

## Hawk Mountain Sanctuary Principles for Raptor Conservation

### *Avian influenza and raptors: ecological considerations and ways to reduce the risk*

#### **Background and ecological considerations**

- Despite fears regarding a human pandemic, the Hemagglutinin5 Neuraminidase1, or H5N1, highly pathogenic avian influenza, primarily, is a disease of birds (Ash and Roberts 2006).
- The evolution of avian influenza in wild birds is slow overall, but is not insignificant (Olsen et al. 2006).
- The H5 avian influenza subtype has never caused a pandemic in humans (Normile 2005).
- As of early April 2006, H5N1, which is highly pathogenic in birds, has been isolated from at least 105 wild species, most of which are waterfowl or other waterbirds. H5N1 has not been isolated from any raptors. (Olsen et al. 2006).
- Whether or not wild birds play an active role in the dissemination of H5N1 is not known (Olsen et al. 2006).
- Birds of prey are unlikely candidates for spreading avian influenza (1) because they are less common than most wild birds, (2) because during most of the year and in most places they occur at low densities overall, and (3) because they depend upon speed and agility to secure their prey and, therefore, are unlikely to survive for long if infected.
- Although cats generally are resistant to avian influenza this does not appear to be true of H5N1.

#### **Risks to raptors**

- The poultry trade and the human movement of infected materials related to it have been linked to the spread of H5N1 (Olsen et al. 2006). Therefore, scavenging raptors, including both Old and New World Vultures, as well as several species of sea eagles, kites, buzzards (Buteos), and caracaras, are particularly at risk because they sometimes associate with poultry farms and feed upon poultry carcasses (Lapshin 2005).

- Other wild birds, particularly waterbirds, may carry avian influenza. Therefore, bird-eating predatory raptors, including the Peregrine Falcon and the Gyrfalcon, as well as many bird-eating accipiters, are particularly at risk (1) because their prey may carry the disease and (2) because they often target and selectively prey upon weak and vulnerable individuals.

## Reducing the risk and spread

- The proper disposal of poultry corpses and materials associated with them is an important strategy for controlling the spread of avian influenza to raptors and should be encouraged (Lapshin 2005).
- Given their apparent vulnerability to H5N1, cats should not be used for rodent control at poultry facilities (Clark and Hall 2006).
- Increased monitoring of raptor populations as well as the health of individual raptors, both at migration watchsites and elsewhere, are needed to help detect the occurrence of avian influenza in raptors.

## References

- Ash, C. and L. Roberts. Introduction, influenza: the state of our ignorance. *Science* 312:379.
- Clark, L. and J. Hall. 2006. Avian influenza in wild birds: status as reservoirs, and risks to humans and agriculture. *Ornithological Monographs* 60:3-29.
- Normile, D. 2005. Pandemic skeptics warn against crying wolf. *Science* 310:112-113.
- Lapshin, R. D. 2005. People, birds and viruses: what is the arboviruses and avian influenza and how do they threaten raptors? *Raptors Conservation* 2005(4)14-23.
- Olsen, B., V. J. Munster, A. Wallensten, J. Waldenström, A. D. M. E. Osterhaus, and R. A. M. Fouchier. 2006. Global patterns of Influenza A virus in wild birds. *Science* 312:384-388 (and supporting materials).

## Sources for updates on avian influenza

[www.birdlife.org/action/science/species/avian\\_flu/index.html](http://www.birdlife.org/action/science/species/avian_flu/index.html)  
[www.abcbirds.org/media/releases/avian\\_influenza.htm](http://www.abcbirds.org/media/releases/avian_influenza.htm)

### ***Hawk Mountain contact information:***

Keith L. Bildstein, Ph. D.  
 Sarkis Acopian Director of Conservation Science  
 Acopian Center for Conservaton Learning  
 Hawk Mountain Sanctuary  
 410 Summer Valley Road  
 Orwigsburg, PA 17961 USA

Phone: 570 943 3411 ext. 108  
 Fax: 570 943 2284, email: [bildstein@hawkmtn.org](mailto:bildstein@hawkmtn.org)  
 KLB: June 2006