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AVIAN INFLUENZA H5N1

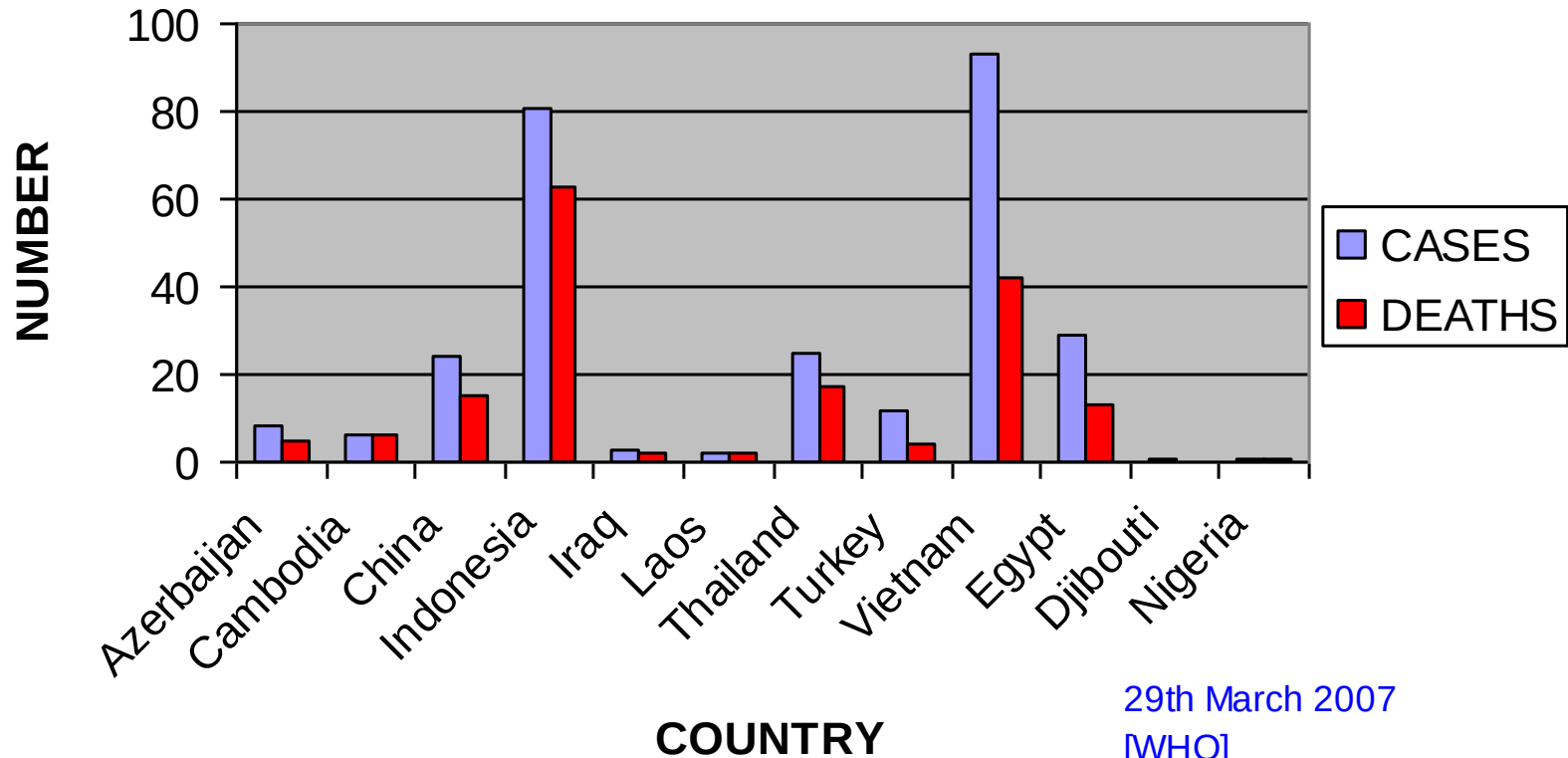
- Myxovirus – influenza colds distemper rinderpest
- Highly Pathogenic Avian Influenza: sub-type H5N1
- [Type A] 16+ types & 143 known sub-types
- Glycoproteins on virus surface: HEMAGGLUTININ (H) & NEURAMINIDASE (N) an enzyme
- Bind with animal GLYCANS lungs & resp. tract
- Avian virus: deep in lungs
- Human virus: lining of nose and throat
- H5N1 currently sensitive to: Oseltamivir (Tamiflu) & Zanamivir (Relenza)

WORLD HEALTH ORGANIZATION (WHO) CONFIRMED HUMAN CASES SINCE 2003

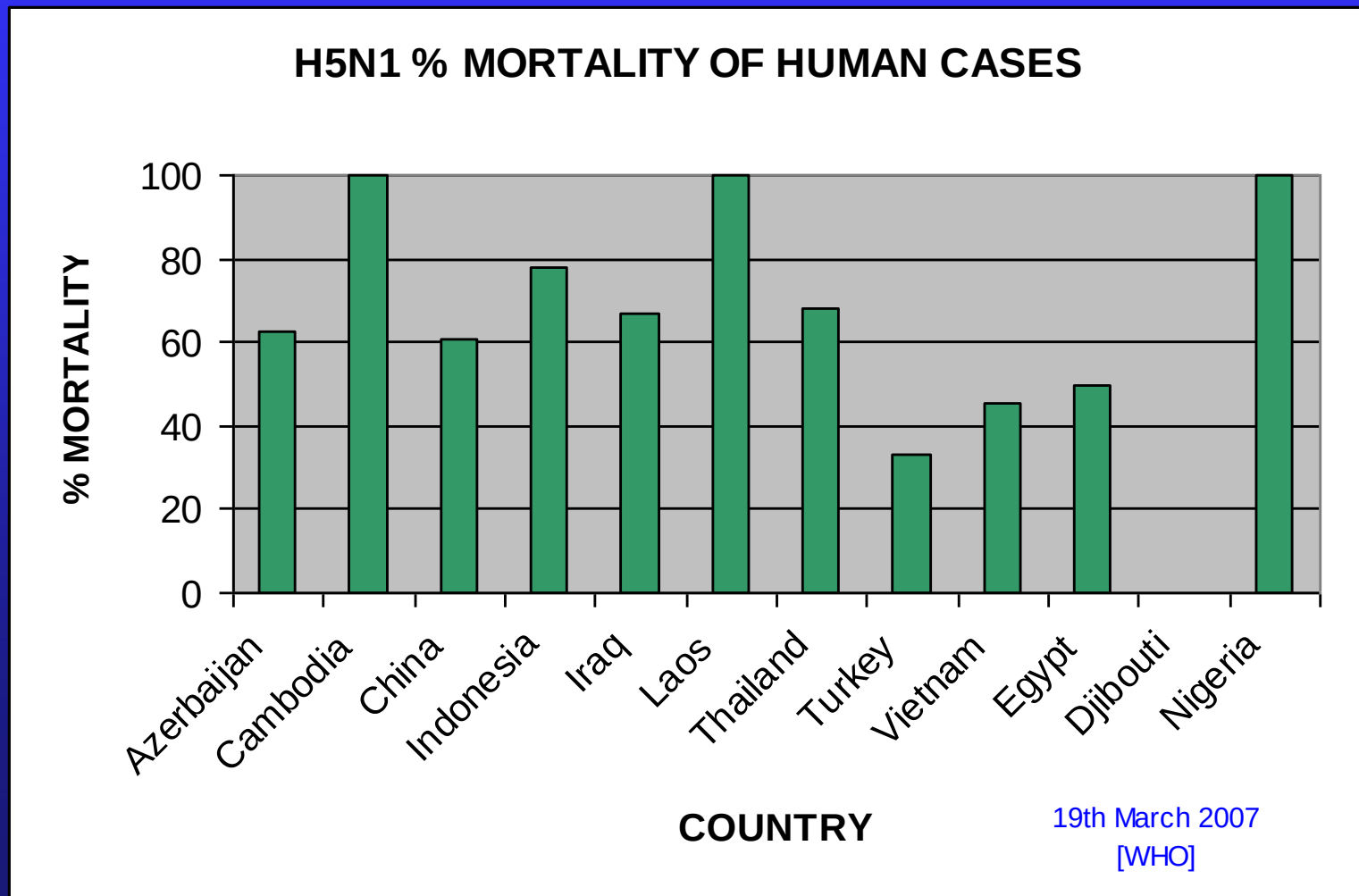
COUNTRY	CASES REPORTED	DEATHS
• AZERBAIJAN	8	5
• CAMBODIA	6	6
• CHINA*	24	15
• DJIBOUTI	1	0
• EGYPT*	29	13
• INDONESIA*	81	63
• IRAQ	3	2
• LAOS*	2	2
• NIGERIA*	1	1
• THAILAND	25	17
• TURKEY*	12	4
• VIET NAM	93	42
• TOTAL (29 Mar. 2007)	285	170

WHO Human Cases 2003-2007

H5N1 TOTAL HUMAN CASES AND DEATHS 2003-2007



H5N1 Human Mortality Rate



WHO CONFIRMED CASES H5N1 IN POULTRY & WILDLIFE

- ASIA 28 countries
Siberian Russia south to Indonesia & India
Georgia south to Palestine
- EUROPE 23 countries
Ukraine S. to Greece & Scotland S. to Spain
- AFRICA 8 countries
Nigeria, Niger, Cameroon, Burkina Faso, Egypt,
Cote d'Ivoire, Sudan & Djibouti

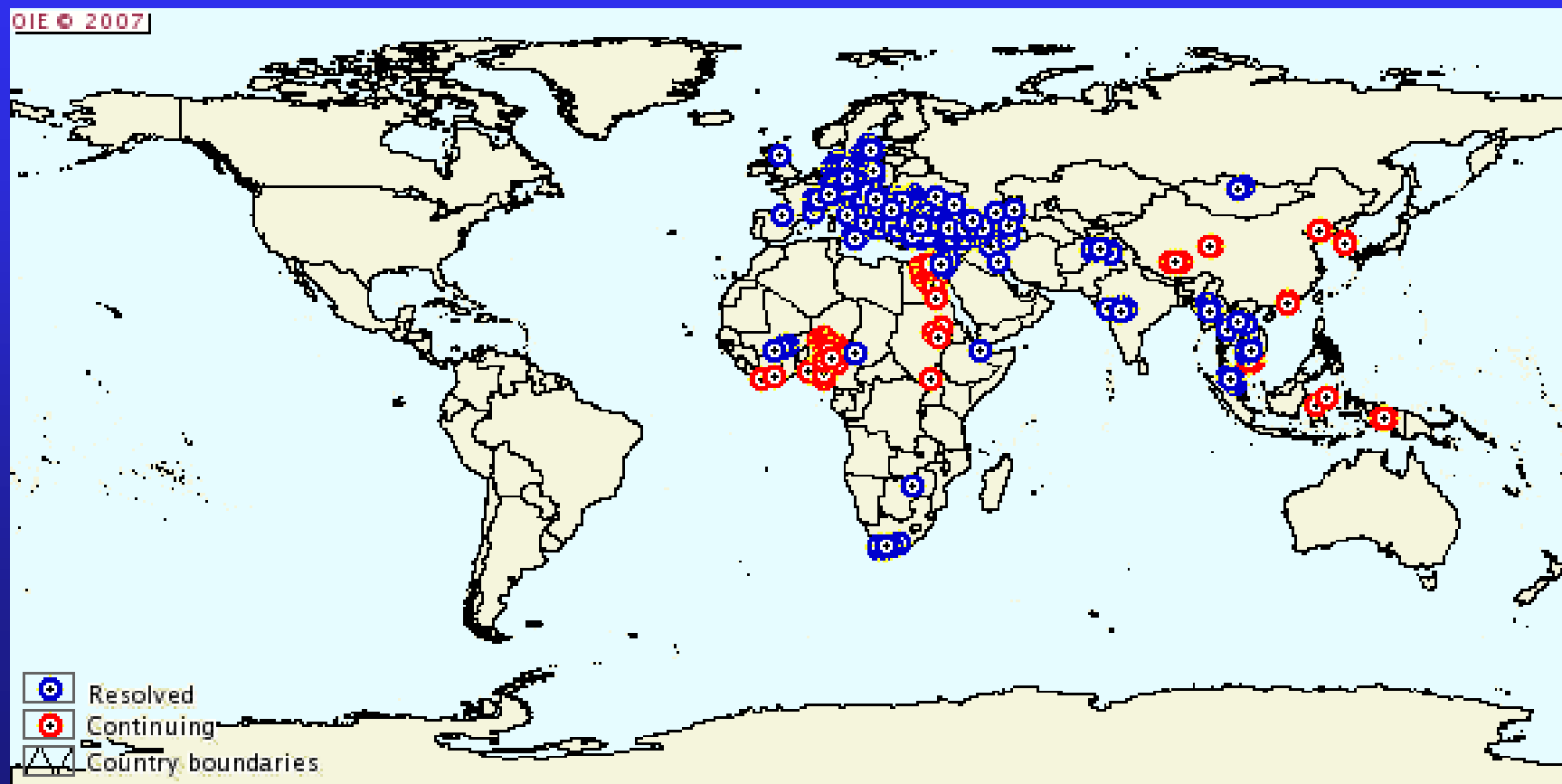
DOMESTIC BIRDS & ALL MAMMALS

- Chickens (100's of millions)
- Turkeys
- Geese
- Ducks
- Pigeons
- Chinese Goose
- Pheasant
- Peacock
- Quail
- Owston Palm Civet
- Tiger (147 in Thai zoo)
- Leopard
- Clouded Leopard
- Domestic cats
- Pigs
- Stone Marten
- Mink
- Zoo & caged birds (many spp.)

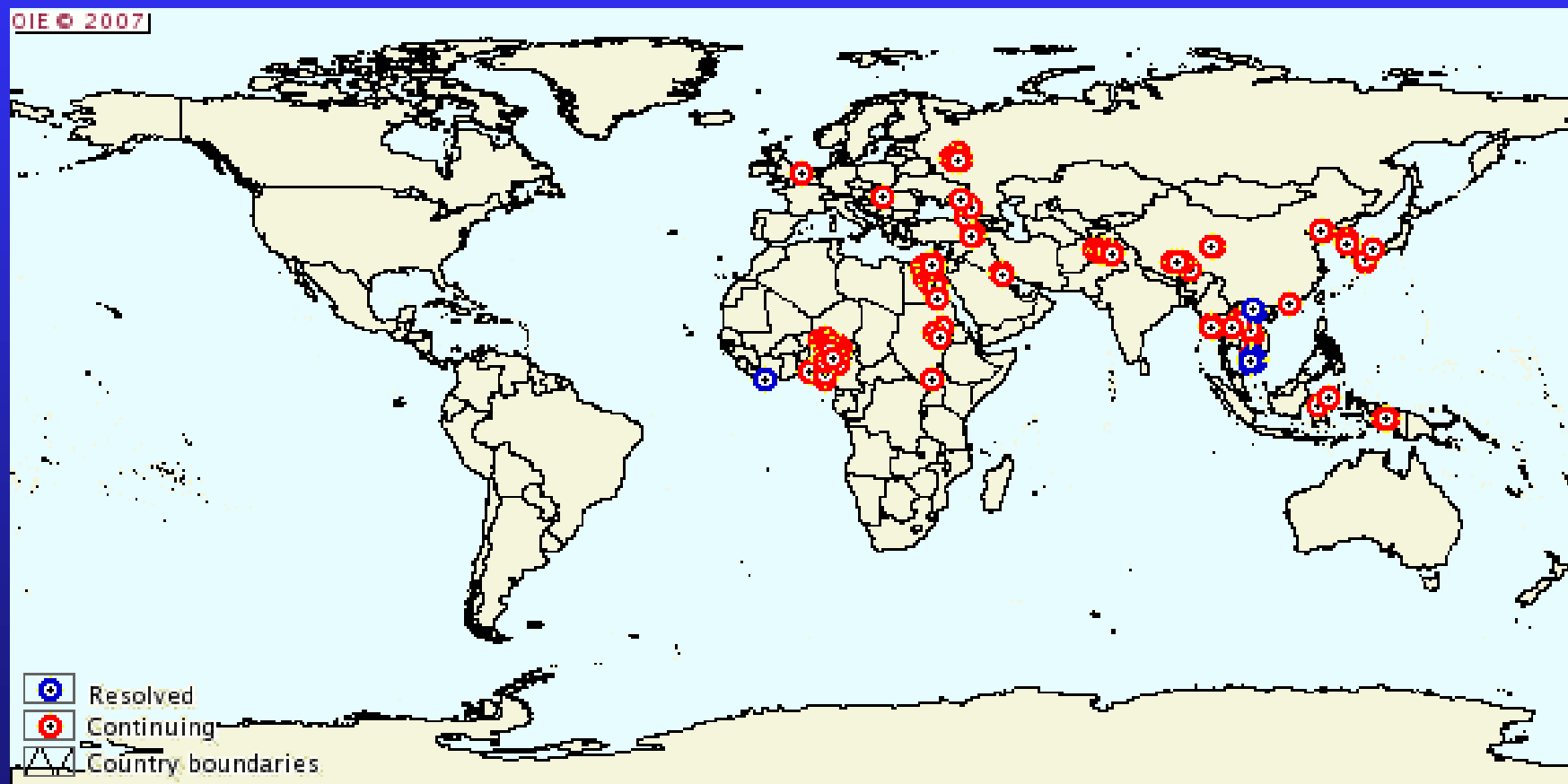
WILD BIRDS (10,000+) 59 spp

- 2 spp. of Swan
- 5 Geese
- 9 Ducks
- 2 Grebes
- 2 Cormorants
- 1 Flamingo
- 2 Cranes
- 1 Stork
- 3 Herons
- 7 Raptors
- 1 Guineafowl
- 4 Rails
- 3 Gulls
- 2 Pigeons/Doves
- 1 Owl (Eagle Owl- Sweden)
- 4 Crows
- 1 Magpie-Robin
- 1 Shrike
- 1 Myna
- 2 Starlings
- 1 White-Eye
- 3 Finches
- 1 Sparrow

2006 H5N1 Outbreaks [domestic poultry & wildlife]



2007 H5N1 Outbreaks [domestic poultry & wildlife]



Dying Bar-headed Goose Displays Classic Symptoms of H5N1

Qinghai Lake area

Spring 2006



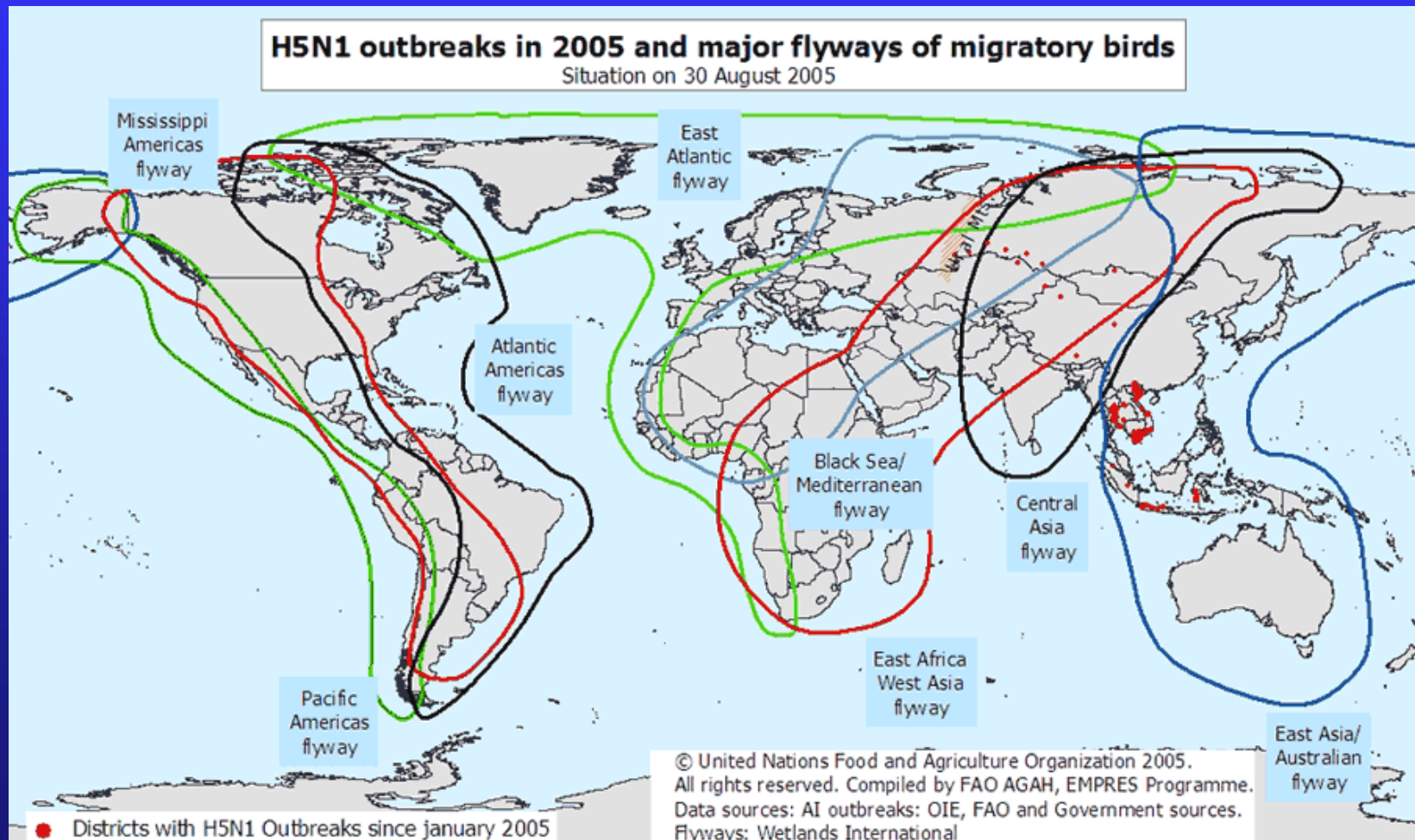
Qinghai Lake area (W. China)

23rd April – 21st May 2006

- 939 Bar-headed Geese
- 27 Ruddy Shelducks
- 2 Common Merganser
- 65 European Wigeon
- 15 Grebes
- 3 Great Egrets
- 2 Black-necked Cranes
- 6 Great Cormorants
- 8 Brown-headed Gulls
- 6 Crows, 6 Hawks
- 1 Vulture
- 82 Other wild birds



Major Migratory Bird Flyways



Manomet Aerial















