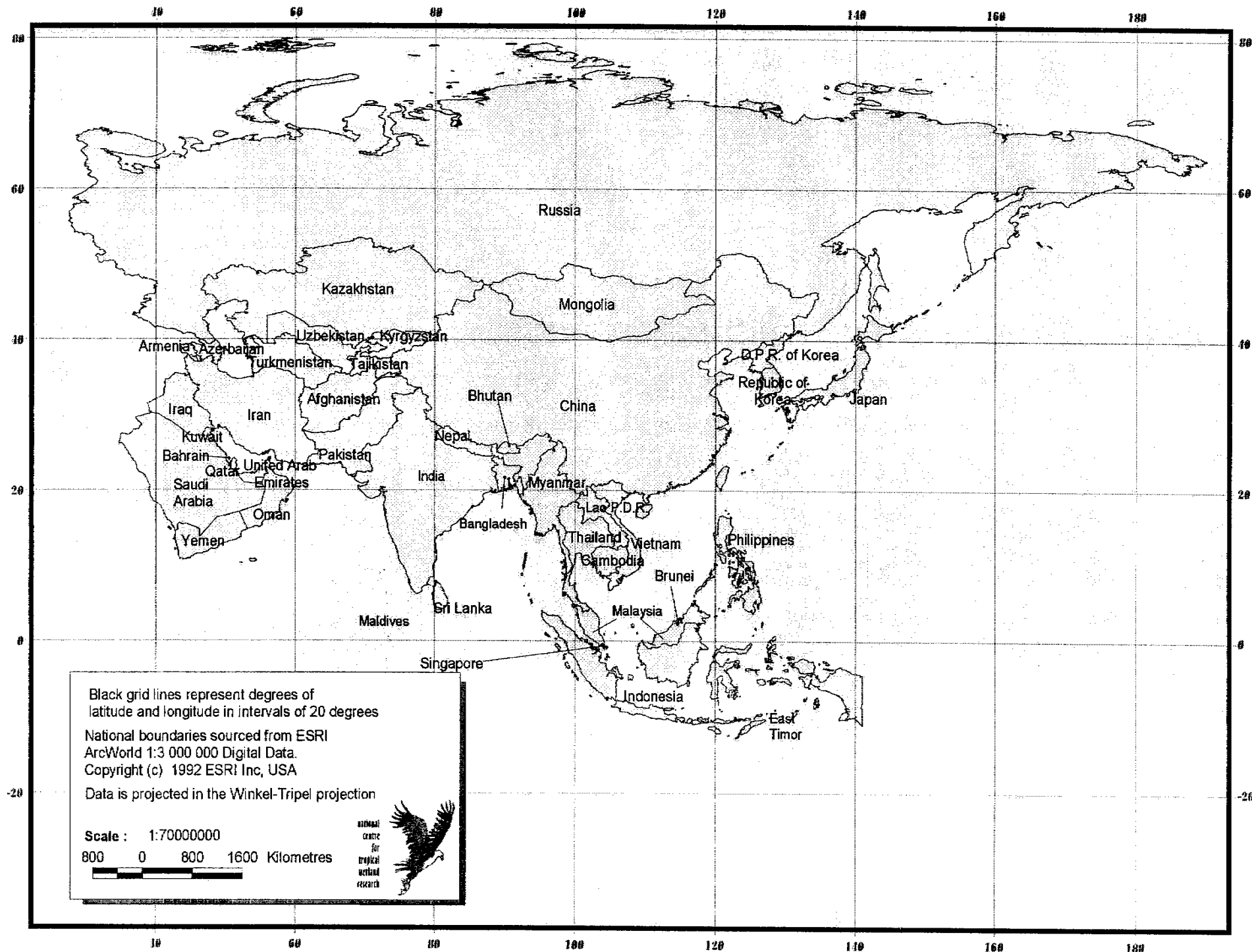
- **Wetlands International**
- **Scientific & Technical Review Panel of the Ramsar Convention**
- **Wetland Inventory & Monitoring Specialist Group**
- **National Centre for Tropical Wetland Research (Australia)**
- **Standing Committee of the Ramsar Convention**
- **Ministry of Environment, Japan**



# **AWI - GEOGRAPHIC COVERAGE**

- ▶ **All countries/territories in western, southern and eastern Asia, including Russia east of the Urals**
- ▶ **All countries/territories with biophysical (eg river basins) and socio-economic (eg trade in wetland products) linkages**
- ▶ **All countries/territories that would benefit from cooperative approaches for wetland management (shared wetland resources)**





# **STAKEHOLDERS OF THE AWI**

- **Relevant government agencies responsible for - wetlands, natural resource management, community development, etc.**
- **Conventions, international development agencies and supra-national organisations**
- **Research Institutions**
- **Non-government organisations**



# **KEY ACTIVITIES IN THE NEXT PHASE**

- **Revision of AWI manual and initiate the development of the AWI database**
- **Meetings/presentations with key national government agencies to introduce the AWI and its role**
- **A stakeholder capacity analysis for AWI implementation through Wetlands International country programmes and national governments**
- **A possible regional training workshop for key national representatives**



# **KEY ACTIVITIES IN THE NEXT PHASE**

- **Development of demonstration projects for the AWI.**
- **Undertake further inventory in collaboration with other parties and national/regional authorities and initiatives.**
- **Provide information and advice to international initiatives (eg climate change assessments, Millennium Ecosystem Assessment, Ramsar wetland inventory protocol).**



## **Role of Governments**

- Plan for national wetland inventories (as per Strategic Plan and Resolution VII.20)**
- Organise fora of key agencies and all stakeholders to promote the need and mechanisms to implement the AWI**
- Provide support to a stakeholder capacity analysis at a national level**
- Secure financial and human resource allocation for implementation of national wetland inventories.**
- Support “Inventory and Assessment” related Actions proposed in Ramsar Strategic Plan 2003-2008**



# **MRC Environment Program – Lower Mekong River Basin (LMB)**

**Given the high degree of people's dependence on aquatic habitat productivity in the LMB the main objectives of the aquatic ecosystems component the MRC's Environment Program is to:**





- 
- 
- **◆ Develop a basin wide inventory and database of aquatic ecosystems (wetlands).**
- 
- **◆ Finalise a wetland classification scheme.**
- 
- **◆ Establish a monitoring system for wetlands.**
- 
- **◆ Obtain timely information on trends and changes in wetlands.**
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- 
- ◆ It is further understood that wetland inventory data in Cambodia only covers 3 provinces.
- 
- ◆ In this case - the Asian Wetland Inventory (AWI) procedure may be of interest to both the MRC and governments of the 4 riparian countries in LMB ?
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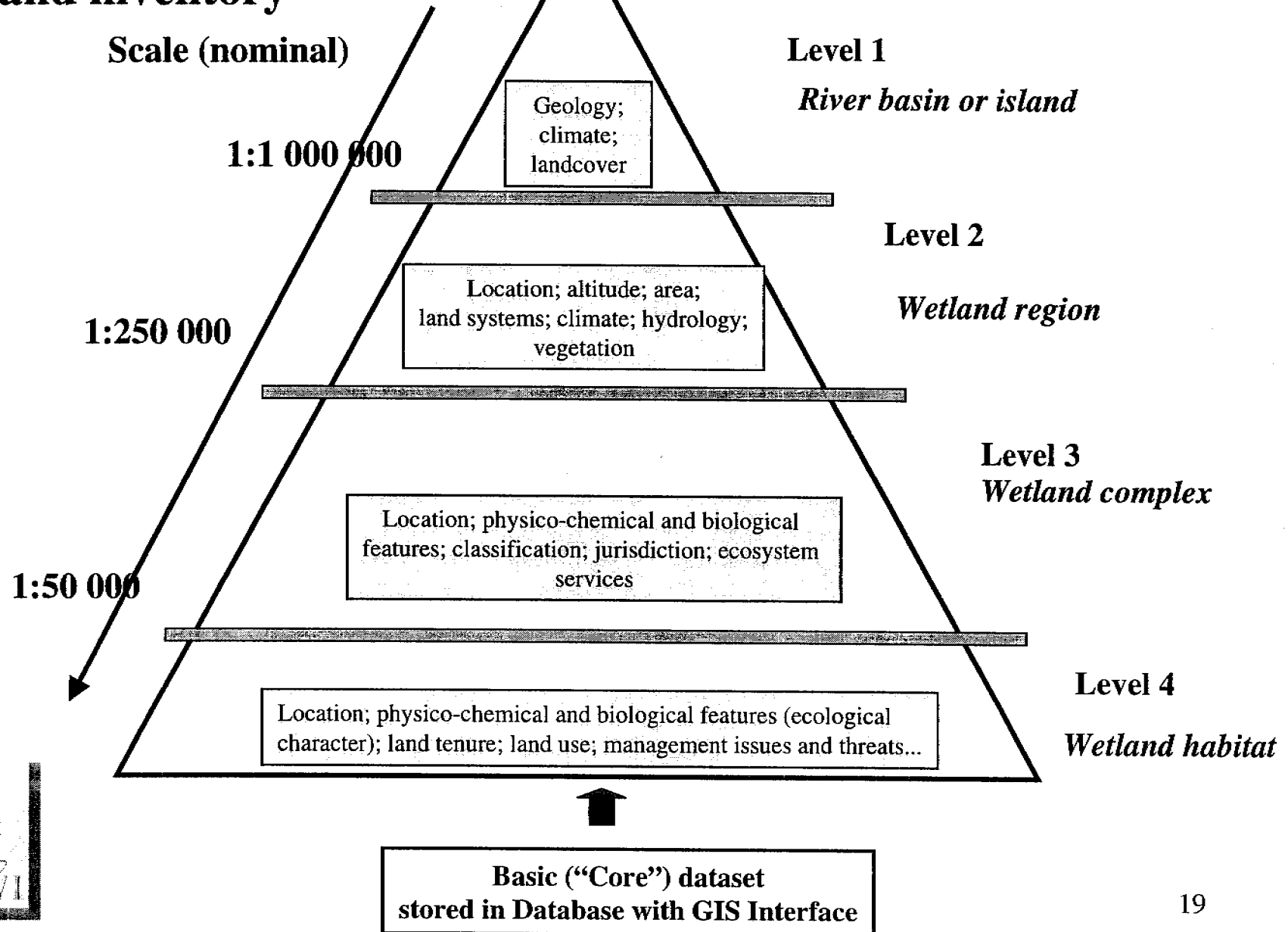


# **What is the A WI procedure**

- **A hierarchical, map-based approach to providing information about wetlands in a particular area at four levels of detail .**
- **Core data sets to ensure compatibility between inventories.**
- **Standardised ACCESS database linked to a GIS package.**

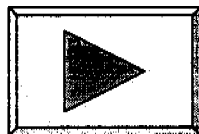


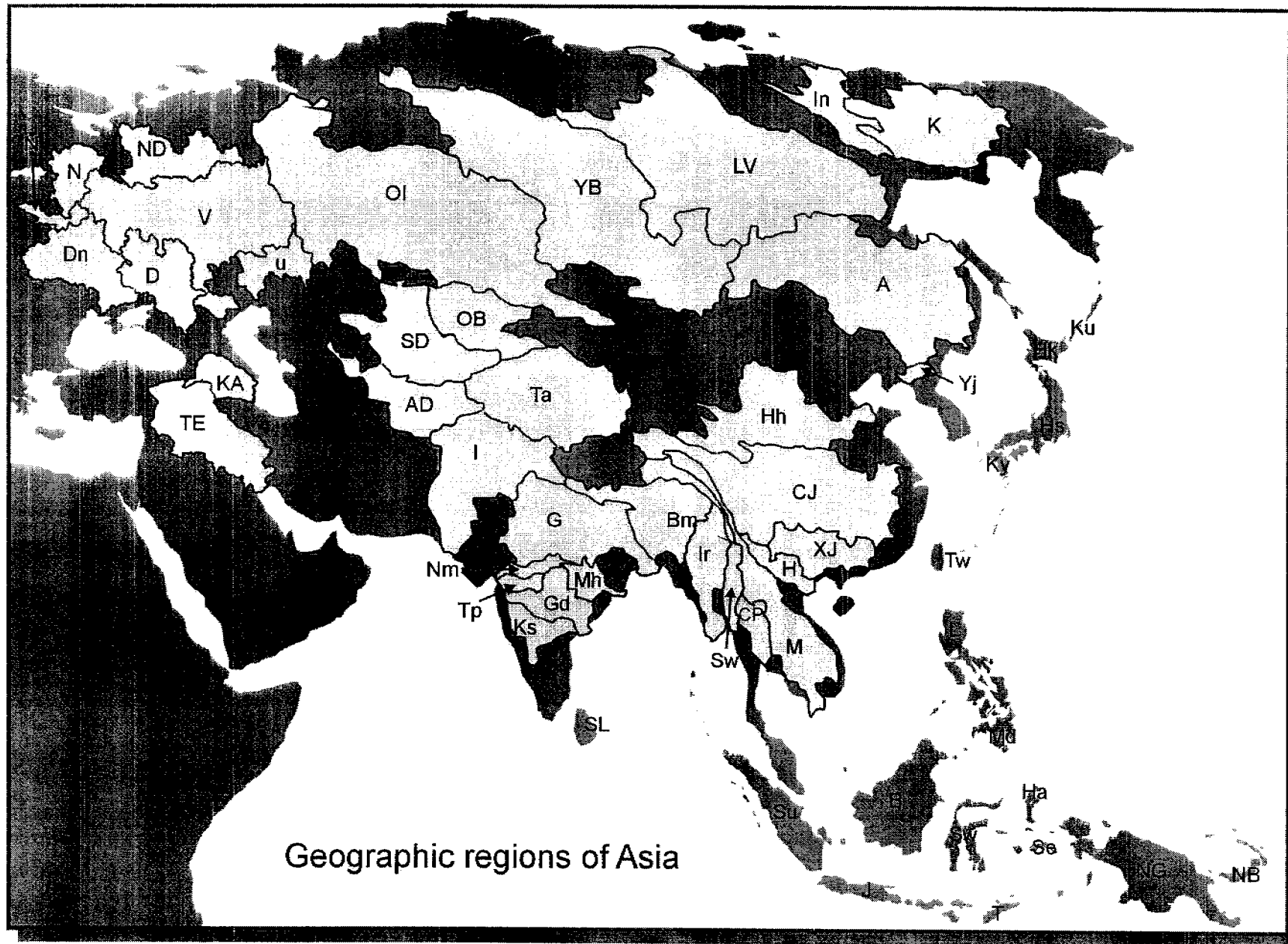
# Hierarchical approach to wetland inventory



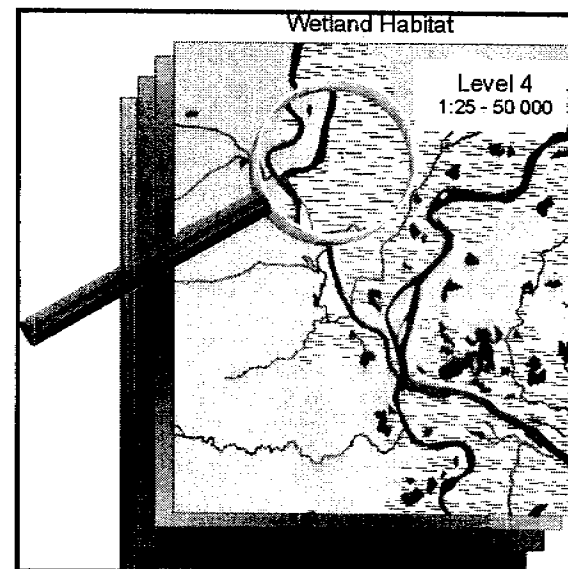
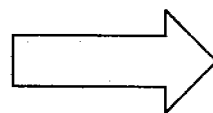
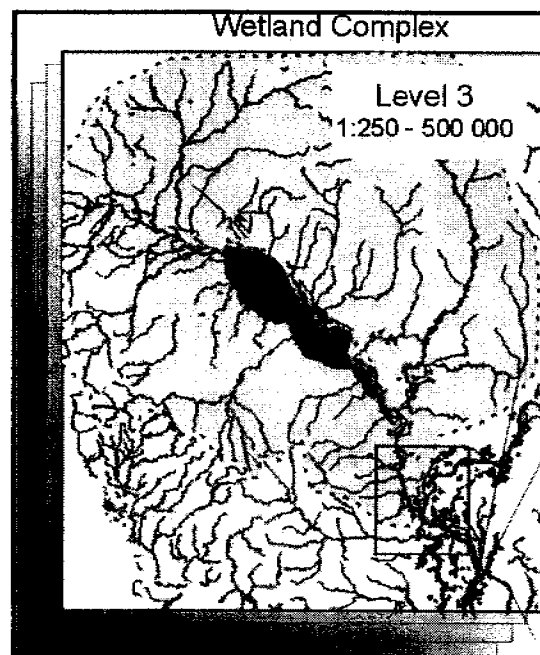
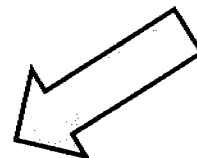
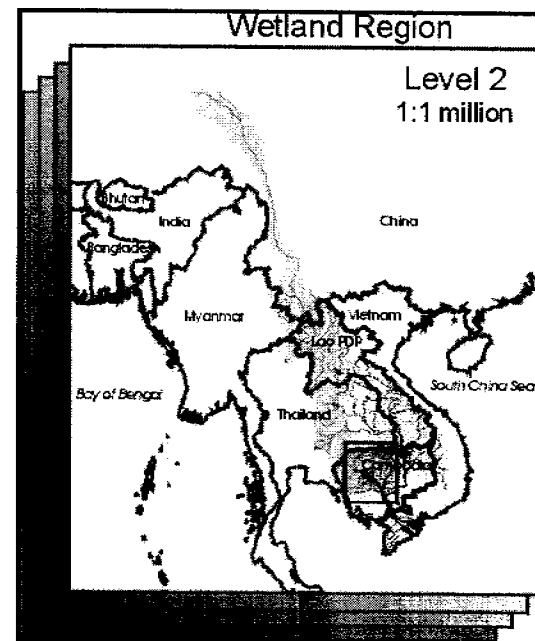
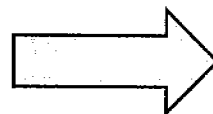
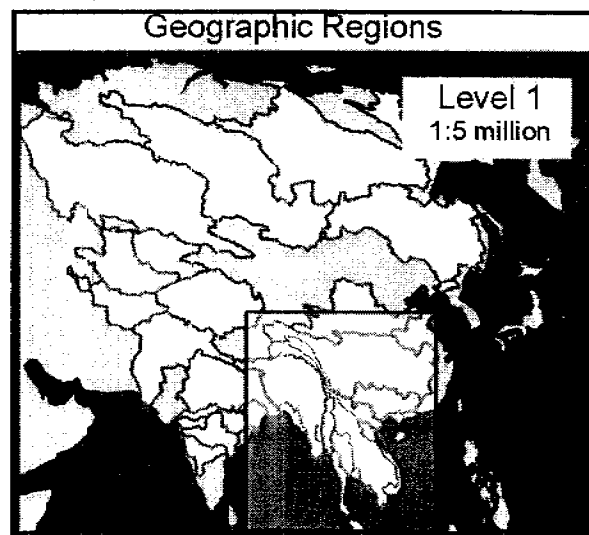
# **Geographical regionalisation of Asia**

## **River basins (or major islands)**





# AWI - THE METHOD

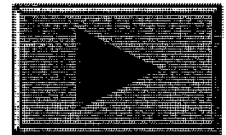


# Hokkaido example

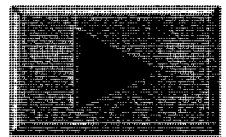
Level 1 (scale 1: 5 - 8 million)

Geographic region

## ■ Hokkaido

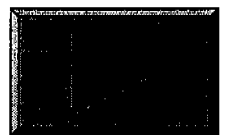


## ■ Regional Geology

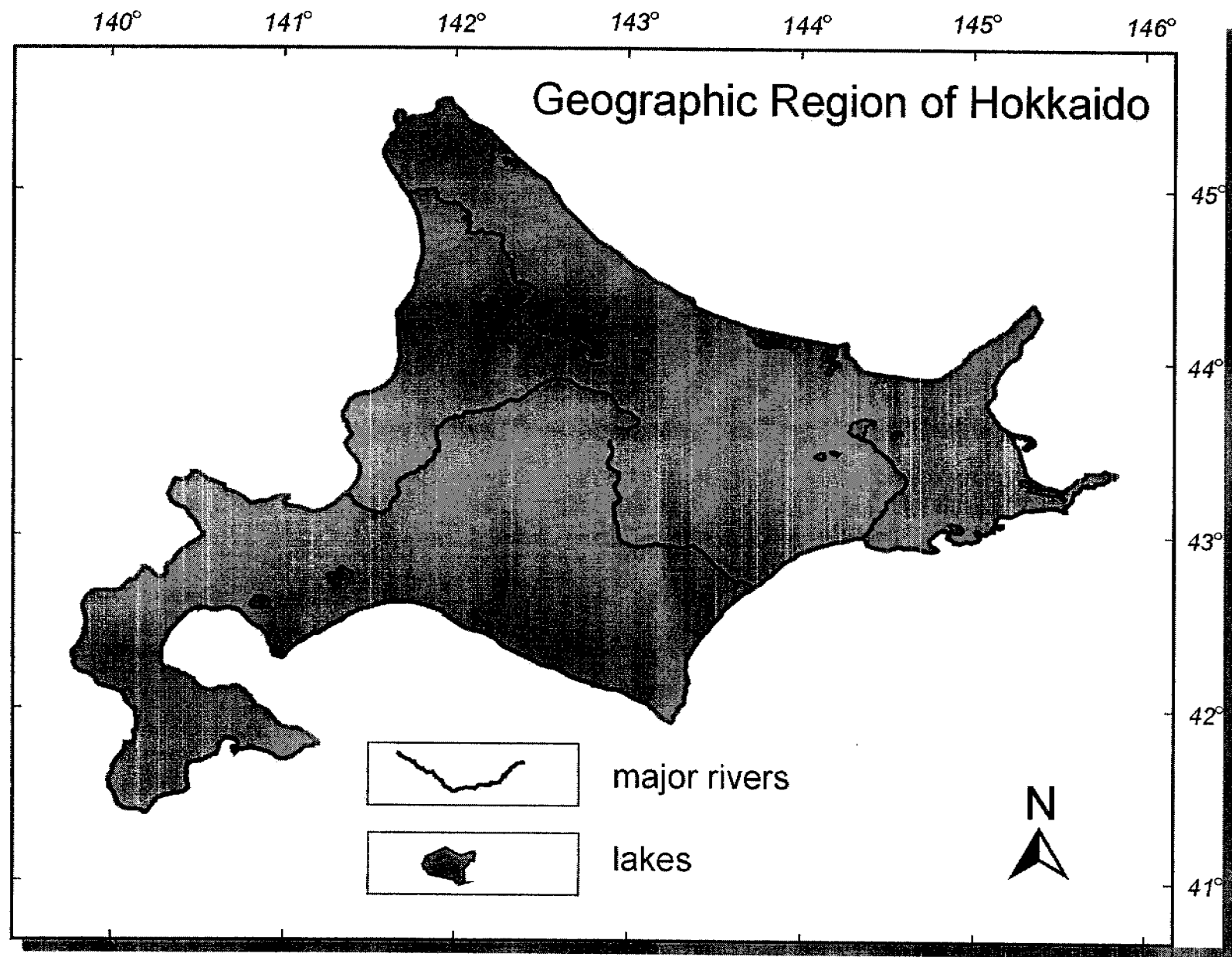


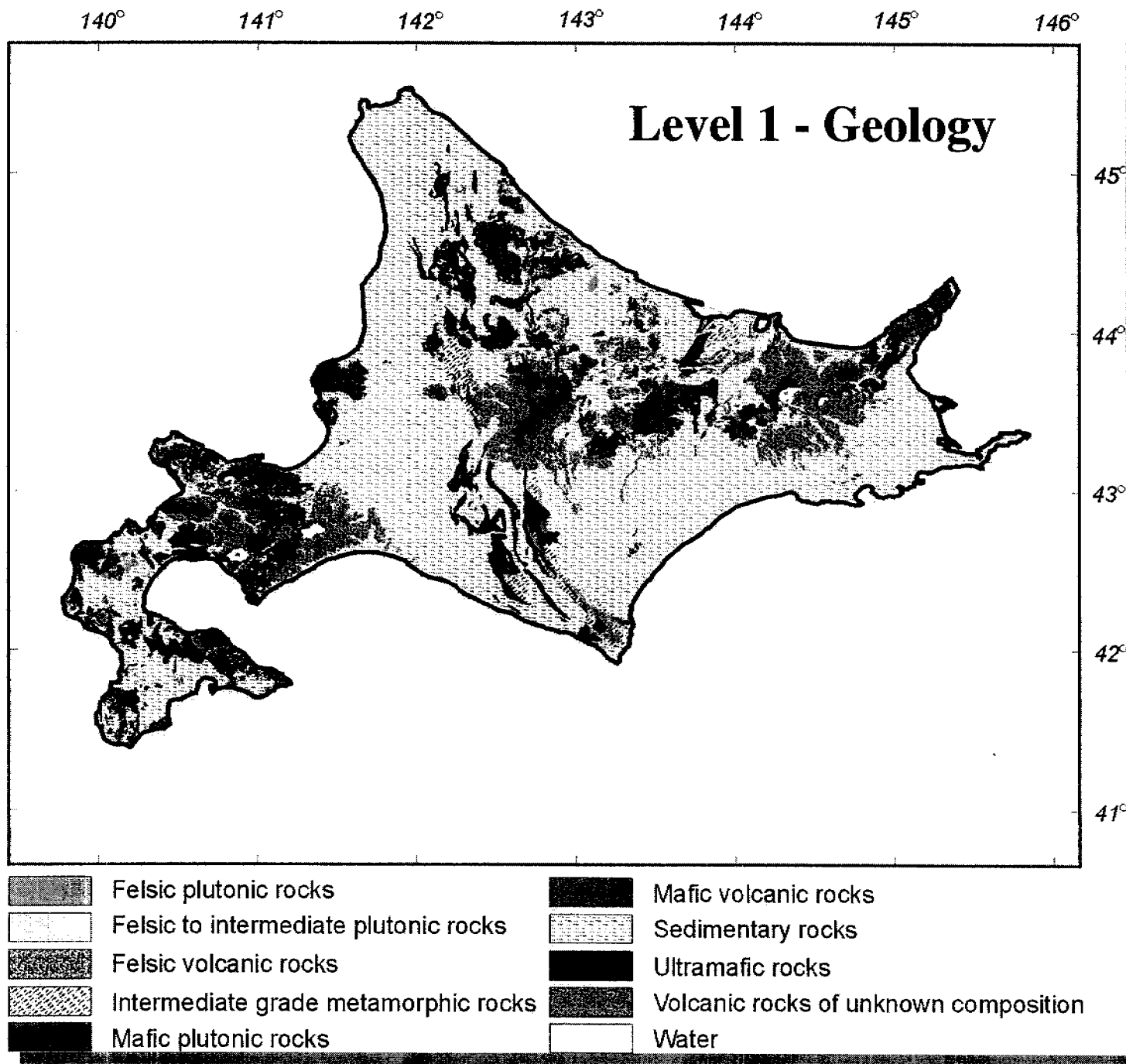
## ■ Regional Climate

## ■ Regional Vegetation

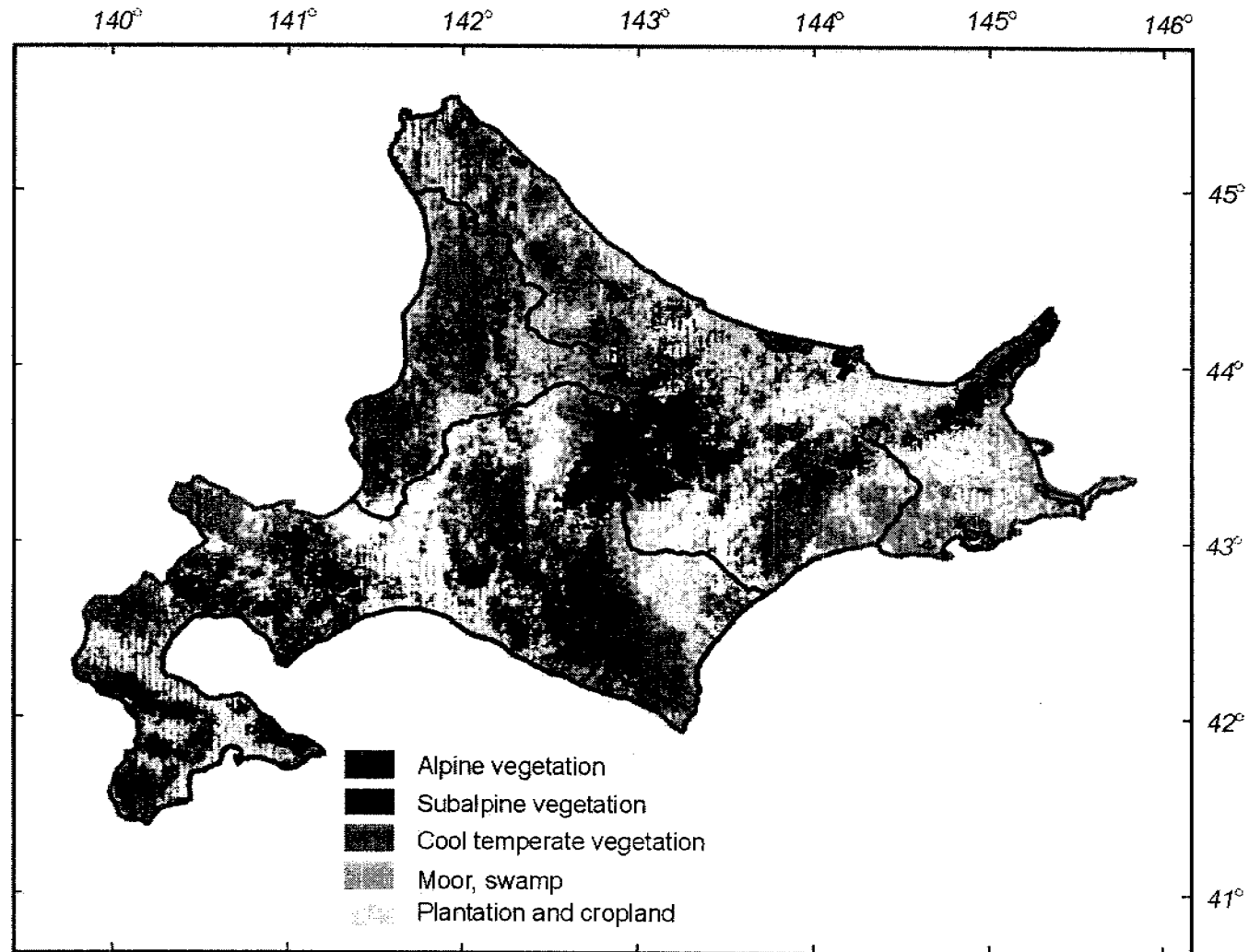








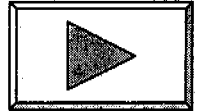
## Level 1 - Vegetation



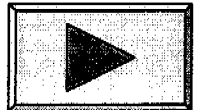
## Level 2 (scale 1: 1 million)

### Wetland region

## Wetland regions of Hokkaido



### •Kushiro wetland region

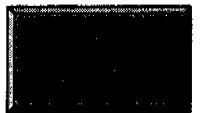


#### •Location

#### •Biological features

#### •Climatic characteristics

#### •Vegetation



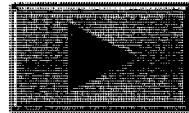
#### •Physical features

#### •Jurisdiction

#### •Altitudinal range

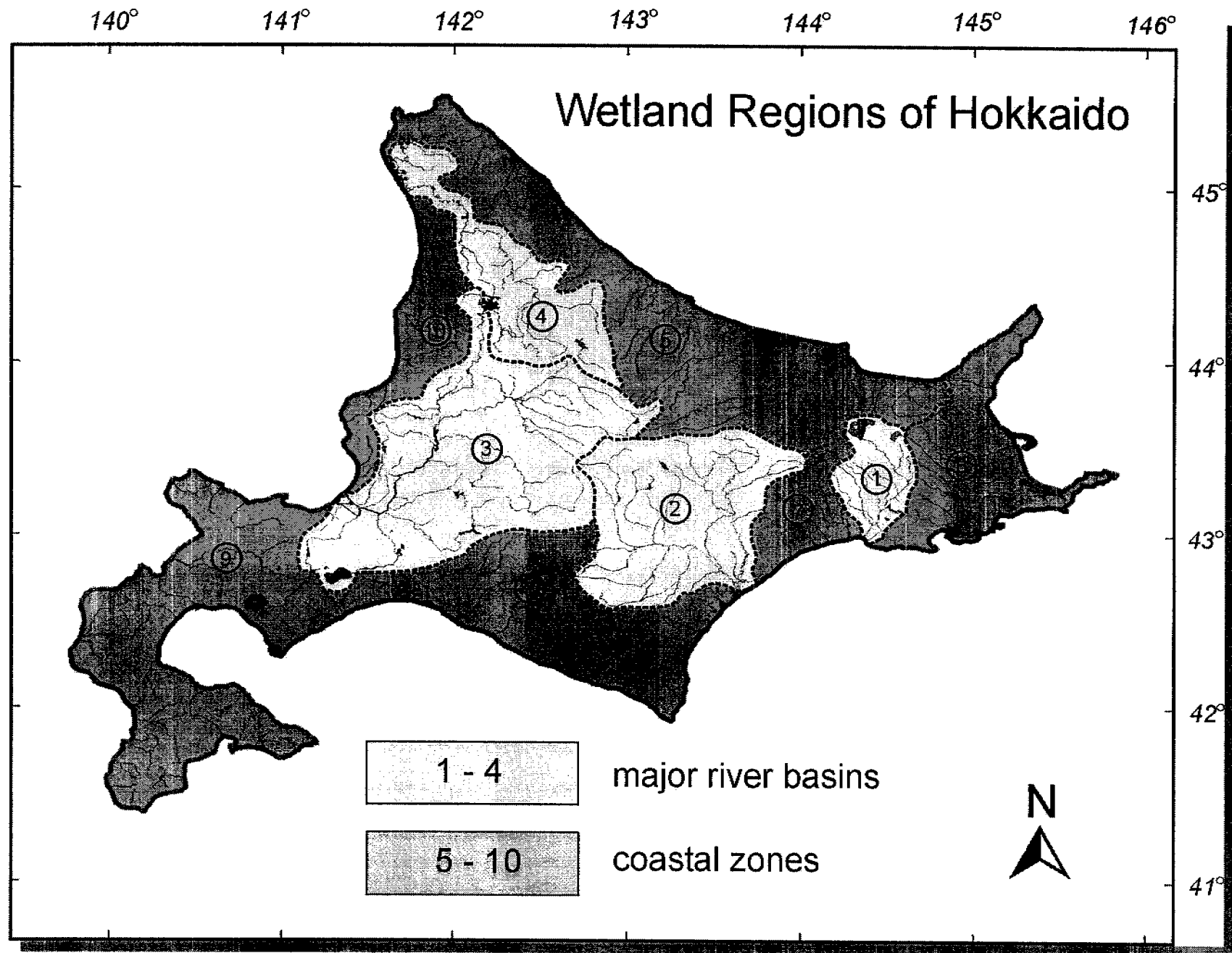
#### •Area

#### •Geology



#### •Water regime





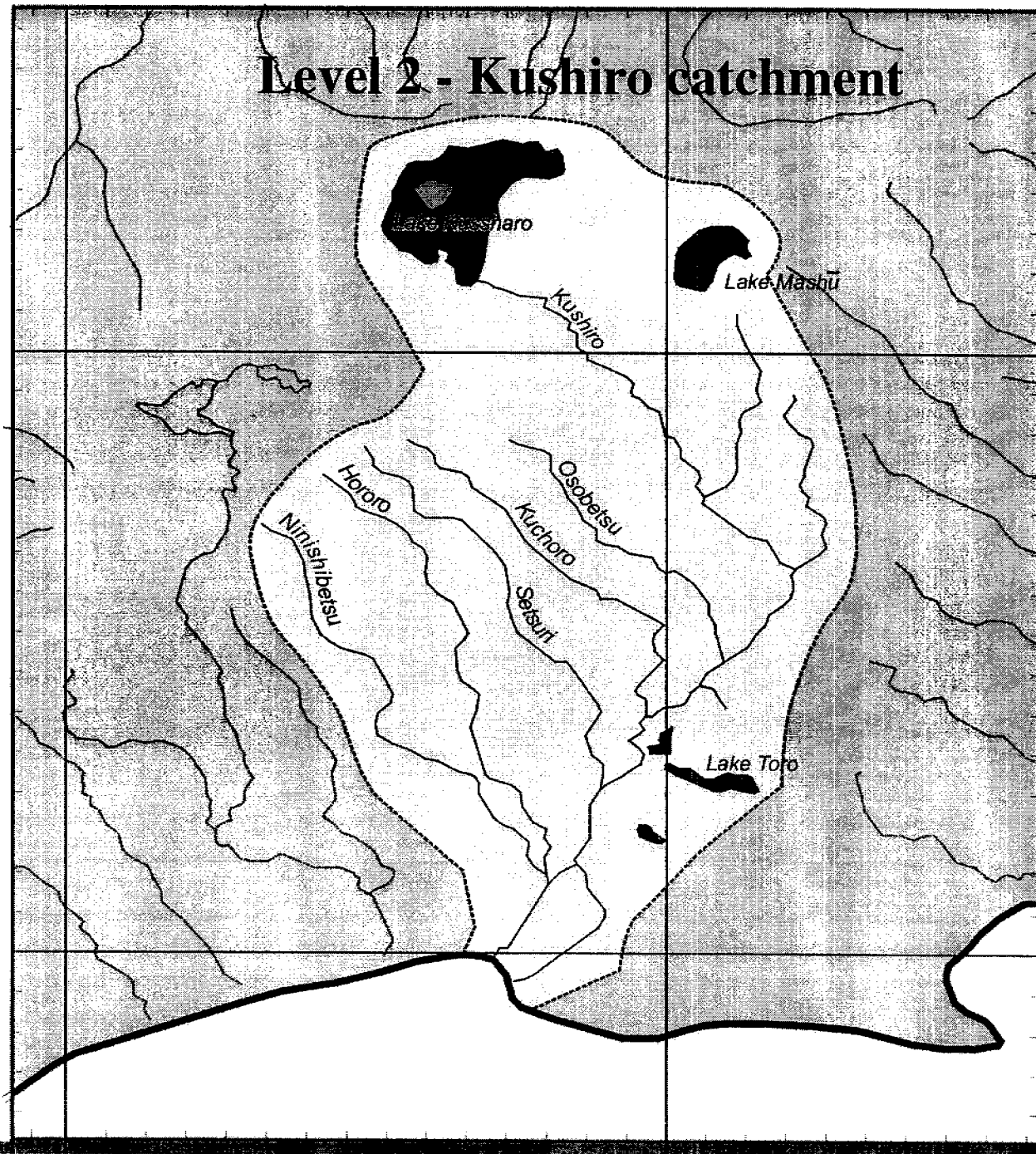
144 00'

144 30'

## Level 2 - Kushiro catchment

43 30'

43 00'



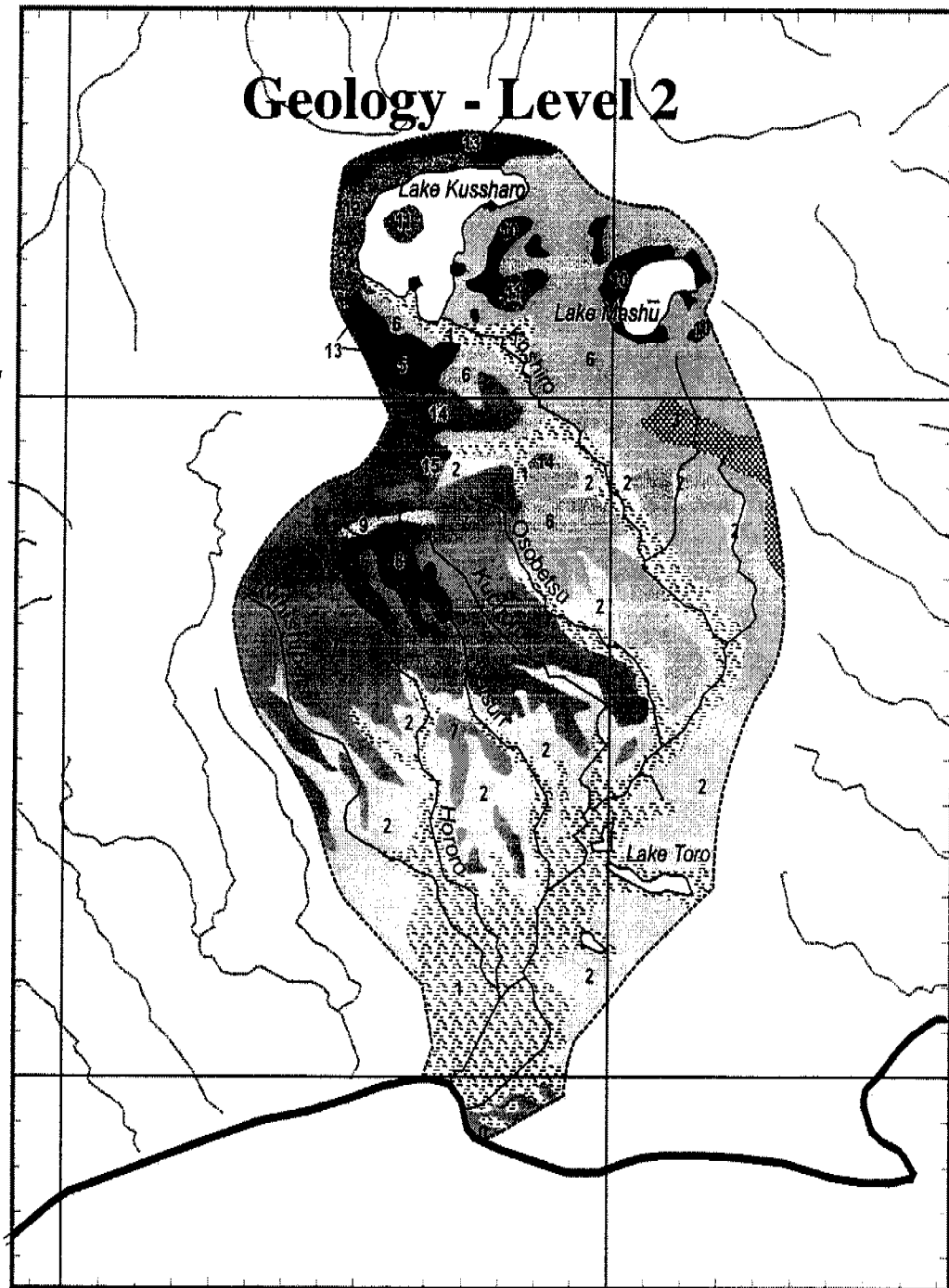
144 00'

144 30'

# Geology - Level 2

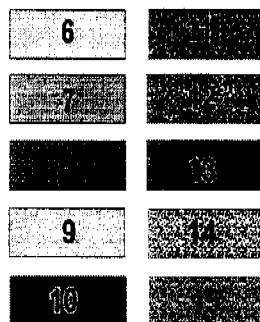
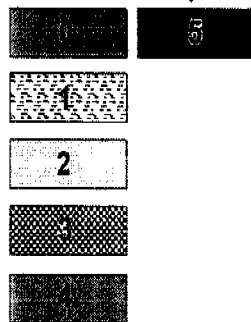
43 30'

43 00'



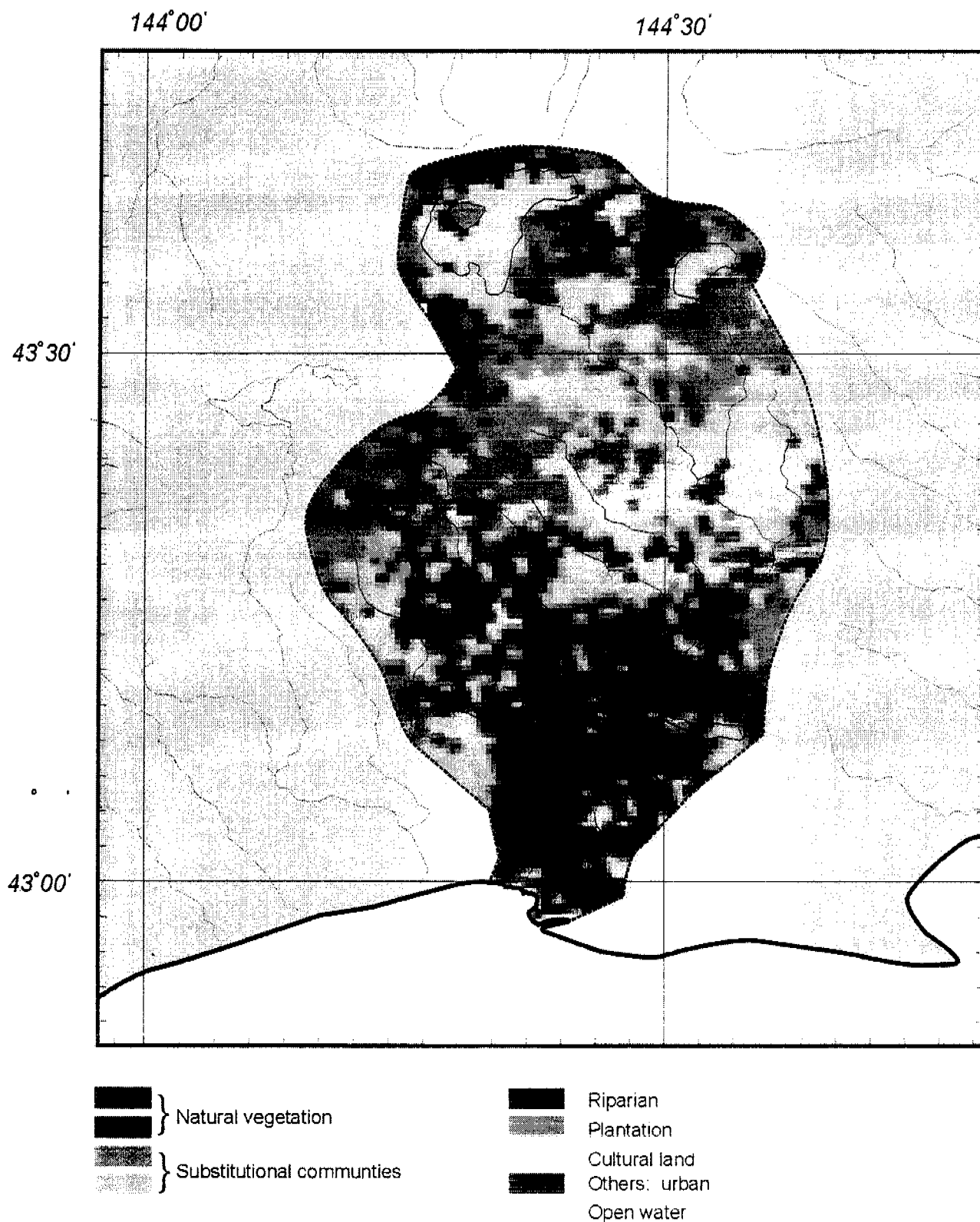
Sedimentary

Volcanic



23c

## Level 2 - Vegetation - Kushiro

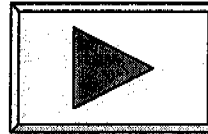




## **Level 3 (scale: 1 : 250 – 500 000)**

### **Wetland complex**

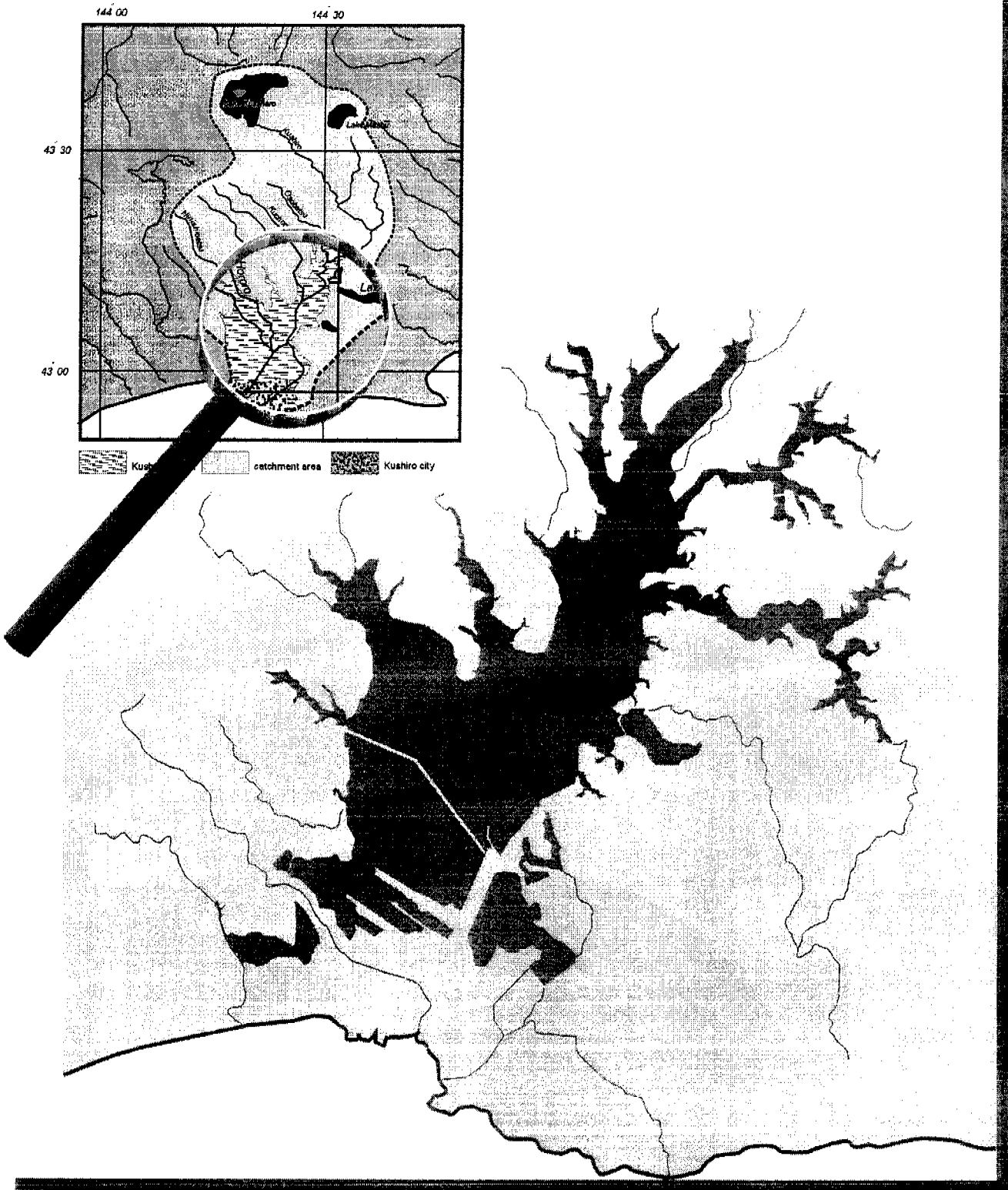
- **Kushiro marsh**



- **Location**
- **Climatic characteristics**
- **Ecological character**
- **Physical features**
  - **Geomorphic setting**
  - **Erosional status, bathymetry, mouth condition, bottom materials (coastal complexes)**
  - **Altitudinal range**
  - **Spatial characteristics**
  - **Soils**
  - **Water regime**



## Level 3 : Kushiro Marsh



## **Level 3 - Kushiro marsh**

- **Physico – chemical features**

- Temperature

- Salinity

- Acidity / alkalinity

- Transparency

- Nutrients

- **Biological features**

- Vegetation cover

- Faunal assemblages

- Noteworthy species

- Population demographics

- Wetland classification

- Wetland goods and services

- Jurisdiction

- Agencies working in the area



## **Level 4 (scale 1: 25 – 50 000)**

### **Wetland habitat**

- Reedswamp, peatbog, alder, sedge meadows ..... of Kushiro marsh



- Classification of natural and man-made habitat

- For each habitat – comparative analyses of :

- Ecological character
- Physical features
- Physico-chemical features
- Biological features



## Level 4 : Wetland Habitats, Kushiro Marsh



# Example physico-chemical features

	<i>Habitat a</i>	<i>Habitat b</i>	<i>Habitat c</i>	<i>Habitat d</i>
<i>Salinity</i>	<i>fresh</i>	<i>fresh</i>	<i>brackish</i>	<i>fresh</i>
<i>pH</i>	<i>acidic</i>	<i>neutral</i>	<i>neutral</i>	<i>alkaline</i>
<i>Transparency</i>	<i>clear</i>	<i>clear</i>	<i>turbid</i>	<i>opaque</i>
<i>Nutrients</i>	<i>mesotrophic</i>	<i>oligotrophic</i>	<i>mesotrophic</i>	<i>eutrophic</i>



## **Level 4 - continued**

- **Local communities**
- **Goods and services associated with each habitat**
- **Land and water use**
- **Management issues and threats**
- **Jurisdiction**



## Possible benefits of AWI to MRC and participating governments in LMB

- ◆ Integration of a disparate range of analyses relevant to wetland inventory, classification, monitoring and management.
- ◆ Collection of standardised information on wetlands (using agreed parameters and procedures).
- ◆ Hierarchical approach to delineation and characterisation of wetlands in the LMB at scales determined by the amount of detail required.





## **Outputs in the form of:**

- **Core data on LMB wetlands.**
- **Centralised database within MRC .**
- **Hydrogeomorphic classification of wetlands .**
- **Identification of threats to wetland productivity in the LMB.**
- **Identification of critical bio-diversity hotspots.**
- **Sound basis for developing LMB wetland monitoring program.**
- **Easily accessible tool for wetland mangement purposes.**



# **Inputs required from MRC**

◆ **Exchange of reliable information about wetlands in the LMB drawn from previous / existing studies :**

◆ **Inventory of wetlands in Lower Mekong.**

◆ **Inventory and management of Cambodian wetlands.**

◆ **Mekong Biodiversity project (GEF).**

◆ **Critical wetlands study (ADB).**

◆ **..... any others.**



## **Inputs ...**

- ◆ **Obtain endorsement by Ministry of Environment and National Mekong Committees (NMC)**
- ◆ **Facilitate collaboration needed with agencies holding relevant information about wetlands in LMB**



# **Benefits to participating countries**

- **Case study - to be used hereafter for “demonstration” purposes.**
- **In the long term, the prospect of obtaining :**
  - **Core data on Asian wetlands to support international conventions ( Ramsar, CBD .....)**
  - **Analysing long term trends in status of Asian wetlands.**
  - **Making regular revisions and updates .**
  - **Disseminating information for use in the sustainable development and conservation of Asian wetlands.**



# **CONCLUSIONS**

**Aided by the DGIS funding  
already secured**

**and the high level of support for  
the AWI at**

**Ramsar's East Asian meeting in  
Bangkok**

**and**

**given the co-operation of the MRC**

**.....**

**The AWI is the way forward !**

