Can migratory birds effectively carry HPAI H5N1 virus along migratory pathways?

A summary of studies currently underway

Presenter:
Mini Nagendran, Ph.D., D.V.M.
USFWS, Division of International Conservation
Movements of Bar-headed Geese (*Anser indicus*)

- 60,000 world population
  - >1,500 died of HPAI H5N1, 30 Apr 2005, Qinghai Lake
  - >500 died, 23 Apr 2006, Gancha County
- Social, mate for life, biparental care
- High site fidelity, small colonies and wintering flocks
- Feeds both in uplands and agricultural areas
- *Little studied in the wild, no information on migration routes and population delineation*
Bar-headed Goose Project Nepal and India (Jan-Feb 2005)

Collaborators:
Western Ecological Research Center, UAE-Terrestrial Environment Research Center, Alaska Science Center, Bombay Natural History Society, Wildlife Institute of India, NepalNature, Keoladeo National Park (India), Royal Chitwan National Park (Nepal), BBC, Microwave Telemetry, USFWS-DIC
Traditional Capture Techniques (Indian trappers)

New Marking Technologies

Leg nooses

PTT collar

Solar GPS backpack
Bar-headed Migration over the Himalayas
(Bird by color: circles GPS, triangles PTT)

March 2005
Wintering and Breeding Area Connectivity
Bar-headed Goose (Anser indicus)
Ministry of Forestry, Qinghai Lake Nature Reserve (4400 sqkm)

Collaborators:
Western Ecological Research Center, Patuxent Wildlife Research Center, Alaska Science Center, United Nations-FAO, Chinese Academy of Sciences (Computer Network Information Center, Institute of Zoology, Microbiology, Virology, and NW Institute of Qinghai Plateau Biology)

Egg Island Breeding Colony
Mongolia 2006 International Avian Influenza Research Team

Dr. Martin Gilbert, Wildlife Conservation Society Field Vet

Dr. Kristine Smith, WCS GAINS

Nyambayar Batbayar, Mongolia Wildlife Science Conservation Center

Dr. John Takekawa, USGS WERC

Dulam Purevtseren, Mongolia Central Vet Laboratory

Dr. Scott Newman, United Nations FAO Wild Bird Lead

Diann Prosser, USGS PWRC

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Tseveenmyadag, Natsagdorjiin, Mongolia Academy of Sciences
Drive Trapping

• Captured molting whooper swans and swan geese
Testing and Marking

Flu Strip Testing

Radio attachment
Fall Migration (>2500 km)
www.werc.usgs.gov/sattrack
Swan Goose: Poyang Lake
Whooper Swan: South Korea

(Newman, Takekawa et al., in prep.)
Species marked:
Eurasian Widgeon
Falcated Teal
Common Teal
Chinese Spot-bill
Baikal Teal
Garganey Duck
Mallard

Collaborators on Poyang Lake study:
Western Ecological Research Center,
Patuxent Wildlife Research Center, Alaska Science Center, United Nations-FAO, Chinese Academy of Sciences (Institute of Zoology, and Wuhan Institute of Virology), University of New Hampshire (Complex Systems Research Center)
Ducks marked at Kyzykol Lake in Kazakhstan in September 2007

Collaborators:
Western Ecological Research Center,
Wildlife Conservation Society-GAINS,
Wetlands International

Species marked:
Mallard, Gadwall, Ruddy Shelduck
Collaborators:
CIRAD, United Nations-FAO, USGS, WI