

## Brief overview of Highly Pathogenic Avian Influenza and Wild Birds



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# Wetlands International

Wetlands International works globally, regionally and nationally to achieve the conservation and wise use of wetlands, their resources and biodiversity, as a contribution to sustainable development.





- independent, not-for-profit, global organisation supported by Government membership
- 15 country offices in Central and Eastern Europe, Africa, South, East and North Asia, Oceania, and South America,
- head office in Wageningen, the Netherlands.
- supported by extensive Specialist Group networks, network of Associate Experts and a network of tens of thousands of volunteers in the field.

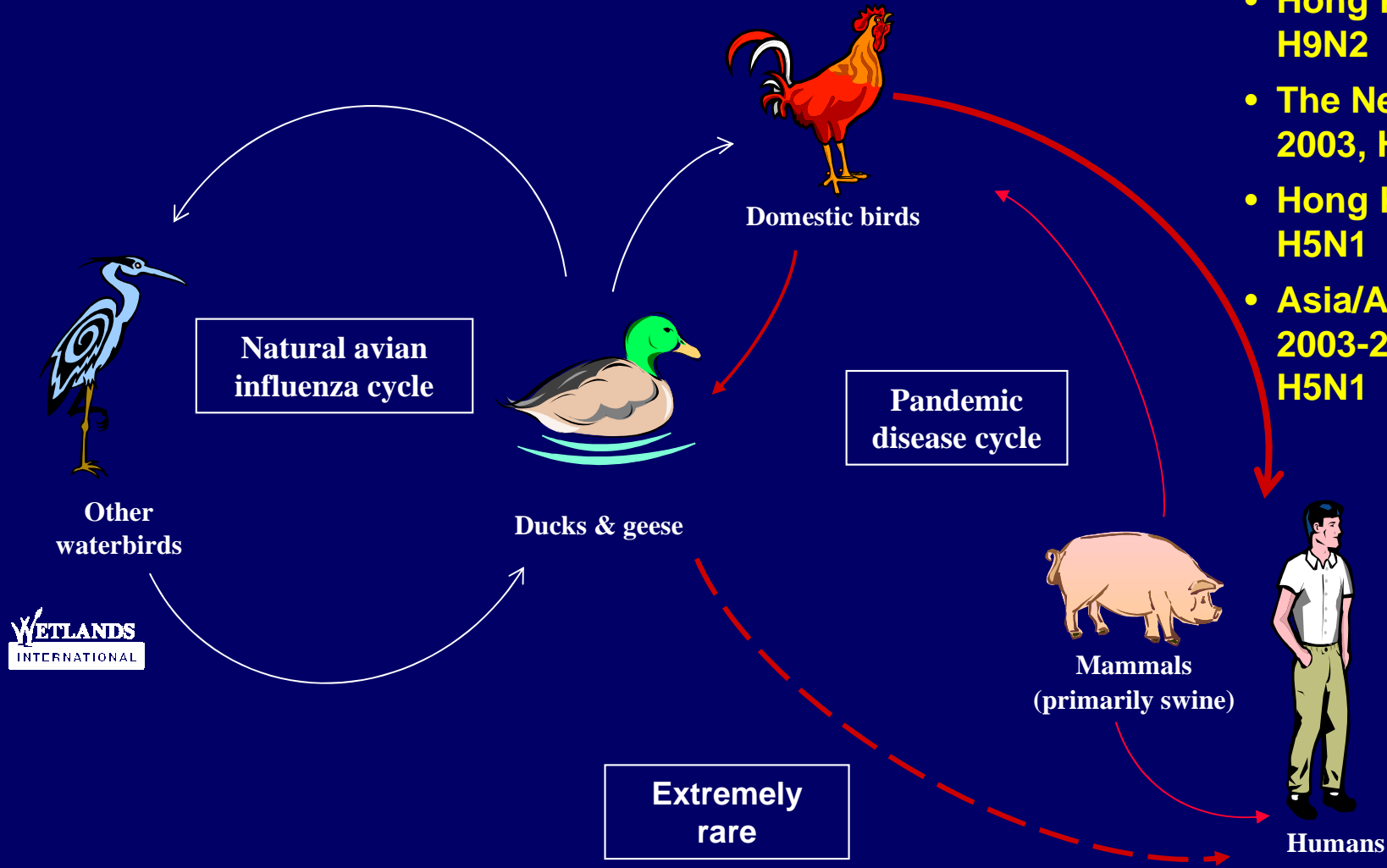
## Key Points

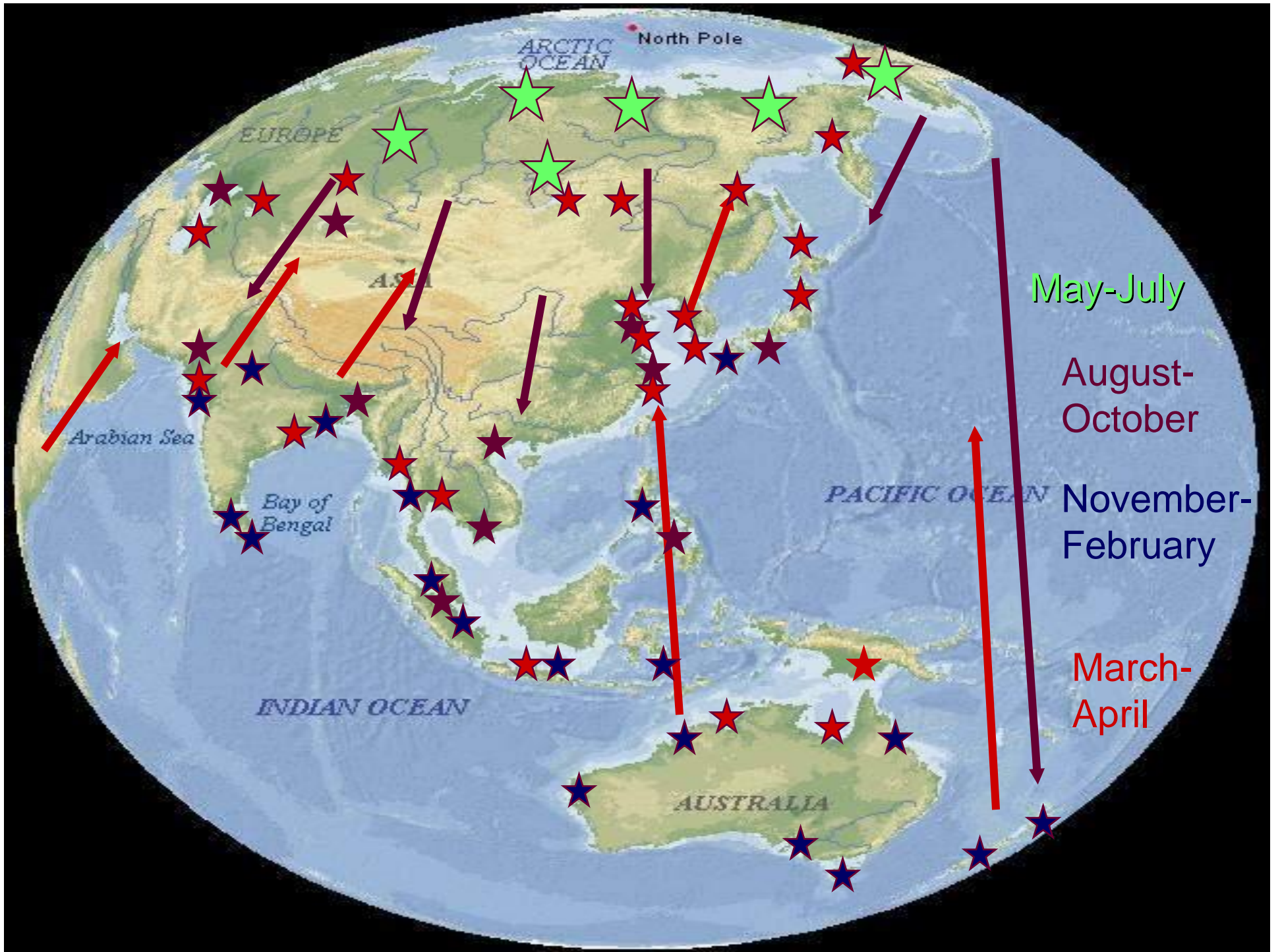
- **Introduction to waterbirds, migration and flyways**
- **Known vectors for spread of AI and role of wild birds**
- **UN Scientific Task Force on Avian Influenza and Migratory Species**
- **Asia-Pacific Working Group on Migratory Waterbirds and Avian Influenza**
- **Outcomes of the Wildlife and AI, Bangkok Meeting**

# Cycle of Influenza Viruses in Nature

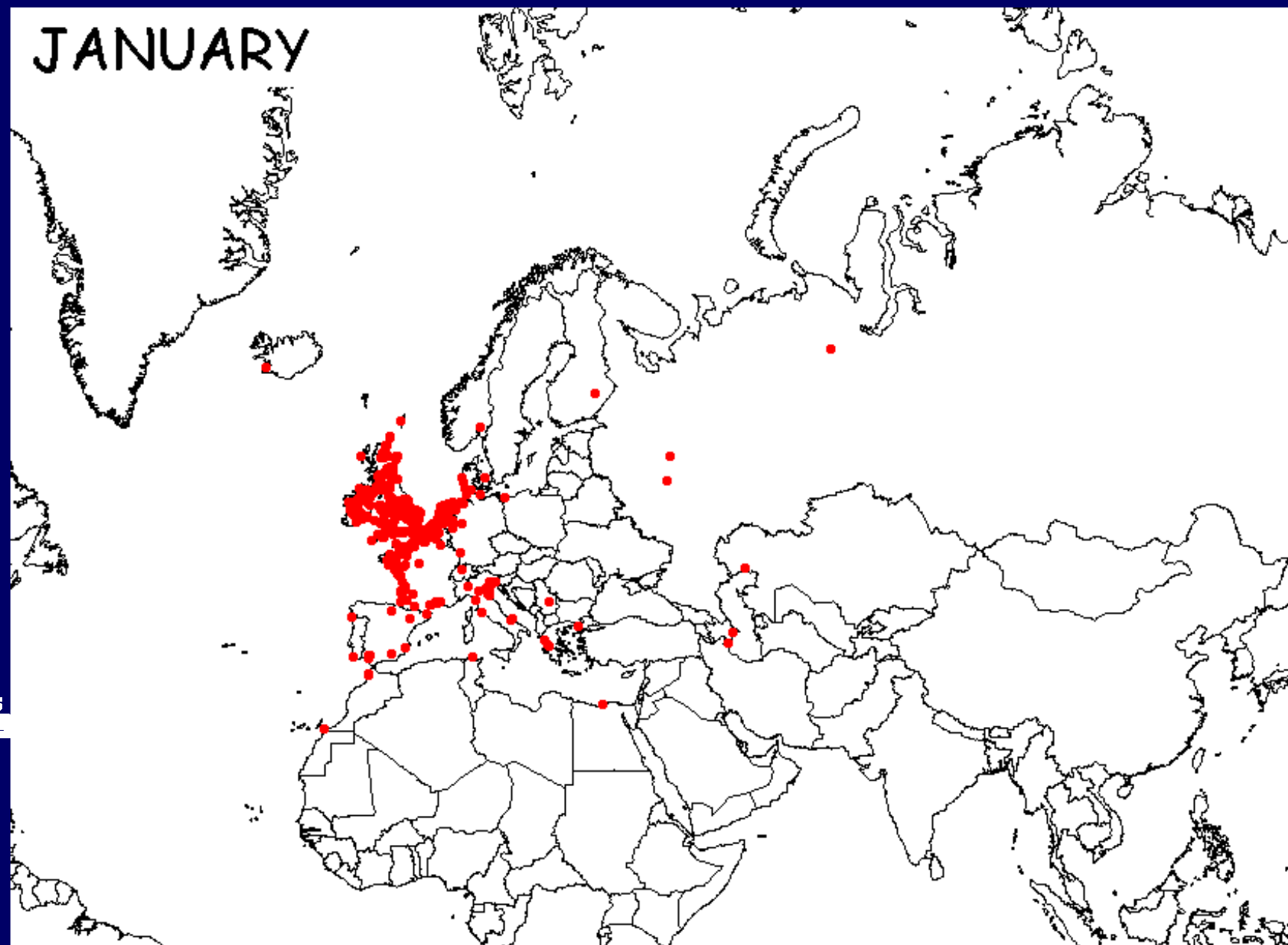
 High pathogenicity  
 Low pathogenicity

- Hong Kong, 1997, H5N1
- Hong Kong, 1999, H9N2
- The Netherlands 2003, H7N7
- Hong Kong, 2003, H5N1
- Asia/Africa/Europe - 2003-2007 (ongoing) H5N1





## Monthly changes in Wigeon distribution based on ringing data



## Migration strategies (can) vary -

by species (and population within species)

- extent of migratory path can vary, both by
  - total length of flight-path
  - number and duration of stops along flight-path
    - » ‘Hop, skip and jump’

by age of individual

by sex of individual

by individual

by season

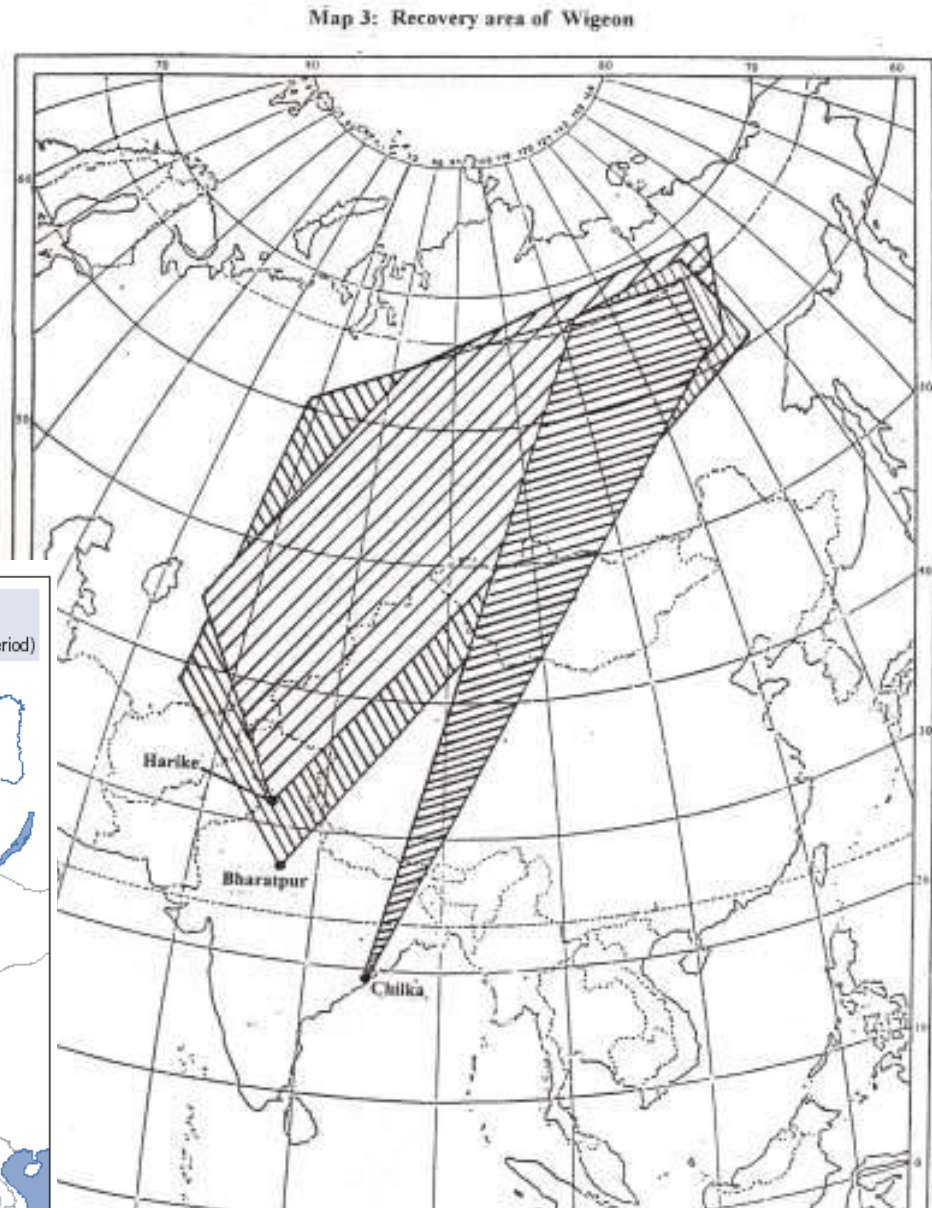
with weather

- e.g. unfavourable headwinds can increase number of stops used

# Study of migration through marking waterbirds (satellite transmitter, neck collar, leg flags, metal bands)

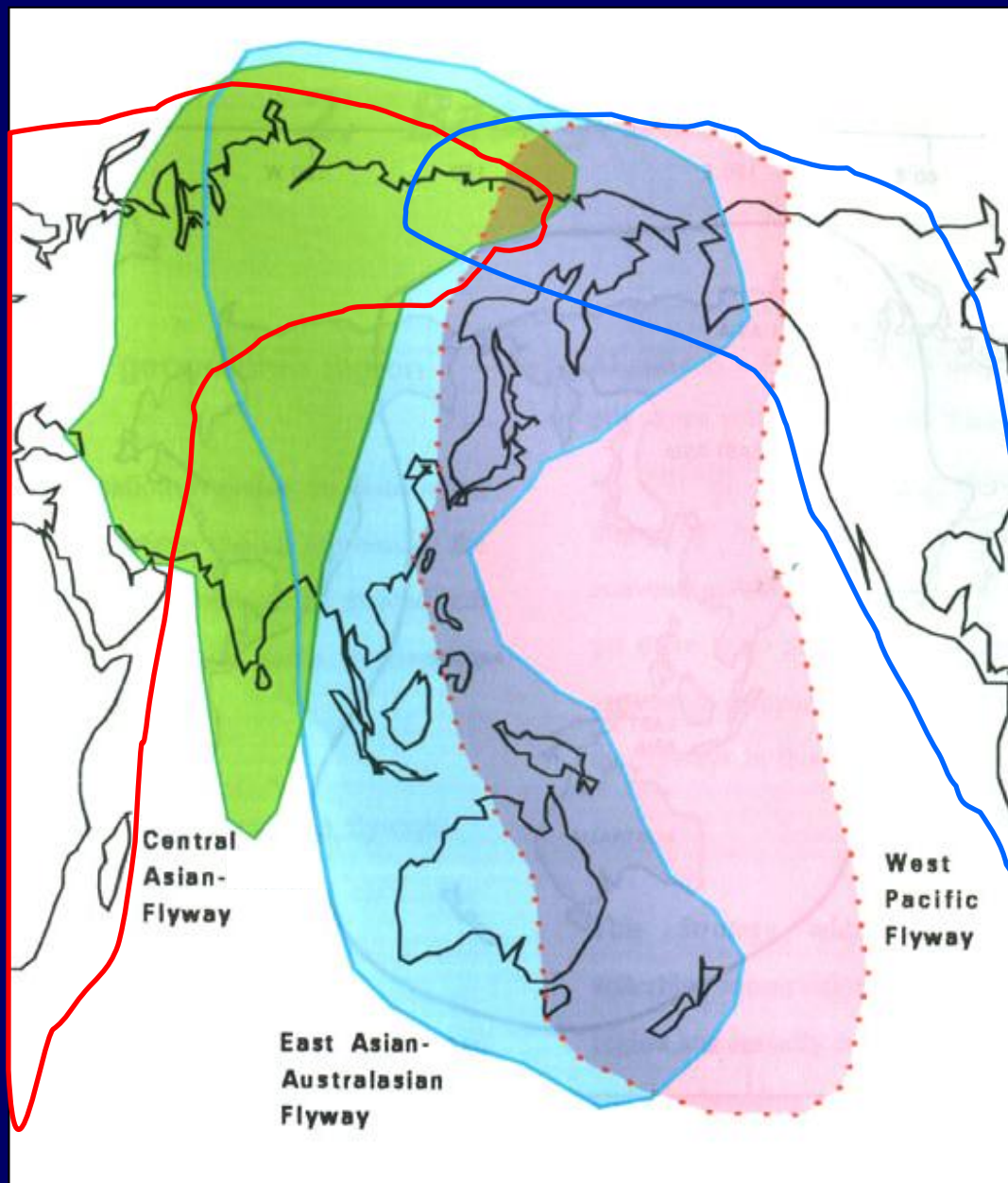


# Migratory patterns of Eurasian Wigeon *Anas penelope*

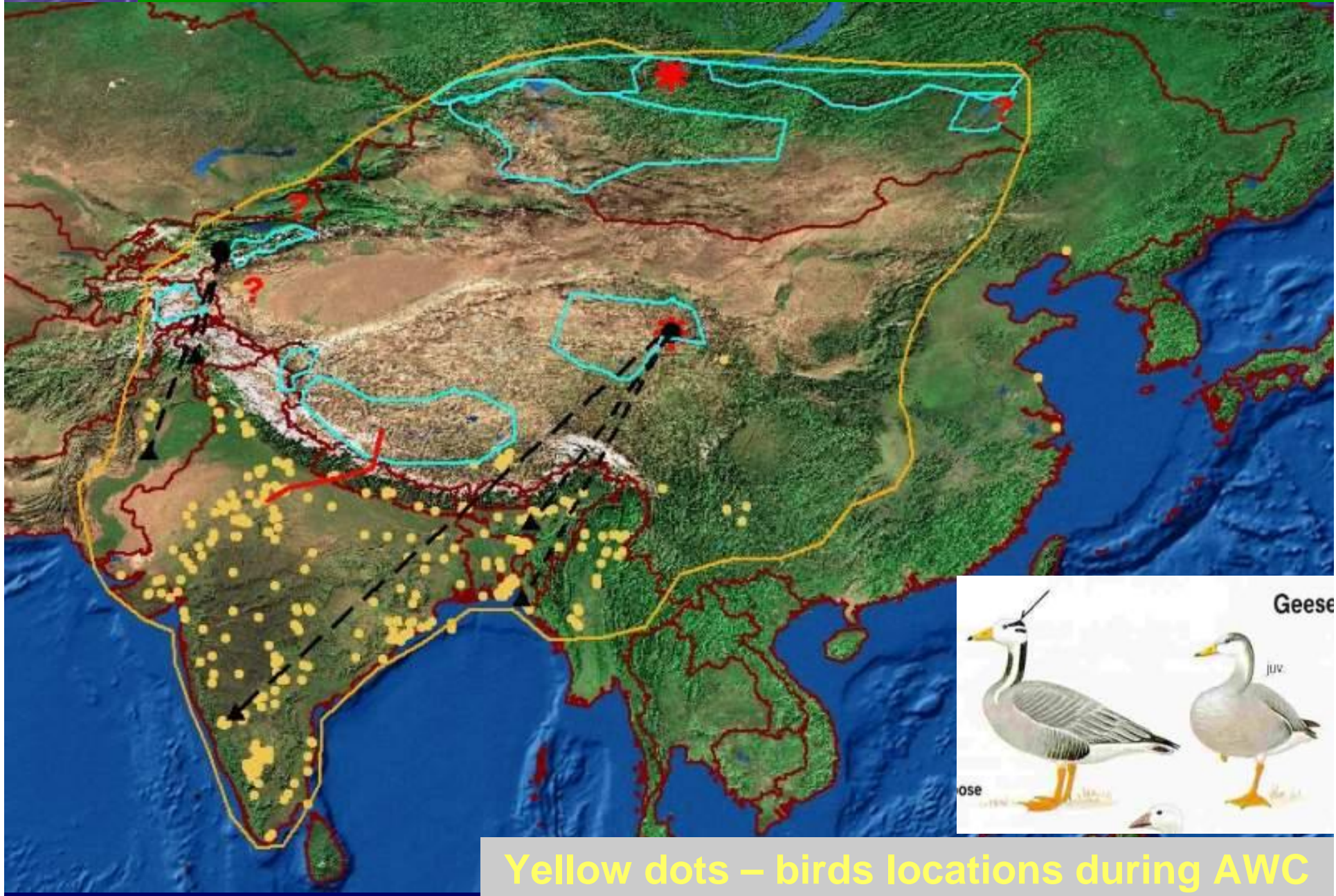


source: Bombay Natural History Society

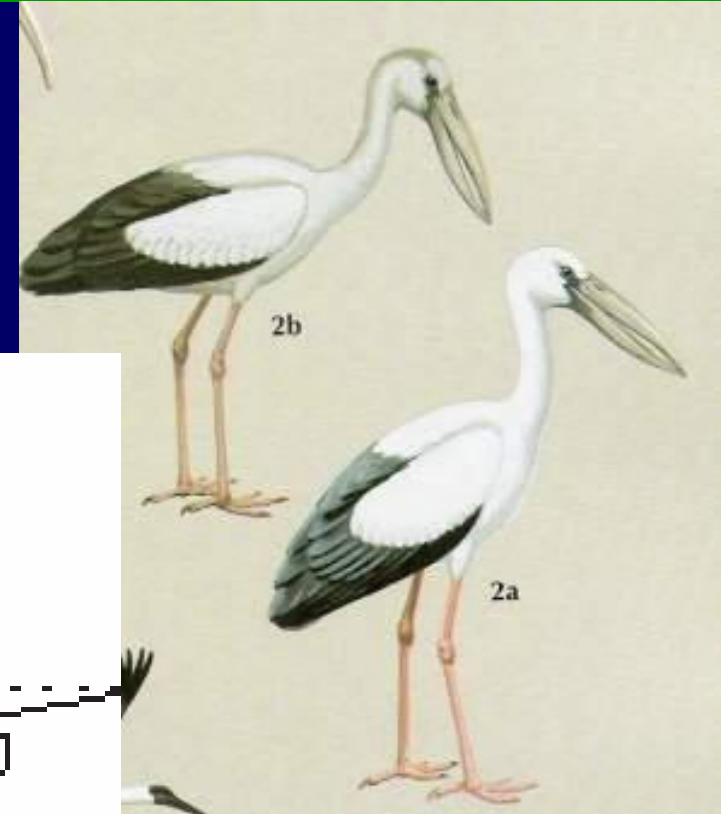
## Major waterbird flyways in the Asia-Pacific



# Barheaded Goose distribution in non-breeding period



# Distribution and Migration of Asian Openbill *Anastomus oscitans*



## Testing for presence of H5N1 virus in wild birds

1. At a site of mass mortality (100 birds), in Mongolia, 774 samples from both dead and living birds. No evidence of the virus in any live ducks, gulls, swans or geese tested.
2. Testing of wild and “healthy birds” in Asian, African & European countries is nearly 99.9% **negative** for HPAI H5N1 (>200,000 samples)
3. Nearly all wild birds that have tested positive for the disease were dead or moribund and, in most cases, found near outbreaks in domestic poultry.
4. Only a very small proportion of birds found dead are found H5N1+
5. Only a tiny fraction of any biogeographic population has been sampled to date. (one pop > 1% sampled (Iceland Whooper Swan))
6. Reports to OIE - of 157 outbreaks reports, only in 70 (45%) species identified to species level (so 2/3 cannot be used)
7. Information on results of surveillance of wild birds are very slow to come into public knowledge
8. So highly lethal and infected birds unlikely to be capable of long distance migration?

# Food habits of wild birds contracting H5N1

- **Predatory/scavenging species** Buzzard, Peregrine falcon, Jungle crow
- **Species that feed and scavenge on land and waterways near farms, villages and towns** Feral pigeon, Jungle crow, Magpie, Grey Heron, Kestrel, Scaly-breasted Munia
- **Flocking and colonial nesting species that feed in wetlands or near farmland** Mute Swan, Whooper swan, Mallard, Coot, Common pochard, Tufted duck, Great Crested Grebe, Great Cormorant, Bar-headed Goose, Greater Scaup, Barnacle Goose, Goosander

## Susceptibility of wild birds to H5N1

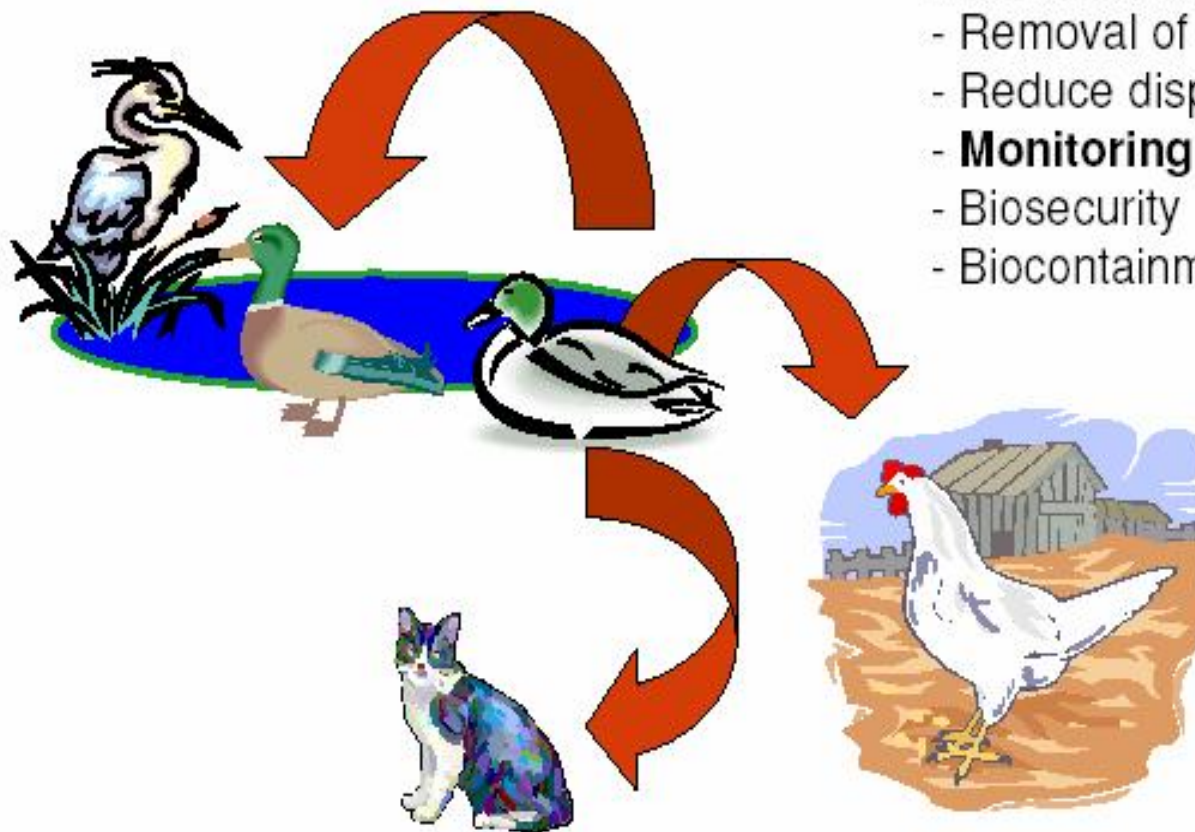
- Limited information on species in wild
- Ongoing experimental work on ducks
  - Some birds die
  - Some survive and shed virus for a few weeks
  - Can infect other individuals of the species
- Some species like Mute Swan *Cygnus olor* and Barheaded Goose *Anser indicus* appear more susceptible (sentinel value)
- Ability of birds to carry H5N1 over long distances not known
- **More research urgently needed** (field surveillance for virus in different groups of birds)

# Summarizing: priority actions for wild and captive birds

## Specific actions

- Improve biosecurity measures of poultry industry and develop strategies to limit risk of disease transmission between domestic birds, wild birds and humans.
- Ensure strict application of internationally agreed quarantine and health standards for cross-border transport of bird products and captive birds.
- Crackdown on illegal transport of bird products and captive birds, nationally and internationally.
- Educate public and authorities to understand that **draining of wetlands** and **culling of wild birds** will **not prevent the spread** of HPAI, as outlined by FAO, OIE, WHO, Ramsar Convention and CMS.

## Interruption of risk pathways



### Intervention options

- Removal of dead wild birds
- Reduce dispersal of wild birds
- **Monitoring**
- Biosecurity
- Biocontainment

Targeting of interventions needed

# *Duck and poultry production in and near wetlands*



# Avian Influenza - The Scientific Task Force

*Avian Influenza – The Scientific Task Force*



## Members:

*Convention on Migratory Species  
African Eurasian Waterbird  
Agreement  
BirdLife International  
Convention on Biological Diversity  
CIC/FACE  
Food and Agriculture Organisation  
ISDR  
Ramsar Convention  
Wetlands International  
Wildlife Conservation Society  
Zoological Society of London*

## Observers:

**United Nations  
Environment Programme  
World Health Organisation  
OIE**



## Activities and Objectives

- Established in August 2005 by UNEP/CMS in cooperation with AEWA
- Works through teleconferences (9), e-mail & meetings
- Initial focus has been on:
  - Ø obtaining the best scientific advice on the conservation impact of the spread of HPAI H5N1
  - Ø assessing the role of migratory birds as vectors and victims of the virus
  - Ø issuing advice on the root causes of the epidemic as well as technically sound measures to combat it
  - Ø developing early warning expertise
- Currently coordinated jointly by UNEP/CMS and FAO



### Some conclusions:

- Degradation of ecosystem health likely to have had a role in the evolution and spread of HPAI H5N1 ® conditions of mixing between people, domestic poultry and wild waterbirds
- Minimizing the role of wild birds in the spread of HPAI ®  
Separation of poultry operations and wetlands used by wild birds to avoid cross-contamination
- Preventing further loss of wetlands and improving mechanisms for their maintenance and wise use as an important long-term requirement



# Avian Influenza & Wildlife Workshop on 'Practical Lessons Learned' Aviemore, Scotland, 2007

## Main goal:

Provide a platform for active debate and direct information sharing on practical responses to Avian Influenza



## Conclusions and Recommendations

- Contingency planning, risk assessment and response strategies
- Surveillance and early warning systems
- Epidemiology: tracing sources of infection
- Communication, education and public awareness
- Research and data needs
- Finances



**NEED FOR GUIDELINES FOR WILDLIFE**



## Avian Influenza - Outputs

- Brochure 'Avian Influenza and Wild Birds – What is their actual role in the spread of the virus ?'



*Available in English, Spanish, French, Chinese, Russian and Arabic*



- Proceedings of the AI Seminar in Nairobi 2006 and the AI & Wildlife Workshop in Aviemore 2007 published on CD-ROM



# AIWeb Developed by UNEP/AEWA Maintained by UNEP/CMS (www.aiweb.info)

# AIWeb

The Avian Influenza, Wildlife and the Environment Web

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### MEDIA CENTER

Antibodies to bird flu found in wild ducks in Altai region (Russia) (4/28/2007)

WHO official: Risk of devastating bird flu pandemic remains (4/24/2007)

[Archive >>](#)

### FROM THE TASK FORCE

Context: HPAI and Direct Users – Hunters

Context: African HPAI Caused by H5N1 - Situation Analysis in Relation to Wild Birds

[Archive >>](#)



### AVIAN INFLUENZA

Due to concerns about the role of migratory birds as potential vectors of the H5N1 virus and its rapid spread from Asia towards Europe and Africa last year, CMS, together with the African Eurasian Waterbird Agreement (AEWA) established the Scientific Task Force on Avian Influenza in August 2005. [More...](#)

### TOPICS III FOCUS

Avian Influenza and Wild Birds

Worldwide Spread of Avian Flu

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International Symposium on Avian Influenza: Integration from Knowledge to Control

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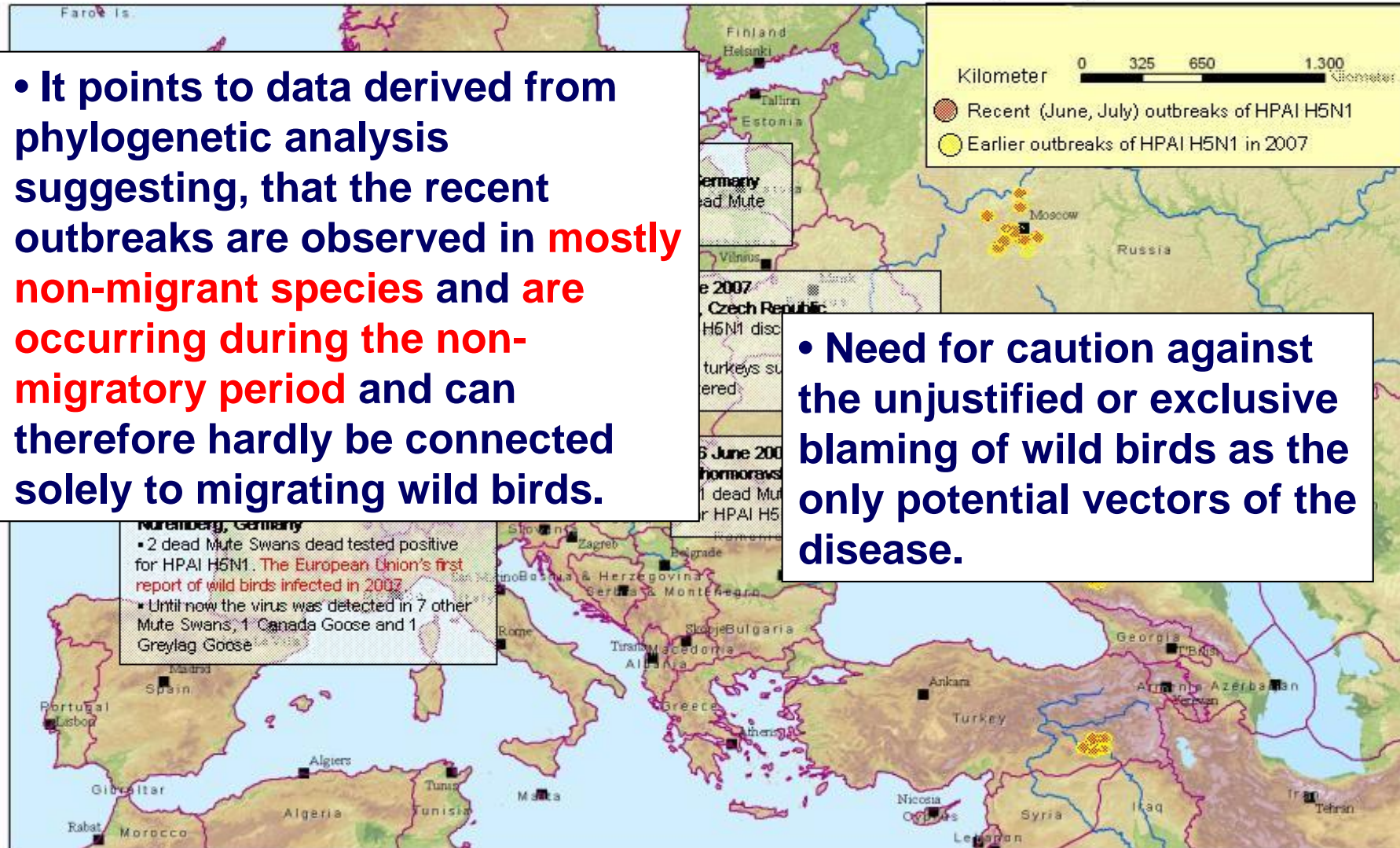
# Task Force statement: New outbreaks of HPAI in Central Europe, June & July 2007

Lokalisation von Ausbruchs- und Verdachtsfällen von aviärem Influenzavirus des Subtyps H5N1 in Europa (2007)

## Outbreaks of HPAI H5N1 in Europe (2007)

• It points to data derived from phylogenetic analysis suggesting, that the recent outbreaks are observed in **mostly non-migrant species** and are **occurring during the non-migratory period** and can therefore hardly be connected solely to migrating wild birds.

• Need for caution against the unjustified or exclusive blaming of wild birds as the only potential vectors of the disease.



# *Asia-Pacific Working Group on Migratory Waterbirds and Avian Influenza*

A Working Group has been established in 2006 and representation includes:

- Government agencies responsible for waterbirds
- International NGOs
- Convention secretariats
- Intergovernmental organisations

Secretariat support provided by Wetlands International



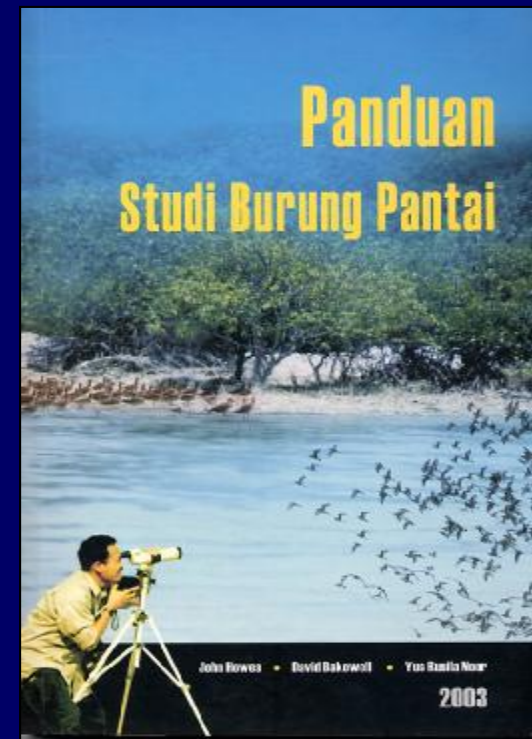
# Regional Needs

## 1. Knowledge

- Migratory strategies and routes of migratory waterbirds
- Distribution and congregatory sites
- Adequate AI surveillance
- Information sharing of research developments and surveillance activities

## 2. Capacity

- Established national programmes for waterbird marking and monitoring
- Adequate national skills for waterbird migration and monitoring research
- Appropriate AI surveillance programmes for migratory waterbirds



## *Regional Needs (contd)*

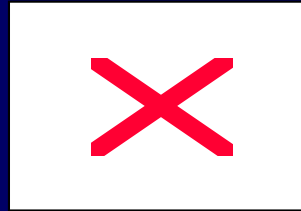
### 3. Regional tools and collaborative mechanisms

- Communication links on issues of AI and knowledge sharing
- Colour marking schemes for different waterbird groups
- Sustainable funding of research and monitoring

### 4. Awareness raising of policy makers, managers and public

- Wide range of AI transmission factors (potential of wild bird involvement)
- Need for enhanced research and surveillance to identify high risk areas and species
- Negative impacts of culling of wild waterbirds and destruction of habitats

# Avian Influenza and Wildlife: Regional Surveillance and Research Priorities for Asia, 3-5 September 2007, Bangkok



- Provided an opportunity for Asian countries to share their ongoing wildlife and AI related activities
- Brought together avian, wildlife, veterinary, and disease specialists to encourage coordination and collaboration
- Achieved a better understanding of national needs, regional needs, and priorities to strengthen capacity and increase knowledge about AI and wild birds.



## *Key sectors to be involved in AI study/control*

**NGOs**


**Technical institutions**

**Intergovernmental  
agencies**

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### Stop blaming waterbirds for avian flu

23-01-2006  
Press release

**Migrating waterbirds are seen as a major health risk since the outbreak of the avian flu. The United Nations state that the recent spread of avian flu to Turkey is caused by wild birds. Millions of wild birds have now reached their winter destination. No serious outbreak due to these migrations has occurred yet. Several outbreaks in the poultry sector did occur. According to Wetlands International, it is now time to shift the attention from wild birds to the poultry sector.**



White Fronted Geese. [zoom](#)


Many feared the last winter migration of wild birds. Millions of birds left the infected areas and flew to southern destinations like Africa. There, millions of waterbirds meet every winter in wetlands before they spread again over the world. Only a few sick birds might be able to cause a major and global outbreak. Several governments took precautions to stop the spread of the flu by wild birds, like measures to keep poultry inside.

These scenarios haven't occurred at all. Although millions of birds migrated over the world, there is no evidence of any spread of the flu by wild birds. The wild birds in Asia were likely too ill to be able to take part in the winter migration. However, there is clear evidence of the trade of poultry between old and newly infected areas.


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