May 22, 2006

John R. Clifford
Deputy Administrator
USDA, APHIS, Veterinary Services
Room 317-E, Jamie L Whitten Building
12th & Jefferson Drive, SW
Washington, DC 20250

Via USPS & E-mail: NAHEMS.Guidelines.Comments@aphis.usda.gov

RE: Draft Avian Influenza Response Plan

Dear Dr. Clifford:

The World Society for the Protection of Animals (WSPA) recently learned that the USDA, Animal and Plant Health Inspection Service has released a draft plan for your agency's response to a potential outbreak of Avian Influenza in the United States. As the world's largest federation of animal welfare societies, WSPA is interested in the measures governments are taking to prevent, or respond to, avian disease outbreaks.

Our organization has been involved in the issue of humane killing for disease control throughout the world. For example, in 2003 the WSPA presented a dossier to the World Organization for Animal Health outlining inhumane killing methods across Asia and, in collaboration with the University of Bristol, developed recommendations on effective and humane culling methods for governments to follow in the event of an H5N1 outbreak.

You will find our comments on the draft Plan attached. Thank you in advance for consideration of our remarks, and do not hesitate to contact me if WSPA USA can be of any assistance to you.

Sincerely,

Allan Kornberg, MD
Executive Director
WSPA USA

Attachment

Comments on USDA-APHIS Draft Avian Influenza Response Plan

The U.S. regional office of the World Society for the Protection of Animals (WSPA) wishes to comment on the United States Department of Agriculture's *Draft Avian Influenza Response Plan* ("Plan") dated April 28, 2006. As the world's largest federation of animal welfare societies, with 667 member societies in 142 countries, WSPA is concerned about the impacts of Avian Influenza (AI), and of the actions taken by governments to contain its spread, on the welfare of birds.

The manner in which federal and state departments of agriculture address infectious diseases has an enormous impact on the welfare of the animals involved. Any contingency plans for responding to the threat of animal disease should include the application of appropriate preventive measures, such as trade restrictions and vaccination, as well as humane methods to be used to care for, transport and euthanize animals should an outbreak occur.

WSPA offers the following recommendations regarding USDA response to the threat of avian influenza in the United States:

- Expand ban on importation of birds
- Work to close live bird markets
- Crack down on illegal trade in fighting birds
- Address care of birds in quarantine
- Regulate transport to slaughter
- Adopt international euthanasia guidelines
- Expand bird vaccination strategy
- Use influence to curtail factory farming practices

Extend Ban on Import of Birds

Avian influenza can spread through three primary potential routes – movements of infected domestic birds and bird products, movements of caged wild birds in trade and movements of wild birds. While some press reports have connected the spread of AI largely with wild bird populations, recent outbreaks in a number of countries, including Cameroon, Egypt, India, Israel, Jordan, Niger, Nigeria and Pakistan, have been attributed to the movement of poultry.

As APHIS is aware, in February 2004 the USDA and the Centers for Disease Control and Prevention (CDC) issued orders prohibiting or restricting the importation of all live birds and unprocessed bird products from regions that had reported the presence of the H5N1 strain of AI at that time. The CDC also established quarantine requirements for U.S.

origin birds returning to the United States. The original USDA order has since been modified in the form of a final rule, published in July 2005, which encompasses any region where the presence of HPAI is reported. Despite these restrictions, the U.S. imported approximately 330,000 live birds in 2004.

Concern has been expressed by animal and human health associations, including the American Veterinary Medical Association, Council of State and Territorial Epidemiologists and the National Association of State Public Health Veterinarians, regarding the continued disease threat posed by the import of exotic birds to be distributed, sold and kept as pets.[1] The legal and illegal trade in exotic birds is particularly troubling due to the large distances these birds typically travel and the close contact among exotic birds and between exotic birds and humans.

Bird protection organizations, including the U.S.'s National Audubon Society and Britain's Royal Society for the Protection of Birds, note that the virus appears to be spreading along trade routes and that the movement of poultry and poultry products for legal and illegal trade presents the greatest risk of disease introduction into a country.[2] Given the rapid spread of AI and the difficulties associated with enforcing quarantine requirements, WSPA encourages the USDA to ban the import of all live domestic birds and to support a ban by the CDC on the import of live exotic birds from all countries, regardless of AI status.[3]

Work to Close Live Bird Markets

As noted in the previous section, the trade in domestic and exotic birds is most likely a primary route of AI transmission, both between and within countries. Research recently published in the *Proceedings of the National Academy of Sciences* analyzed viral lineages and determined that poultry movements were responsible for multiple reintroductions of the disease in Southeast Asia.[4]

Within the U.S., the most poorly regulated venue for trade in birds is the live bird marketing system. Live marketing of birds, such as that which occurs at bird auctions, live animal markets, flea markets and swap meets, presents a high risk of transmission of AI,[5] among birds themselves and potentially between birds and humans or other animals. This is because live marketing venues bring together many species of birds that originate from many sources. In addition, birds in these locations are typically held under conditions not conducive to good welfare, further increasing their susceptibility to disease. Birds not sold at markets may be returned to their farm of origin, or moved to another location, where they can potentially infect large numbers of birds.[6]

Live animal markets were identified as the source of HPAI infection among chickens in Hong Kong in 1997 and among chickens in Vietnam in 2004.[7] According to USDA-Veterinary Services, in the U.S., the 1983-84 H5N2 HPAI outbreak among chickens, turkeys and guinea fowl in the Northeast was associated with the live bird marketing system, and birds infected with H5N2 HPAI were found at two live bird markets during the 2004 outbreak of the disease in Texas. Also according to USDA, low pathogenic AI

has been circulating in live bird markets in the Northeast since 1986. In fact, just last month, chickens and ducks at one live market in New Jersey were found to be carrying LPAI.[8]

The issue of live marketing of birds is addressed in the *Draft Avian Influenza Response Plan* (p. 11). However, while USDA-APHIS has increased surveillance activities at these venues to lower the risk of AI transmission, continued outbreaks of the disease indicate that this approach is inadequate. WSPA encourages the agency to take a further step and permanently prohibit the sale and slaughter of birds at public markets. This action would not only provide for disease control but would benefit animal welfare, as animals in these venues are frequently held and killed in an inhumane manner.

Crack Down on Illegal Trade in Fighting Birds

Cockfighting has been implicated in the spread of avian disease, both because of the movement of birds (within the USA and from abroad, particularly Central America) and because of the involvement of poultry industry workers in the activity. It is generally accepted that cockfighting played a significant role in the Exotic Newcastle Disease (END) outbreak in California and the Southwest in 2002-03. Although cockfighting is currently legal in only two states (Louisiana and New Mexico), it is known to occur throughout the U.S. WSPA urges USDA to aggressively investigate and prosecute cases of illegal trade in fighting birds under the Animal Welfare Act, and to use its influence to secure a ban on cockfighting in the two states where the activity remains legal.

Address Care of Birds in Quarantine

We are pleased to find that the Plan (p. 26) includes a note to the effect that planning should be made for the humane care of animals within a quarantine area. For example, provisions must be made for the movement of essential supplies, such as feed, into a quarantine zone. Birds raised for meat, who are not transported to slaughter due to quarantine, will need to be provided with additional space due to their continued weight gain. These birds are also likely to suffer various health problems, particularly those related to impaired mobility, as their weight increases. In addition, restricted access to the production facility may limit workers' ability to clean buildings and remove manure and other wastes. Environmental conditions may deteriorate, and animal well-being may suffer, as a result. WSPA recommends that staff from the USDA's Animal Care program, as well as other experts in animal health and welfare, be consulted in creating contingency plans for the provision of animal care to quarantined birds.

Regulate Transport to Slaughter

The Plan (p. 28) allows for movement to slaughter of susceptible animals originating fewer than 12.4 miles from suspect or infected premises after a certain period of time has elapsed. The Plan (p. 28) also allows for the movement of susceptible animals to other locations under veterinary seal. Transport has been shown to be a very stressful occurrence in the lives of farmed animals, and accordingly, we urge USDA to require that

birds be transported only when essential and to the nearest destination possible. Unfortunately, virtually no restrictions currently exist on farm animal transport in the U.S. Beyond the immediate need to respond to the threat of an animal disease outbreak, WSPA encourages the USDA to regulate the transportation of farmed animals to protect both human health and animal welfare.

Adopt International Euthanasia Guidelines

As APHIS is well aware, the threat of avian disease in the U.S. has led to the killing of millions of birds, including commercially raised poultry, companion birds and wild birds, in the past five years alone. This includes nearly 5 million birds killed in Virginia in 2002 to control an outbreak of low pathogenic AI (LPAI), more than 3 million birds killed in the Southwest in 2002-03 to stop the spread of END and more than half a million birds killed in 2004 in response to an outbreak of LPAI in Delaware and Maryland. In addition, a flock of 6,000 birds was killed as the result of a finding of highly pathogenic AI (HPAI) in Texas in 2004.

In addressing the euthanasia of birds, the Plan (p. 40) notes that humane standards as defined in the most current *Report on Euthanasia of the American Veterinary Medical Association* (AVMA) will be utilized. The Plan (p. 40) adds, "APHIS would also consider new humane depopulation methods resulting from future research or as described in the World Organization for Animal Health manual or by resolution from AVMA, USAHA or NIAA."

In May 2005, the World Organization for Animal Health (OIE) adopted guidelines for the humane killing of animals for disease control.[9] These guidelines were adopted unanimously by the OIE's 167 member countries, including the United States. A number of significant differences exist between the OIE guidelines and the recommendations contained in the AVMA *Report on Euthanasia*.[10] WSPA considers the OIE guidelines to be more appropriate for incorporation in the USDA response plan for AI for several reasons:

- The OIE guidelines were drafted with input from a number of international experts in animal welfare.
- While the AVMA guidelines are general euthanasia recommendations, the OIE guidelines are specific to the issue of humane killing for disease control. This difference is notable, as killing for disease control purposes often involves the killing of very large numbers of animals.
- The most current version of the AVMA recommendations was drafted in 2000, and in the interim period between 2000 and 2005 considerable research was conducted on the methods used to kill domestic bird species.
- The AVMA recommendations offer very limited scientific evidence justifying the use of particular killing methods in birds.[11]

We understand that carbon dioxide gas has been the primary method used by USDA and state agricultural officials to kill birds during previous disease outbreaks in the U.S.

However, on the basis of observations of past depopulation programs, we have concluded that gassing procedures have not always been conducted humanely.[12] In addition to procedural problems, the nature of the gas itself appears to cause significant distress and pain to birds.[13] Therefore, WSPA urges USDA to investigate the feasibility of replacing the current carbon dioxide delivery system with nitrogen or argon gases, or with a two-step carbon dioxide system, which research suggests is less aversive to birds.[14]

In addition to addressing the killing of birds due to disease risk, USDA must also address the discretionary killing of commercially raised birds – particularly "end-of-lay" hens – within quarantine zones. During the END outbreak in California, San Diego animal care officers investigated the killing of some 30,000 hens by workers at an egg production facility with use of a commercial wood chipping machine. These birds were not infected with END and were not under any order to be destroyed. The owner of the egg farm, who chose to kill the hens on-site because their transport to slaughter was prohibited by quarantine, claimed that a veterinarian affiliated with USDA had approved use of the wood chipper.[15]

According to the Plan (p. 39), depopulation procedures are to be conducted "in the quickest, safest, and most humane way possible, considering a variety of methods used with success by federal, state, and industry personnel." However, it should be made clear in the Plan that expediency is not the over-riding consideration in the choice of culling method. Inflicting pain and distress on sentient beings is never acceptable, even when done to protect human health, and especially when humane methods are available. The operational guidelines of the OIE emphasize that: "When animals are killed for disease control purposes, methods used should result in immediate death or immediate loss of consciousness lasting until death; when loss of consciousness is not immediate, induction of unconsciousness should not cause anxiety, pain, distress or suffering in the animals."[16]

Expand Bird Vaccination

WSPA is pleased the USDA is in the process of augmenting the current U.S. stockpile of 40 million doses of AI vaccine with an additional 70 million doses. We also support the decision by the USDA to potentially employ vaccination in bird flocks that surround areas of quarantine in order to create a "firewall" to prevent spread of the disease. While we appreciate the logistical problems involved in widespread vaccination of birds within the commercial poultry industry, we encourage the U.S. to pursue broader application of vaccines to reduce the number of birds killed in the event of a disease outbreak.

The World Organization for Animal Health (OIE) and the United Nations' Food and Agriculture Organization (FAO) have suggested that bird vaccination may play an important role in limiting the spread of AI and in lowering the number of birds that must be killed.[17] Research has demonstrated that vaccination protects birds against clinical symptoms and mortality from both low pathogenic and high pathogenic AI, reduces virus shedding and increases bird resistance to infection.[18] Recently published research conducted in the Netherlands showed that vaccination with H7N1 and H7N3 vaccines blocked transmission of the H7N7 strain of AI among the birds tested.[19]

In approving a LPAI vaccination program for Italy in December 2005, the European Union (EU) noted the success of a previous vaccination program in Northern Italy that used the "differentiating infected from vaccinated animals" (DIVA) strategy.[20] In the past six months, the EU has also acted to allow preventive vaccination of 900,000 ducks and geese in regions of France[21] and of chickens and other birds in the Netherlands.[22] The Dutch program permits voluntary vaccination of the country's 1-3 million "hobby poultry" and 5 million free-range laying hens as an alternative to bringing birds indoors.

Vaccination may prove to be especially useful for protecting the health of commercially raised birds with a longer lifespan, such as breeding birds and egg-laying hens. We encourage USDA to consider the feasibility of a prevention program that would vaccinate free-ranging birds raised for meat and egg production, as well as longer-lived birds raised in confinement settings, including breeding chickens and turkeys and egg-laying hens.

Use Influence to Curtail Factory Farming

Worldwide, billions of birds on industrial farms live in overcrowded and poorly ventilated environments – prime conditions for disease. There has been a significant increase in the number of poultry being raised throughout the world, including in regions where outbreaks of AI have occurred. It has been speculated that these outbreaks may be linked to intensification and increased poultry density.[23] According to the FAO, intensification can facilitate the conversion of low pathogenic viruses to high pathogenic ones by providing large numbers of highly concentrated, susceptible birds.[24] FAO also notes that, "Intensification has increased the scale and impact of outbreaks that occur."[25]

Through its World Farmwatch campaign, WSPA is calling for effective national legislation to stop the expansion of factory farming and encourage humane and sustainable forms of animal agriculture. Through its influence over U.S. agriculture, the USDA can play an important role in achieving this goal.

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Notes

[1] See notice of public meeting published by CDC in Federal Register, April 20, 2006;71(76):20402-20403.
[2] Illegal animal trade a bird-flu concern, Associated Press, May 5, 2006. See also Update on the Avian Influenza situation, FAO Avian Influenza Disease Emergency (AIDE) News, Issue No 29, April 12, 2005, p. 19.
[3] To curtail the spread of AI, the European Union temporarily banned imports of captive live birds, but not poultry, from all other countries (with limited exceptions) in October 2005. See "Avian influenza: EU bans imports of captive live birds from third countries," European Commission, press release IP/05/1351, Oct 25, 2005.
[4] Chen H, et al., Establishment of multiple sublineages of H5N1 influenza virus in Asia: implications for pandemic control, Proceedings of the National Academy of Sciences, 2006;103:2845-2850.
[5] FAO recognizes live animal markets as "important reservoirs" of AI. See Update on the Avian Influenza situation, p. 20.

[6] FAO/OIE/WHO Consultation on Avian Influenza and Human Health: Risk Reduction Measures in Producing, Marketing, and Living with Animals in Asia, held in Kuala Lumpur, Malaysia, July 4-6, 2005, p 2. The Consultation noted the following high- risk practices commonly employed at live animal markets (referred to as "wet" markets) in Asia: "the limited application of good hygiene, cleaning and disinfection; the keeping of multiple species together and in confined spaces; the stacking of cages on top of one another; poor ventilation; the lack of pre-marketing health checks; a lack of training and education of stall owners; and a lack of personal protective equipment for stall owners." It has been our experience that many, if not all, of these high-risk practices also occur at live bird markets in the U.S.

[7] FAO/OIE/WHO Consultation, p 2.

[8] Avian Influenza Statement, New Jersey Department of Agriculture (press release), May 4, 2006.

[9] Guidelines for the Killing of Animals for Disease Control Purposes, World Organization for Animal Health (OIE), Terrestrial Animal Health Standards Commission, Jan 2005.

[10] For example, carbon monoxide gas is not included in the OIE guidelines but considered "acceptable" under AVMA recommendations. Both cervical dislocation and decapitation are identified as "conditionally acceptable" under the AVMA recommendations, but OIE guidelines allow use only in unconscious birds. Also, AVMA recommendations identify use of carbon dioxide as "acceptable" and use of nitrogen and argon gases as "conditionally acceptable", while OIE guidelines include use of all three gases but note that continued study of carbon dioxide is necessary to address finding that CO2 is aversive to birds. See Report of the OIE Terrestrial Animal Health Standards Commission, Fourth Meeting of the Working Group on Animal Welfare, held in Teramo, Italy, Sept 7-9, 2005, p. 350.

[11] 2000 Report of the AVMA Panel on Euthanasia, JAVMA, 2001;218:669-696. For example, the AVMA cites only one study, published in 1990, in discussion of its conditional recommendation of the use of cervical dislocation to kill conscious birds. In fact, this study found that less than 10% of birds whose necks were dislocated showed signs of brain concussion. The researchers concluded, "Neck dislocation may not concuss chickens, and that it is therefore uncertain whether it induces instantaneous unconsciousness." See Gregory NG & Wotton SB, Comparison of neck dislocation and percussion of the head on visual evoked responses in the chicken's brain, Veterinary Record, 1990;126:570-572. In addition, AVMA guidelines identify decapitation as a "conditionally acceptable" method of euthanasia for birds. However, research has shown that a normal brain waveform may persist for some time after decapitation. See Gregory & Wotton, Effect of slaughter on the spontaneous and evoked activity of the brain, British Poultry Science, 1986;27:195-205.

[12] Reports described gas being pumped directly onto birds, causing painful burning, as well as gassing compartments not being adequately sealed and gas flow rate inadequately controlled, resulting in a prolonged time to loss of consciousness.

[13] Several studies have documented the aversive nature of carbon dioxide gas when used in killing birds. For example, see Gerritzen et al., Behavioral responses of broilers to different gaseous atmospheres, Poultry Science, 2000;79:928-933; Raj & Tserveni-Gousi, Stunning methods for poultry, World's Poultry Science Journal, 2000;56:291-304; Raj, Aversive reactions of turkeys to argon, carbon dioxide and a mixture of carbon dioxide and argon, Veterinary Record, 1996;138:592-593; Raj & Gregory, An evaluation of humane gas stunning methods for turkeys, Veterinary Record, 1994;135:222-223; Raj & Gregory, Time to loss of somatosensory evoked potentials and onset of changes in the spontaneous electroencephalogram of turkeys during gas stunning, Veterinary Record, 1993;133:318-320.

[14] See research cited in note 13. See also Poole et al, Evaluation of a two-stage carbon dioxide modified atmosphere stunning-killing (mask) system for broilers, Poultry Science, 1997;76:119.

[15] No cruelty charges in chicken killings, San Diego Union-Tribune, April 11, 2003. See also DA to continue inquiry of two poultry ranches; sites used chippers to kill old chickens, San Diego Union-Tribune, April 18, 2003.

[16] Avian influenza: controlling the disease at its animal source does not authorize inappropriate animal depopulation methods on farm (press release), World Organization for Animal Health (OIE), Oct 28, 2005.

[17] FAO/OIE/WHO Consultation, p 4. See also FAO Recommendation on the Prevention, Control and Eradication of Highly Pathogenic Avian Influenza (HPAI) in Asia, United Nation's Food and Agricultural Organization (FAO), Sept 2004, p. 7.

[18] Capua & Marangon, Vaccination for avian influenza in Asia, Vaccine, 2004;22:4137-4138; Capua et al., Increased resistance of vaccinated turkeys to experimental infection with an H7N3 low pathogenicity avian

influenza virus, Avian Pathology, 2004;33:158-163. See also Suarez DL, et al., Avian influenza virus: prospects for prevention and control by vaccination, Animal Health Research Reviews, 2005;6:1-15.

[19] Van der Goot JA, et al., Quantification of the effect of vaccination on transmission of avian influenza (H7N7) in chickens, Proceedings of the National Academy of Sciences, 2005;102:18141-18146.

[20] Commission Decision 2005/926/EC on introducing supplementary measures to control infections with low pathogenic avian influenza in Italy and repealing Decision 2004/666/EC, Dec 21, 2005. Approximately 60 million Italian birds were vaccinated against AI between 2000 and 2003.

[21] Commission Decision 2006/148/EC on introducing preventive vaccination against highly pathogenic avian influenza H5N1 and related provisions for movements in France, Feb 24, 2006.

[22] Commission Decision 2006/147/EC on introducing preventive vaccination against highly pathogenic avian influenza H5N1 and related provisions for movements in the Netherlands, Feb 24, 2006.

[23] Update on the Avian Influenza situation, p. 7.

[24] Update on the Avian Influenza situation, p. 8.

[25] Update on the Avian Influenza situation, p. 10. Mention is made of an outbreak of H7N7 in the Netherlands, where 30 million birds were killed; most were destroyed as a control measure even though they weren't infected with the virus.