



Iowa Department of Agriculture and Land Stewardship: 2015 HPAI Response

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Iowa Agriculture

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Welcome to the Iowa Department of Agriculture and Land Stewardship.

Our Department has many functions that touch the lives of Iowans every day, so I hope you will take the time to look around the site and find out more about all we do.

Latest News

NORTHEY: GRANTS AVAILABLE TO HELP PROMOTE SPECIALTY CROPS ([Read More](#))

Veto of WOTUS disapproval resolution ([Read More](#))

CRUDE DROPS BELOW \$30 ([Read More](#))

Branstad, Reynolds, Northey announce first round of funding awards for Fueling Our Future Initiative ([Read More](#))

BOOTS ON THE GROUND = CONSERVATION ON THE GROUND IS THE FOCUS FOR IOWA CONSERVATION PARTNERSHIP DAY AT THE CAPITOL ON JANUARY 19 ([Read More](#))

CRUDE CONTINUES DOWNWARD TREND ([Read More](#))

Hot Topics

NORTHEY: RECORD NUMBER OF BEEKEEPING SCHOOLS SCHEDULED FOR 2016 ([Read More](#))

[Renewable Fuels Marketing Award Nomination Form](#)

[APPLICATIONS BEING ACCEPTED FOR FUELING OUR FUTURE 100 INITIATIVE](#)

[Soil Conservation Cost Share Annual Report](#)

[URBAN WATER QUALITY DEMONSTRATION PROJECTS PRE-APPLICATION](#)

[Water Quality Initiative- Demonstration Projects RFP](#)

[Avian Influenza Information](#)

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Iowa Agricultural Statistics



Iowa's 2012 production value from crops and livestock totals > \$30 billion



Iowa is 2nd to CA in agriculture



Iowa imported ~29.4 million animals in 2015



Iowa leads the nation in corn and soybean production



Iowa ranks 1st in Swine



1st in Egg Production



~ 60 million layers – **pre-2015 HPAI**



~ 16.5 billion eggs



2nd in Red meat

Agricultural Statistics — Imports 2015

- **~27.5 million feeder swine**
 - **~262,000 breeding swine**
 - **~1.21 million feeder cattle**
 - **~243,000 breeding cattle (dairy and beef)**
 - **~31,500 sheep**
 - **~8,600 horses**
 - **~2,900 goats**
 - **324 cervids**
 - List does not include chickens, turkeys, dogs, cats, other species and semen.
- ~80,500 animals per day moved into Iowa**



Emergency Preparedness and Response

Accredited Veterinarians . . .

Are first line of surveillance for
program and foreign animal diseases

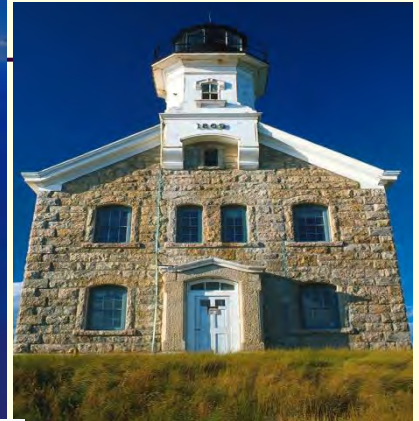
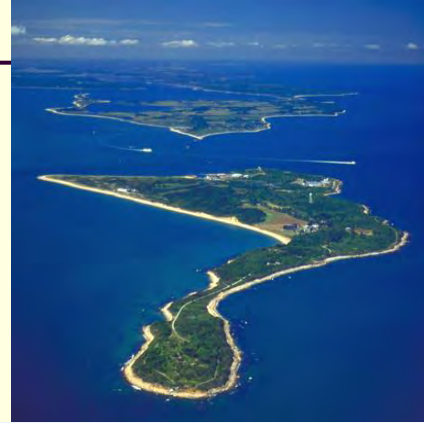




Ames, Iowa

Plum Island Animal Disease Center

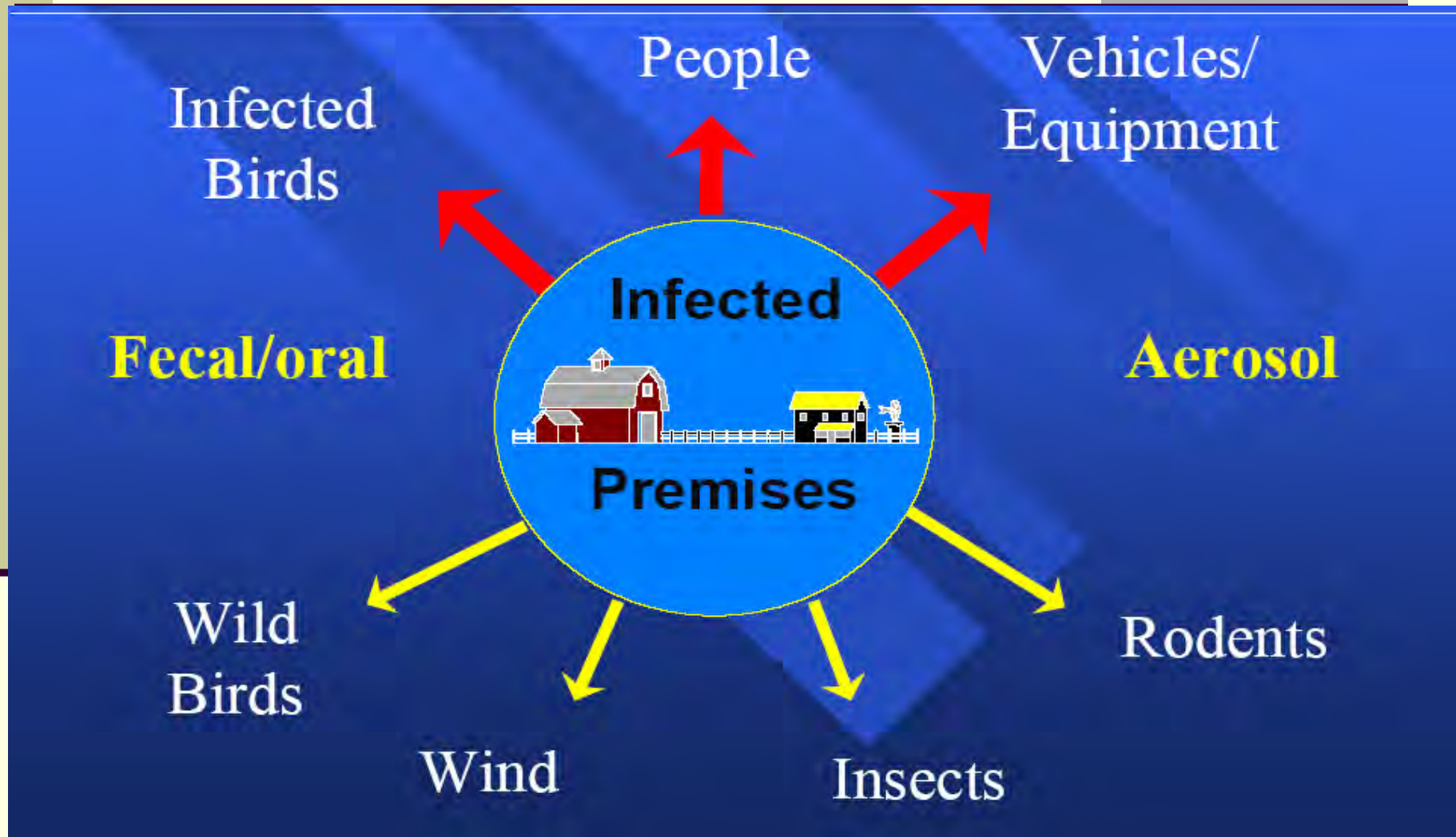
- Plum Island is 840 acres, located 1.5 miles off the northeastern tip of Long Island, NY, 9 miles southwest of Old Saybrook, CT
- Congress transferred responsibility for the operations of PIADC to DHS in the Homeland Security Act of 2002 – effective June 2003



Reportable Animal Diseases

- Iowa Administrative Code of Rules Chapter 21 – 64(163) - Infectious and Contagious Diseases
- **<http://www.agriculture.state.ia.us/regulation.asp>**
- Reportable diseases listed - Diseases Notifiable to the OIE

Methods Disease Spread



Who Reports Suspect Cases

- Veterinarians- Private practice
- Producers
- Livestock market personnel
- Slaughter plant inspectors
- Diagnostic Laboratories
- County Extension Agents
- Anyone

Infected Premises- Outcomes

- Quarantine to slaughter – **Not for HPAI 2015**
- Vaccinate to slaughter – **Not for HPAI 2015**
- Depopulate
- Carcass disposal
- Indemnification – **USDA indemnified 2015**




Awareness

- Foreign Animal Disease
 - High consequence to Iowa's economy
- When disease occurs
 - Respond decisively
 - Resources must be available
 - Responders must be trained



IDALS Legal Authority

- Control and eradicate highly contagious animal disease
- Quarantine diseased animals
- Regulate or prohibit animal movement
- Enter premises
- Euthanize animals if necessary
- Disinfect farm operations



Highly Pathogenic Avian Influenza H5N2 – 2015

The Organism

- Avian influenza virus
 - Genus *Influenzavirus A*
 - Family Orthomyxoviridae
- Classified into subtypes based on surface antigens
 - Hemagglutinin
 - 16 types
 - Neuraminidase
 - 9 types



The Organism - Survivability

- Survivability

- 7 days at 68° F. (20° C.)
- 3.5 seconds at 158° F. (70° C.)
when cooking meat kills AI
virus



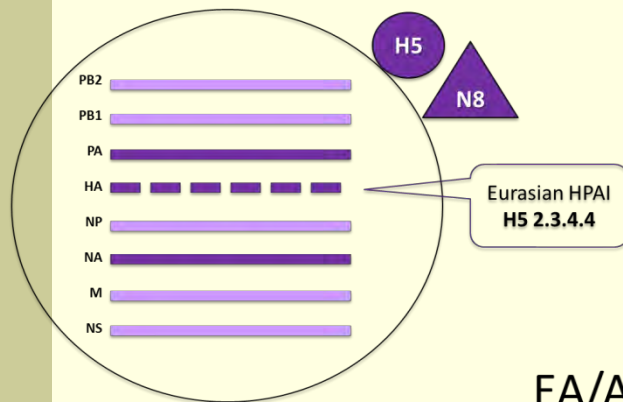
- 188 seconds at 140° F. (60° C.) kills AI virus
- After cleaning infected premises, some heated buildings to 100° F. (38.8° C.) for disinfecting

EA-H5* reassortants in North America

*All H5 2.3.4.4 viruses to date are considered **highly pathogenic** in poultry

Eurasian H5N8 clade 2.3.4.4

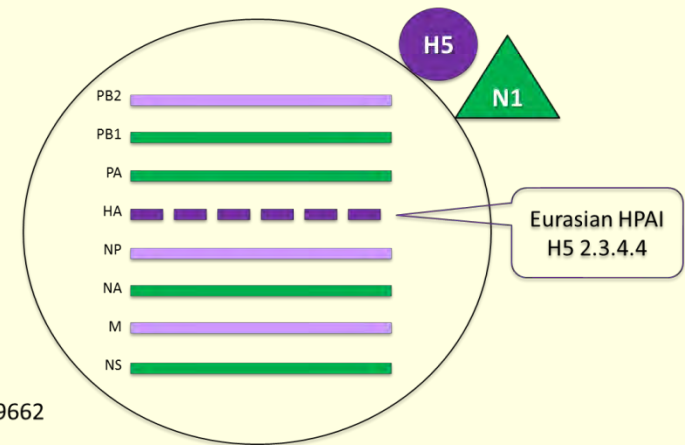
aka “Intercontinental” EA-H5N8



EA/AM H5N1-reassortant

EA-H5N8 (4 genes) / AM (4 genes)

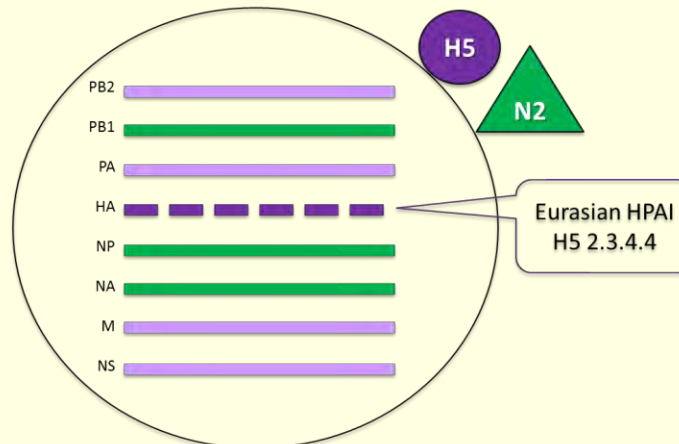
A/American green winged teal/195750/Washington/2014(H5N1)



EA/AM H5N2-reassortant

EA-H5N8 (5 genes) / AM (3 genes)

A/Northern pintail/Washington/40964/2014 (H5N2) Genbank 1589662



Diagnosis

- Clinically indistinguishable from virulent Newcastle Disease (END)
- Virus isolation
 - Oropharyngeal, tracheal, and/or cloacal swabs
 - Feces
 - Organ samples
- Virology and serology necessary for definitive diagnosis
 - AGID, ELISA, **RT-PCR**, VI



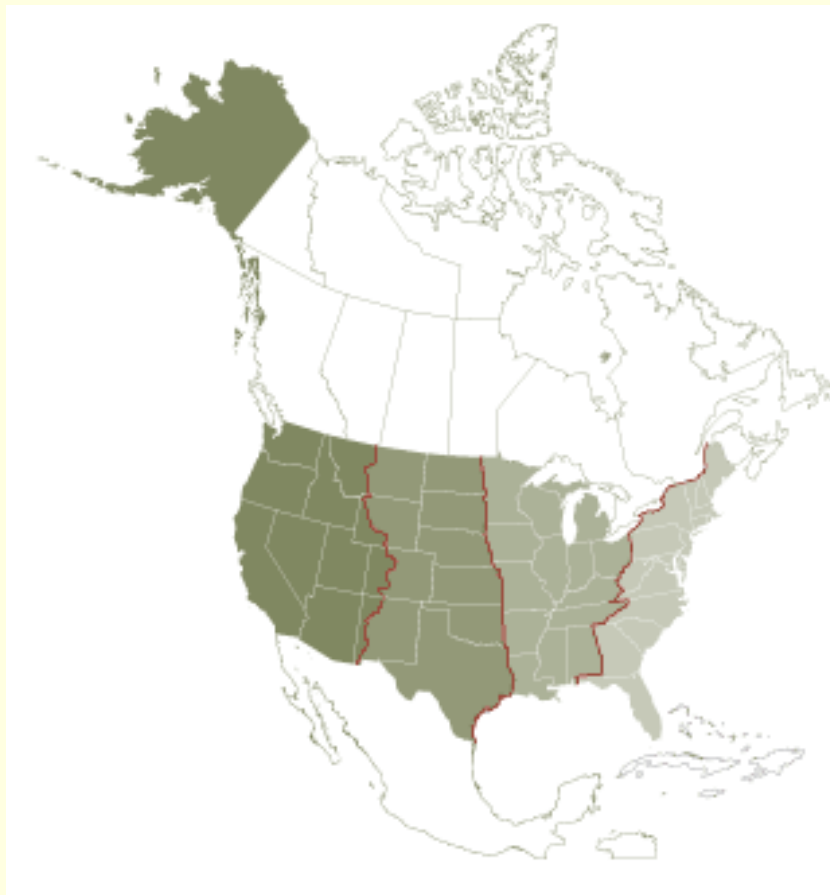
Reservoirs

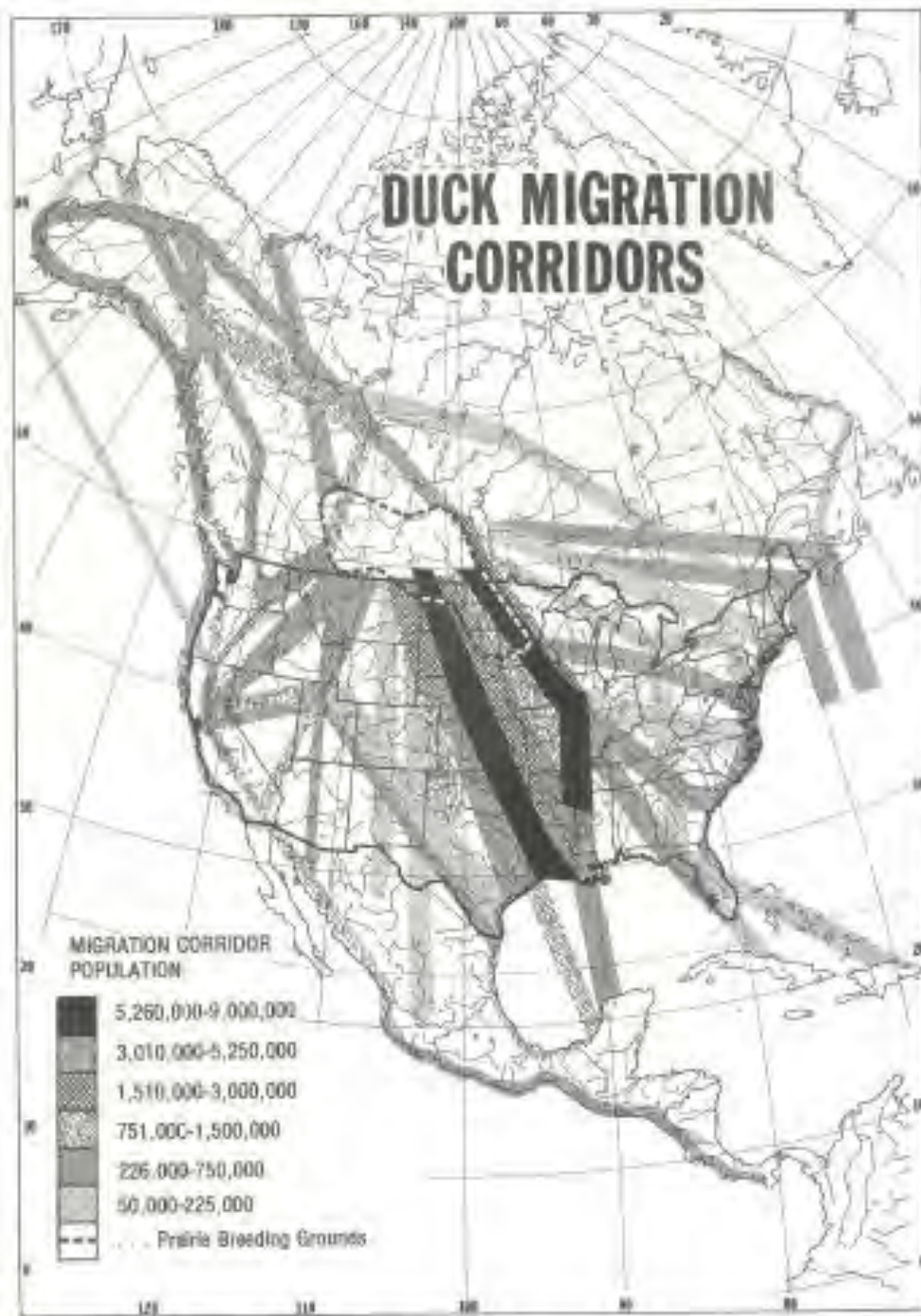
- Waterfowl and shorebirds
 - Natural reservoirs for influenza A
 - Carry all known H and N antigens
 - Usually in the LPAI form
 - Predominant subtypes change periodically

Transmission in Wild Birds

- Influenza virus shed in feces, saliva, nasal secretions
- Fecal-oral
 - Predominant mode of transmission
- Other possible modes
 - Fecal-cloacal
 - Respiratory - aerosol

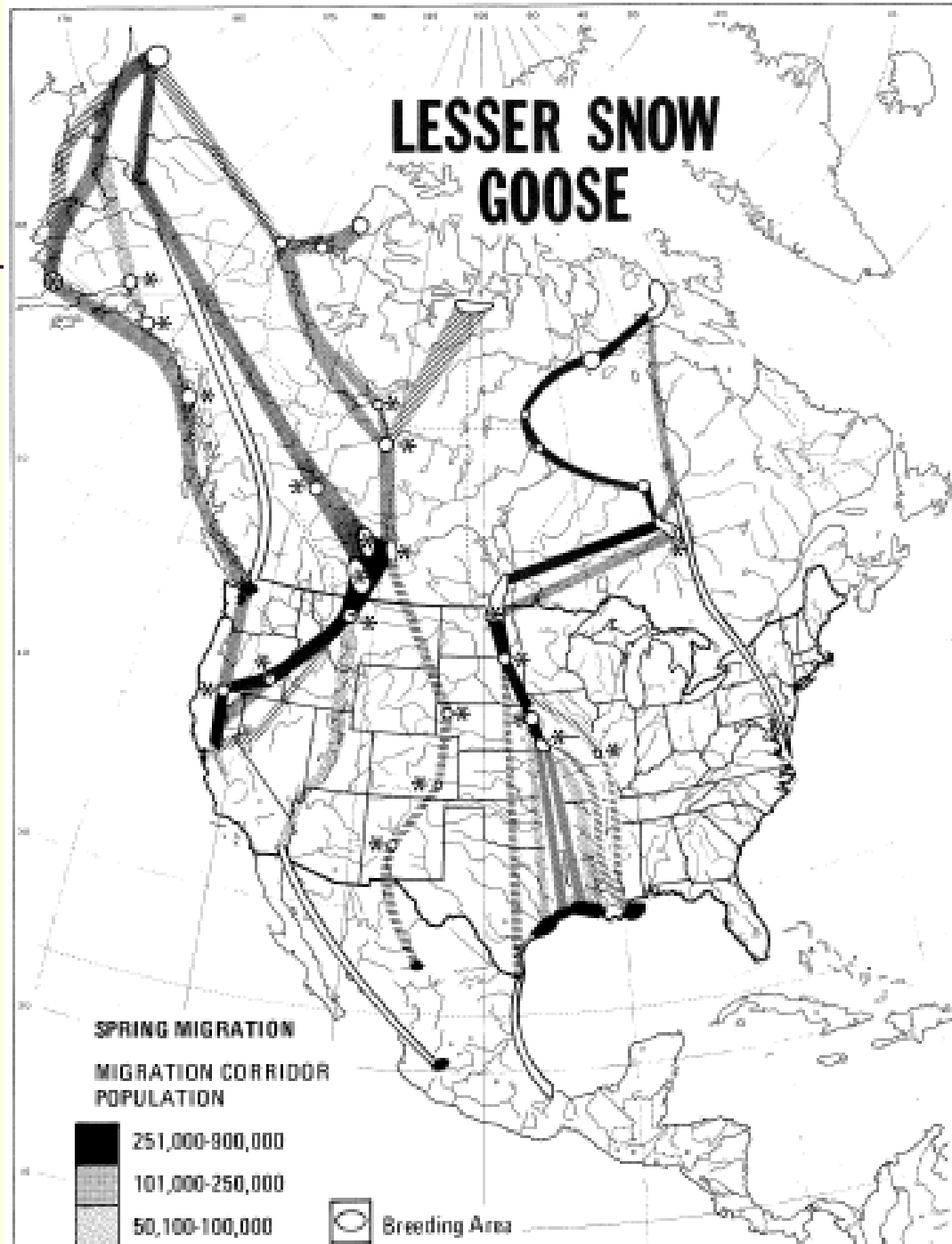
Flyway.us



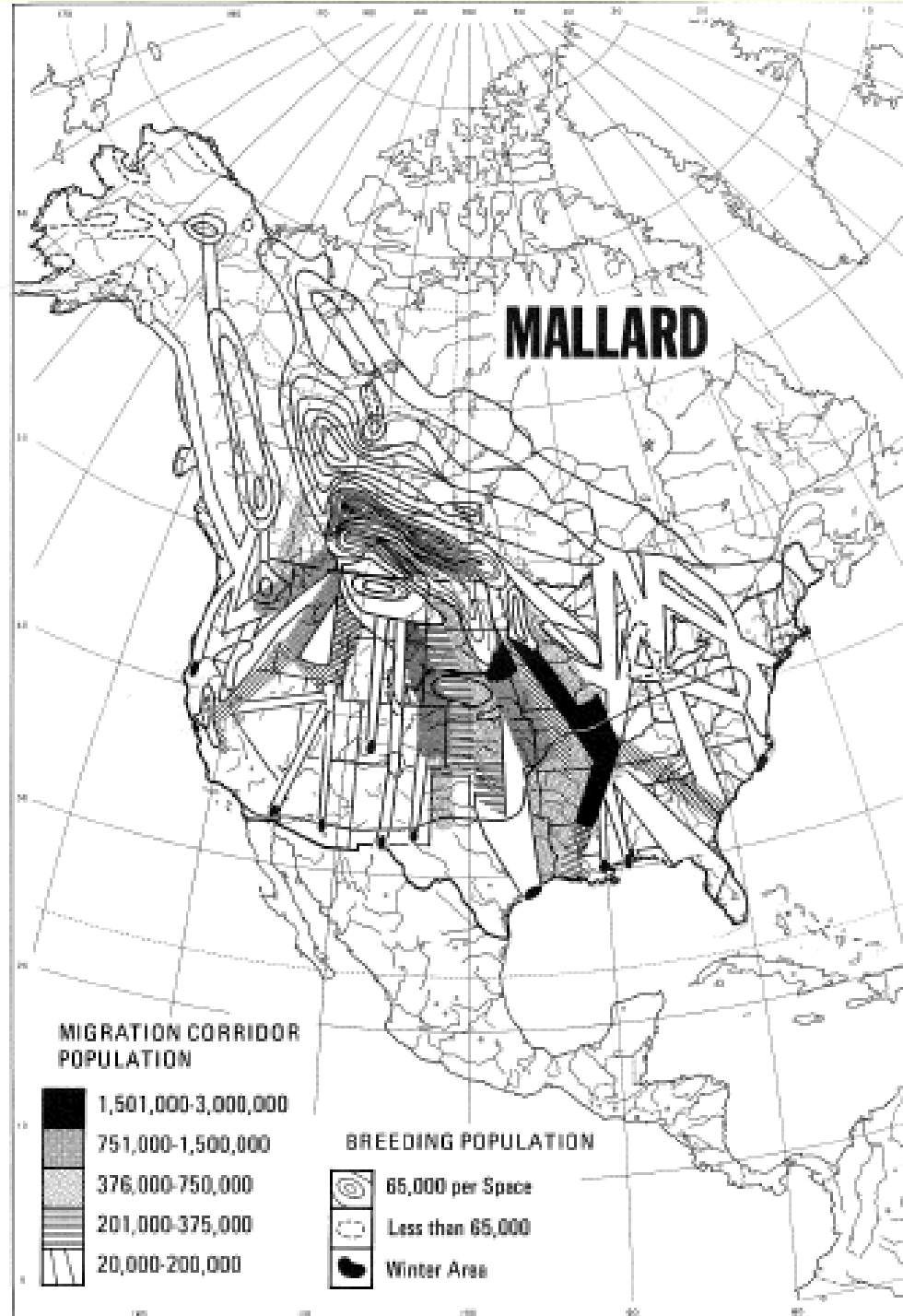


Ducks, Geese and Swans of North America by Frank C. Bellrose - 1980

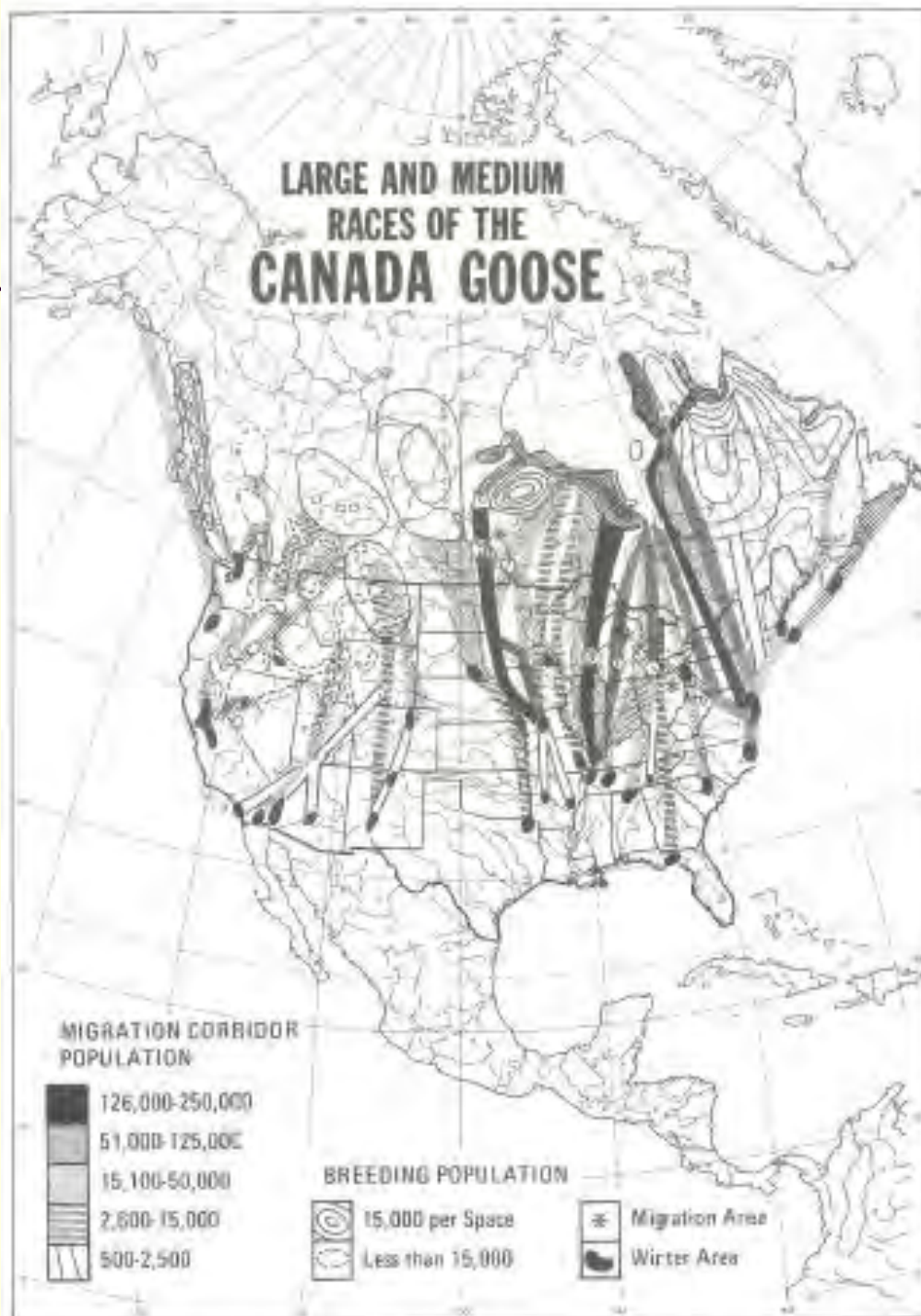
LESSER SNOW GOOSE

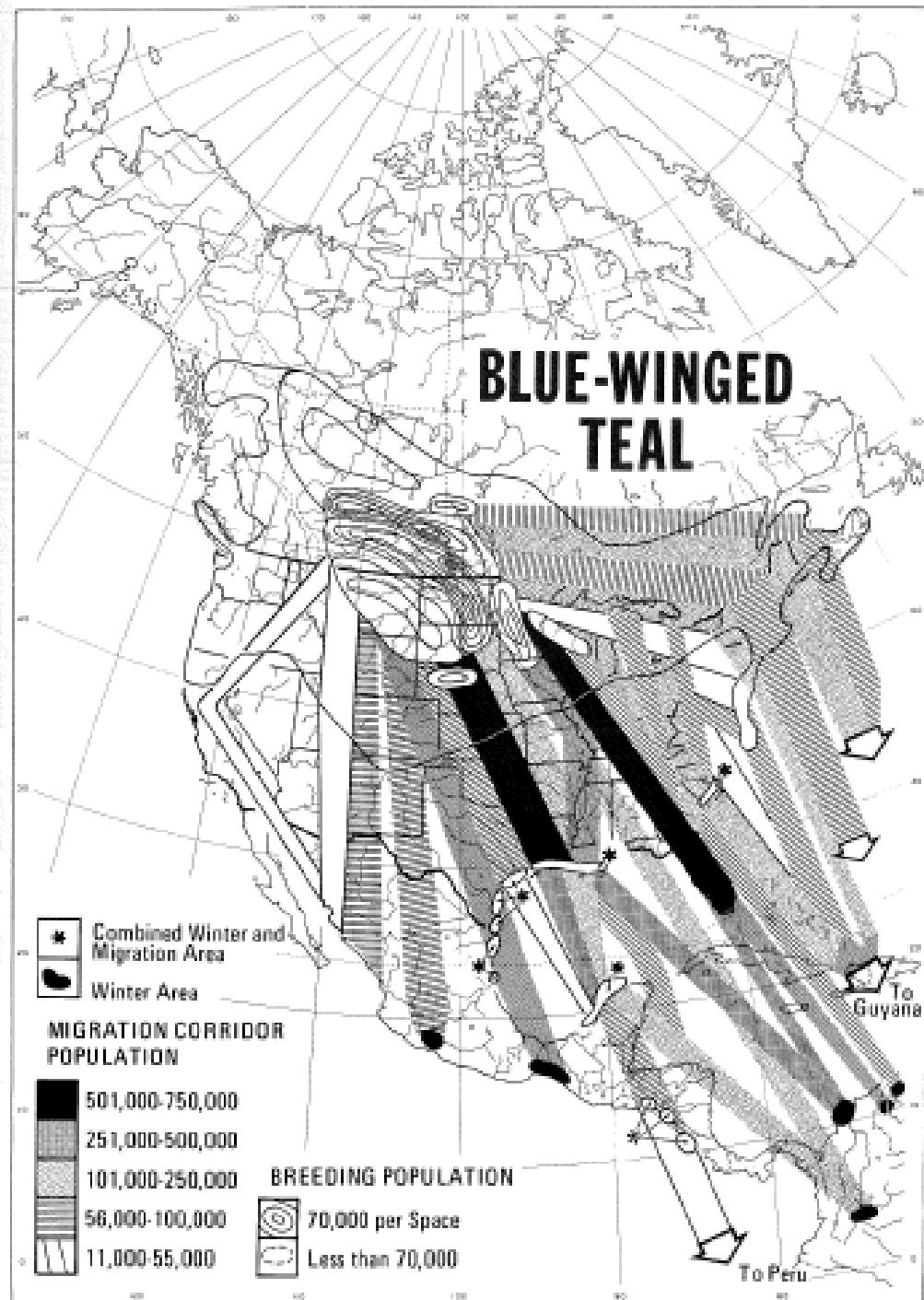


MALLARD



LARGE AND MEDIUM RACES OF THE CANADA GOOSE



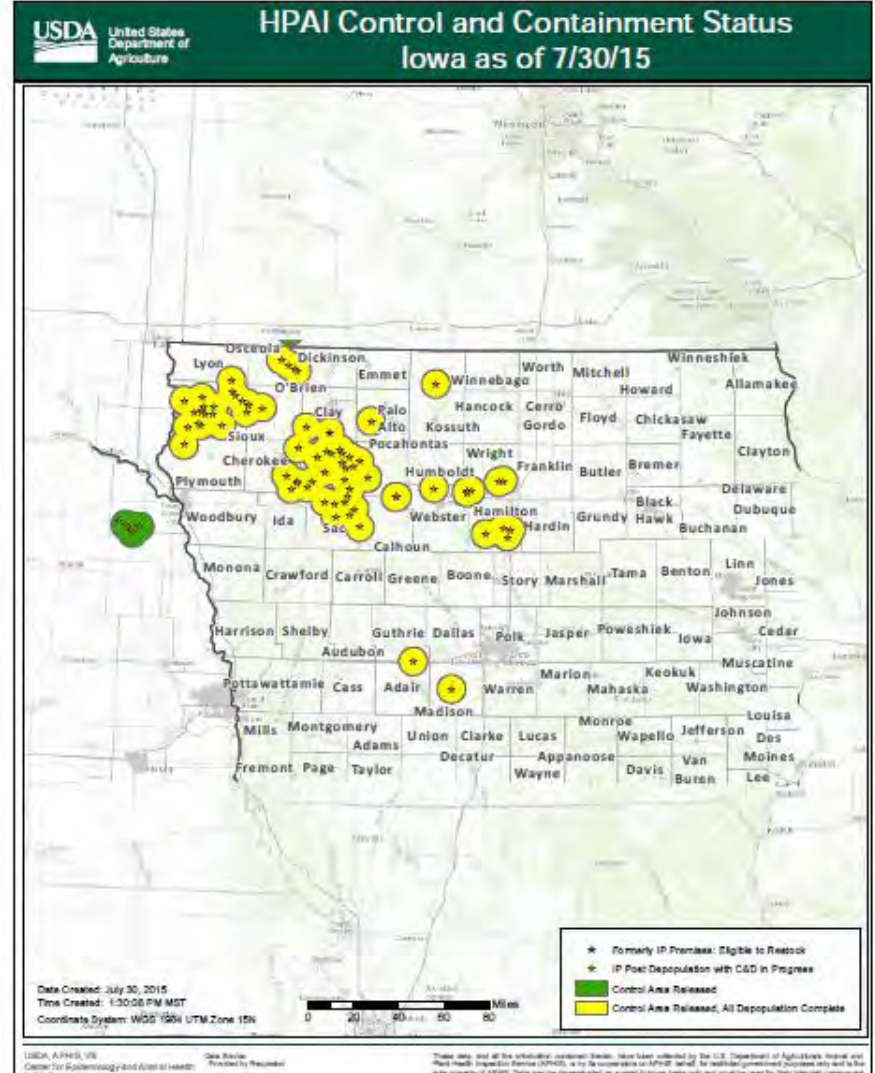


Highly Pathogenic Avian Influenza

– Iowa 2015

- First reported illness in a commercial turkey flock on Sunday, April 12, 2015
 - HPAI lab positive avian influenza Monday, April 13, 2015
- No human cases of influenza associated with H5N2
- All poultry in control zones tested negative for AI before being permitted to go to processing
- Last HPAI H5N2 case in Iowa on June 16, 2015

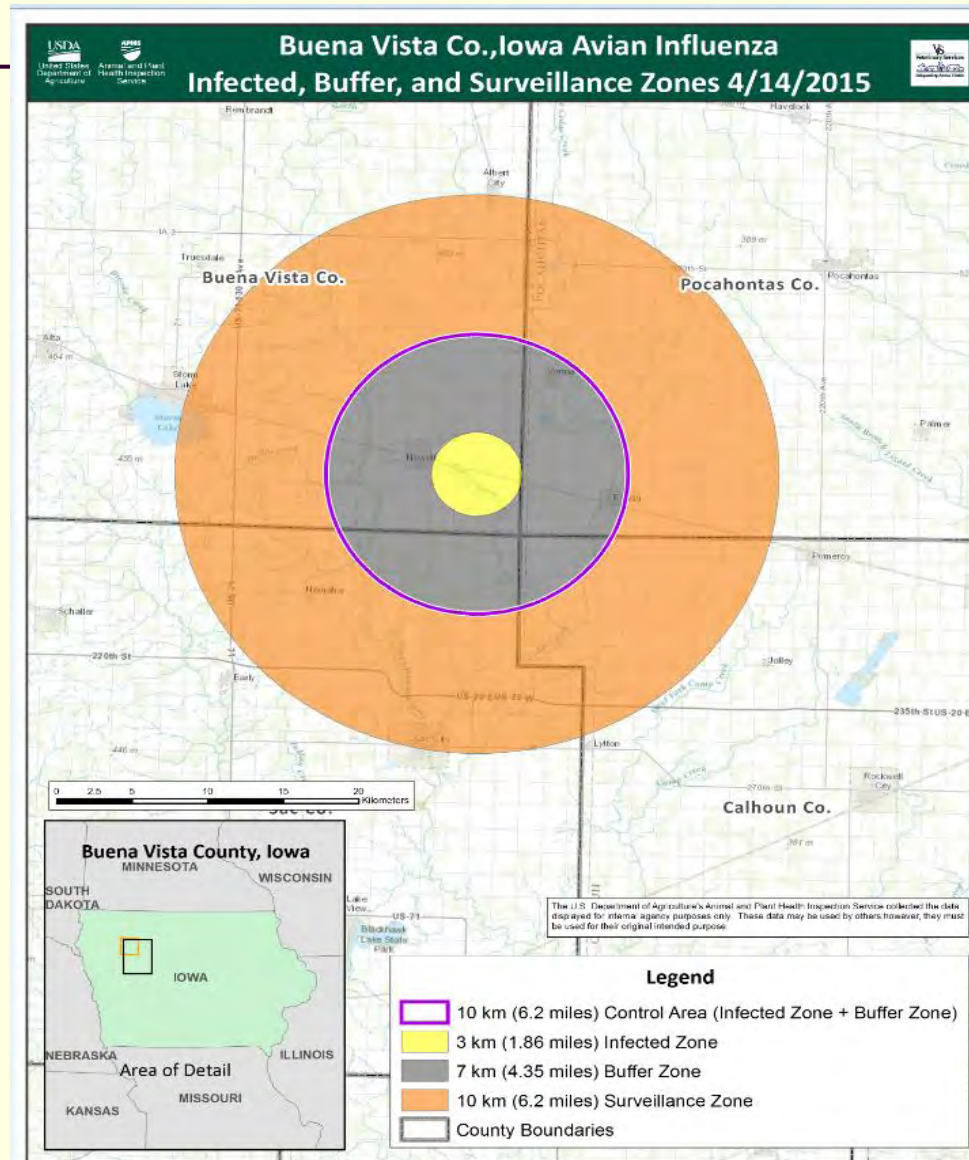
HPAI Midwest - 2015



Buena Vista County Turkey Farm



Control or Buffer Zones



Osceola 1 – April 19, 2015

First Infected
Layer Site

© 2015 Google

Google earth

1997

Imagery Date: 9/22/2012 43°21'00.22" N 95°26'27.25" W elev 1509 ft eye alt 8101 ft

[illegible]

Kossuth 1 – April 28, 2015



Buena Vista 5 – April 29, 2015



Infected
Large Layer
Site

Sioux County 20 – June 4, 2015



Secure Premises Entrances – C&D Line



Personal Protection On Premises



All responders fit tested for N95 masks, required to don outer protection upon entering premises and doffing at C&D line to exit. Designated staff for infected premises.

Area Surveillance

- Operations conducted under ICS structure
- Work with County Emergency Manager
- Establish a center of operations
- Surveillance of 10 km radius of infected premises for poultry
- Collection of samples from poultry for AI testing
- Quarantine of all poultry premises in buffer zone
- Samples submitted to ISU VDL for testing

Euthanasia (poultry)

- CO2 Gas
- Cervical Dislocation
- Nitrogen / Argon Gas
- IV Barbituate Administration – not utilized
- Fire Arms for free ranging birds
- Foam – floor reared birds
- Ventilation Shutdown (VSD)
 - conditional approval



Prevention in Birds

- Depopulation of infected flocks
- Proper carcass disposal
 - Burying
 - Composting
 - Rendering
- Strict biosecurity measures
- Quarantine
- Cleaning and disinfection



IOWA SEOC

State Emergency Operations Center



September 3, 2010

Activated May 1, 2015



Closed June 30, 2015



SEOC Representation

- IDALS
- IDPH
- HSEMD
- NG
- DOT
- DPS
- DNR
- DIA
- DHS
- DOC
- Iowa Turkey Federation
- Iowa Poultry Association
- Rural Concern Hotline



Disposal

Carcass Disposal Options

- Composting
- Rendering
- Burial
- Incineration



Composting

- A recommended method of disposal for turkey farms
- Carcasses placed in with layers of a carbon source and a nitrogen source to allow the natural heating process to break them down



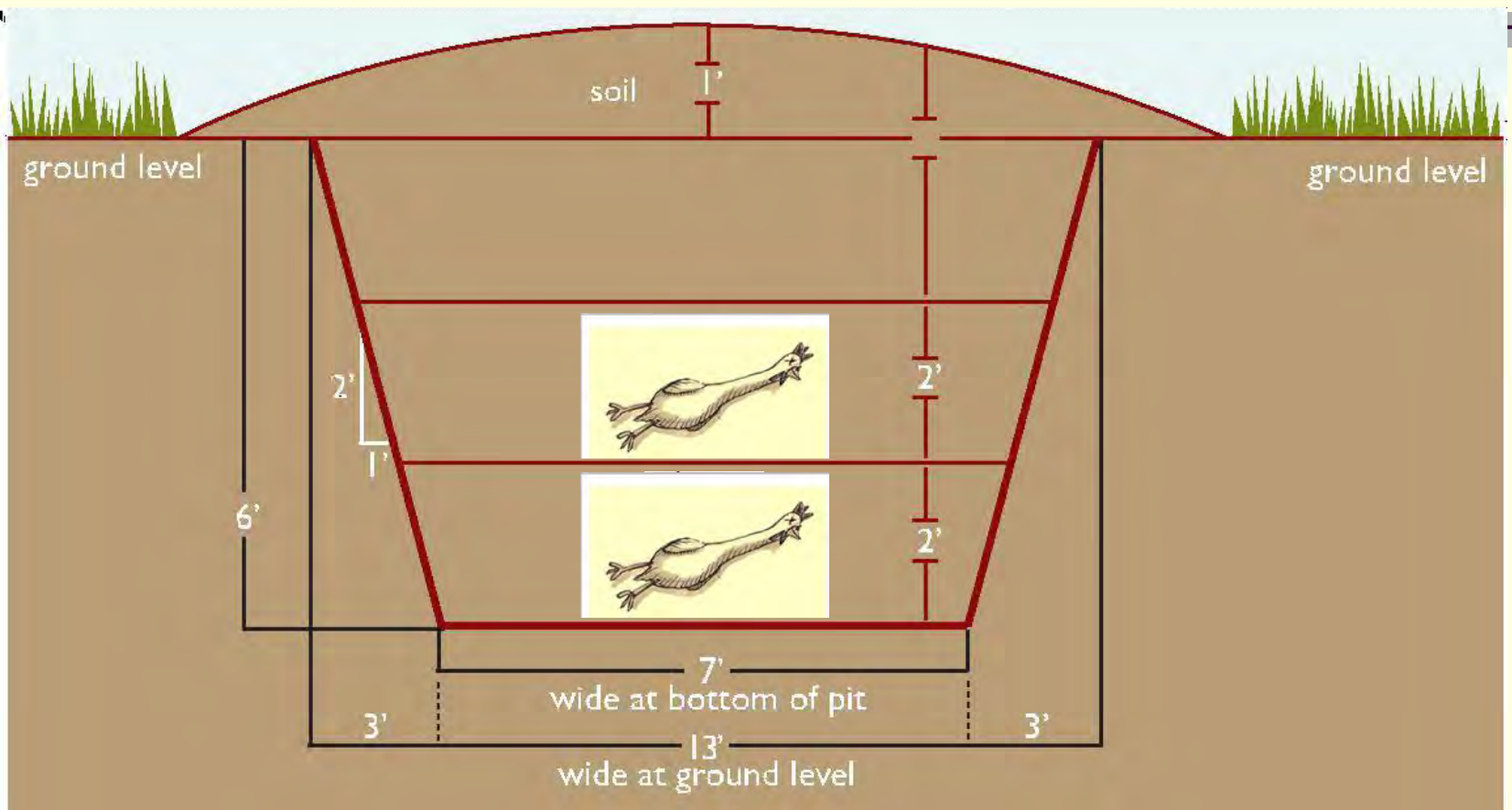
In House Composting



Temperature probe monitoring of compost. Compost reach temperature of at least 131° F. (55° C.) for at least 3 days, turn pile at 14 days, let reheat, and completed at 30 days.

Burial

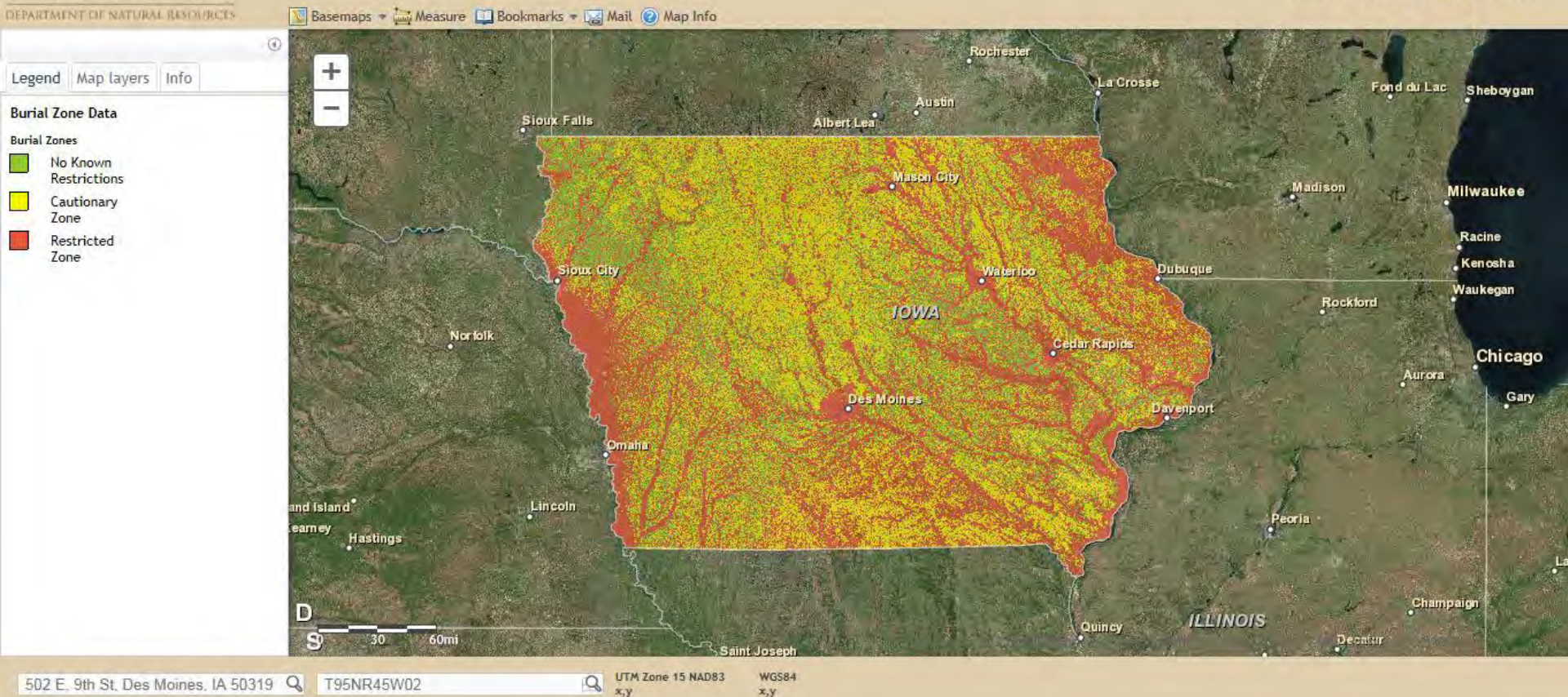
- Site selection is very important, because of potential ground water pollution
- Disadvantages
 - Winter
 - Potential ground water pollution
 - Must stay away from waterways
 - Karst or sandy areas
 - Areas prone to flooding
 - Iowa One Call: 1-800-292-8989 (48 hrs. notification, excluding weekends and holidays)



Iowa DNR Burial Mapping

DNR IOWA
DEPARTMENT OF NATURAL RESOURCES

Livestock Burial



<http://programs.iowadnr.gov/maps/afo/burial.html>

Legend Map layers Info

Well Data

Private Well Facility



Wells - Public



Burial Zone Data

Confinements, AUs

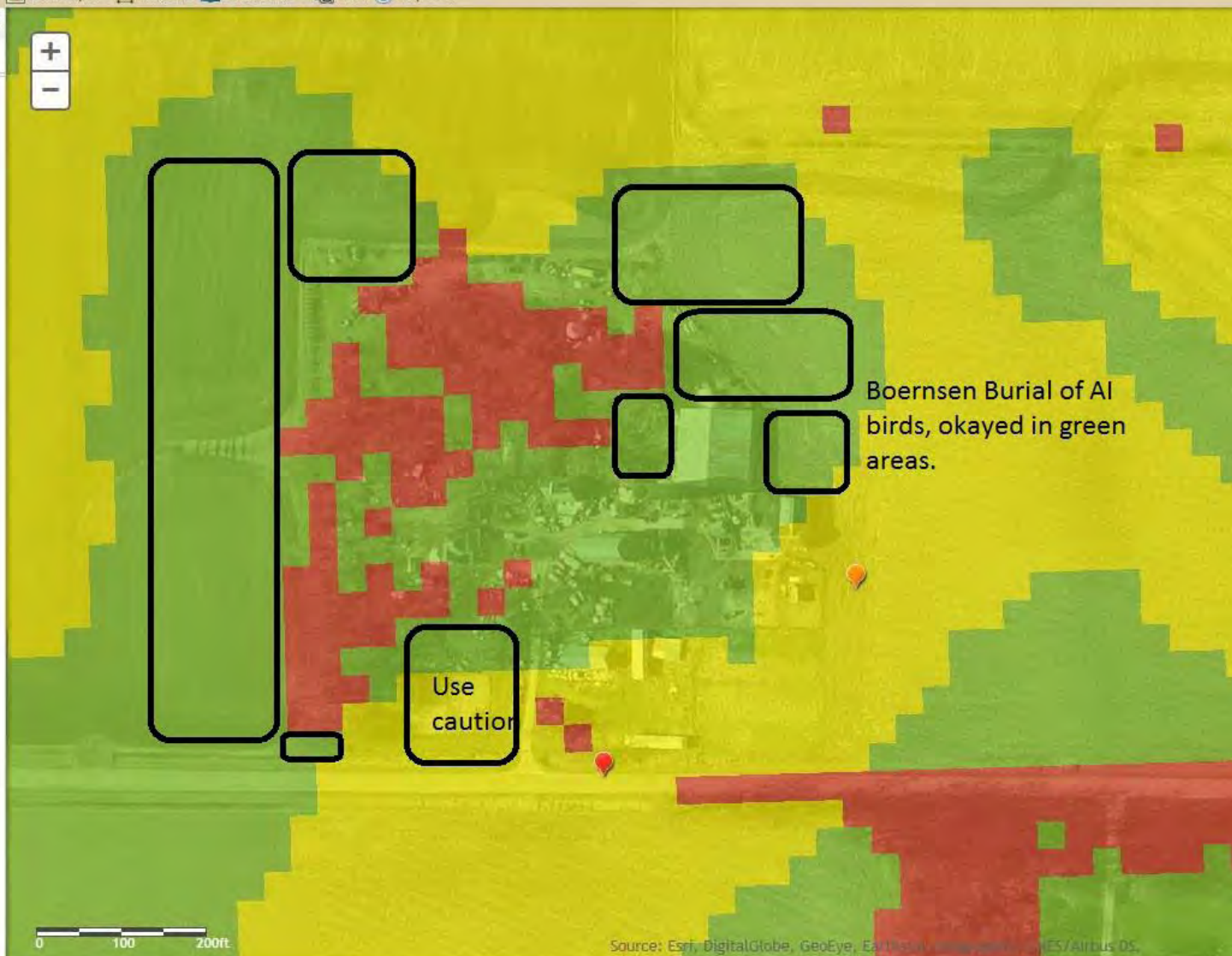
- <500
- 500 - 1,000
- >1,000

Feedlots, AUs

- <300
- 300 - 1,000
- >1,000

Burial Zones

- No Known Restrictions
- Cautionary Zone
- Restricted Zone



6724 200th St. Ocheyedan Iowa

UTM Zone 15 NAD83 WGS84
300238.61, 4803532.90 -95.465128, 43.358092

100%



Inbox - Cindy....



FW: got to laug...



Iowa DNR - Liv...

<http://www.io...>

Microsoft Excel...



Microsoft Excel...

3:29 PM
5/15/2015



05/22/2015 09:37



05/22/2015 09:39

Improper Burial



Emerging mortalities



Staged leak proof roll offs for mortalities in sealed biobags to be transported to approved landfill by permit and IDOT designated route.

Burial - Landfill



Burial - Landfill



Incineration

- Advantages
 - Year round use
 - Bio-security
 - Kills pathogens
- Disadvantages
 - Cost of Incinerator
 - Cost of fuel
 - Odor



State Order – May 21, 2015

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

Regarding the display, sale or)
exhibition of poultry in the State of Iowa) Order No. AI- 15-0456
)

The Governor of the State of Iowa declared a state of emergency concerning highly pathogenic avian influenza which authorized various stop movement and control zone measures as necessary. More than 60 infected premises have been identified in northwest Iowa during the last six weeks. Producers and owners are being asked to take every biosecurity measure available. Additional actions are necessary to minimize the risk of spreading of the virus.

THEREFORE, IT IS HEREBY ORDERED, under the authority of Iowa Code section 163.1 which provides the authority of the Department to limit animal movement for disease control and Iowa Code Chapter 165B, "Control of Pathogenic Viruses in Poultry," that:

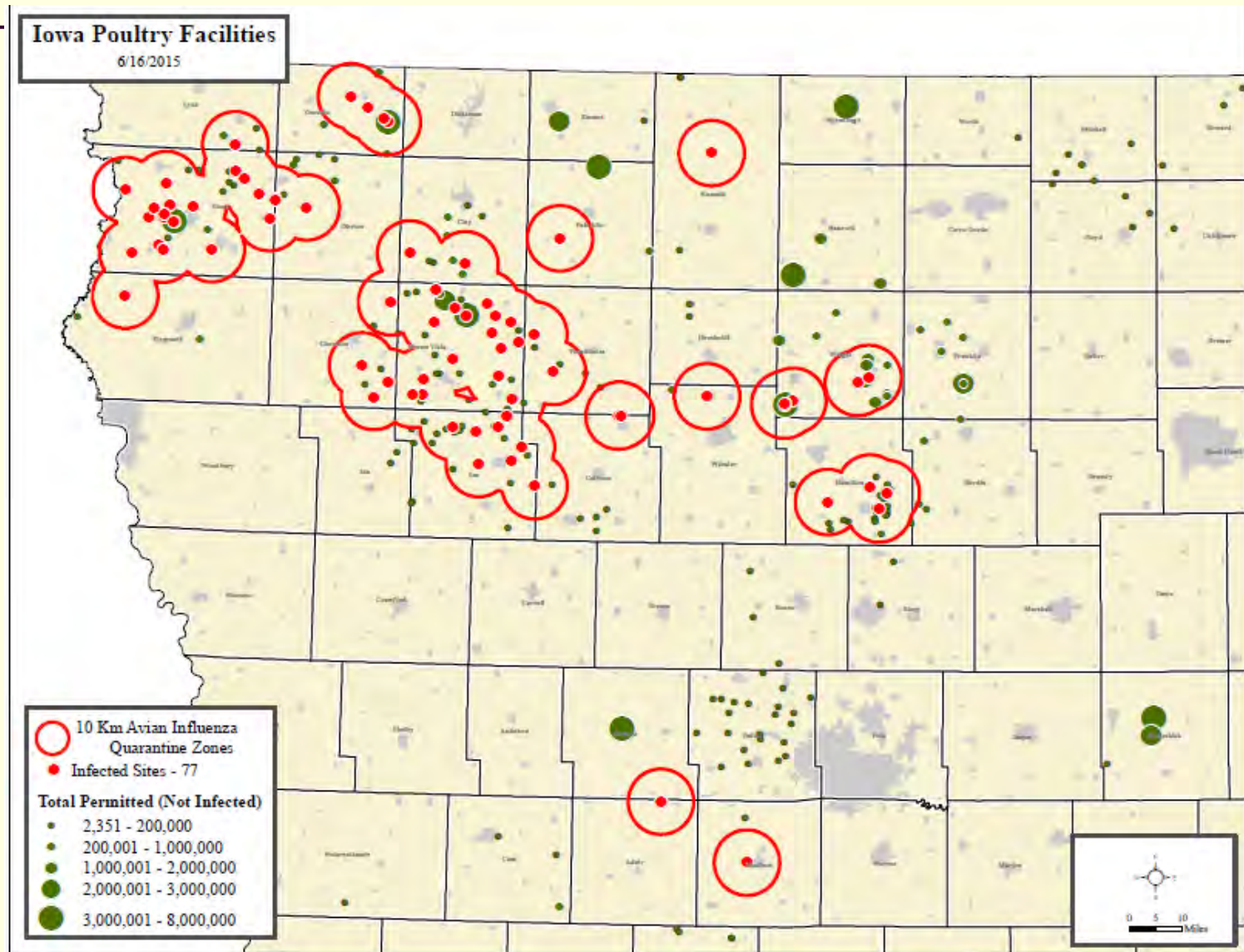
1. Live bird exhibitions at county fairs, the State Fair, fair events and other gatherings are cancelled for the remainder of the calendar year.
2. Sales of birds at livestock auction markets, swap meets or other events are cancelled for the remainder of the calendar year.
3. The prohibitions in this order do not apply to movements permitted by the Iowa Department of Agriculture and to sales or events held electronically or over the internet from non-avian influenza affected areas.
4. Violations of this order are subject to a civil penalty or criminal prosecution or both.



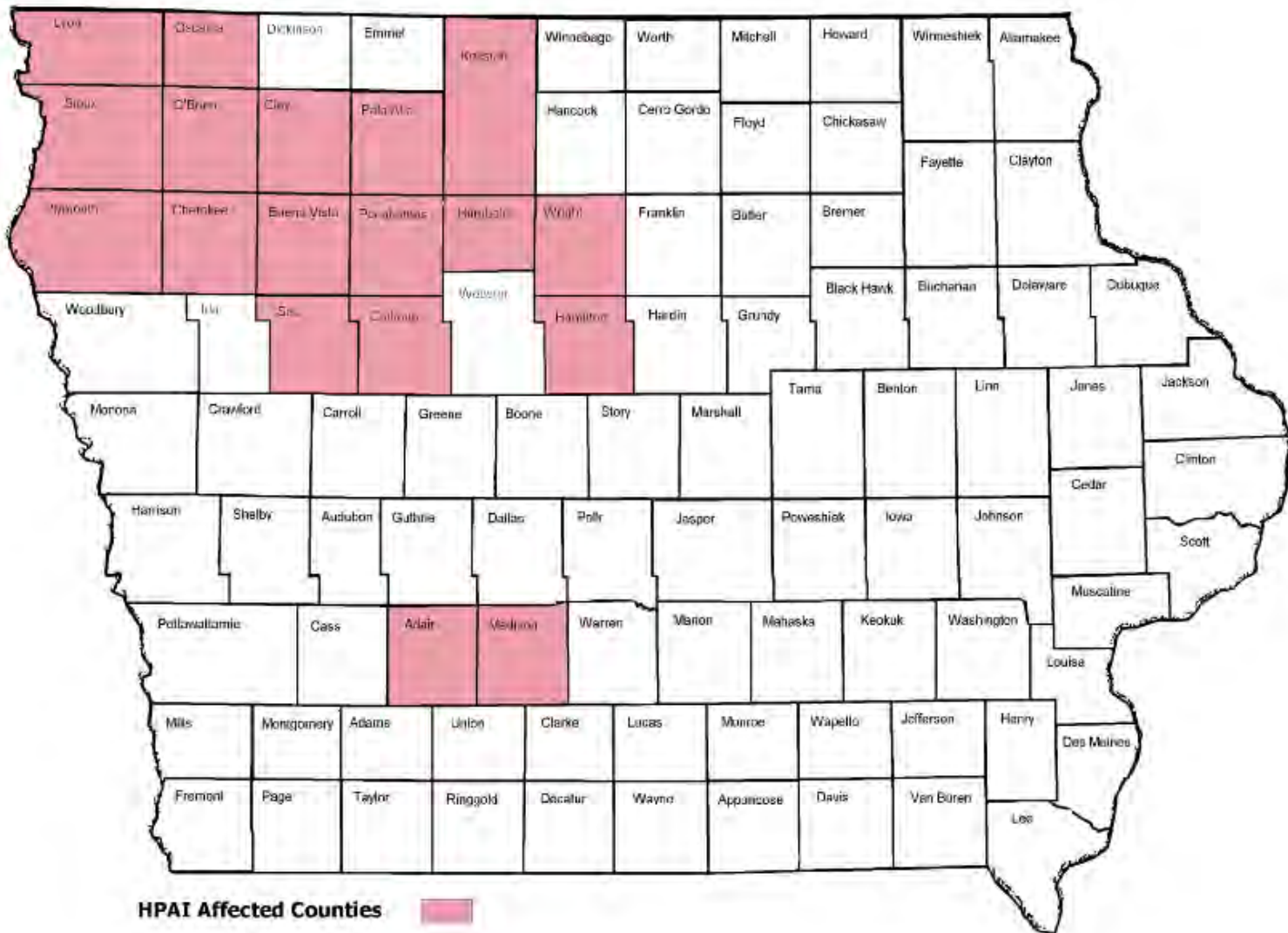
David Schmitt

State Veterinarian

HPAI Iowa 2015 - Premises

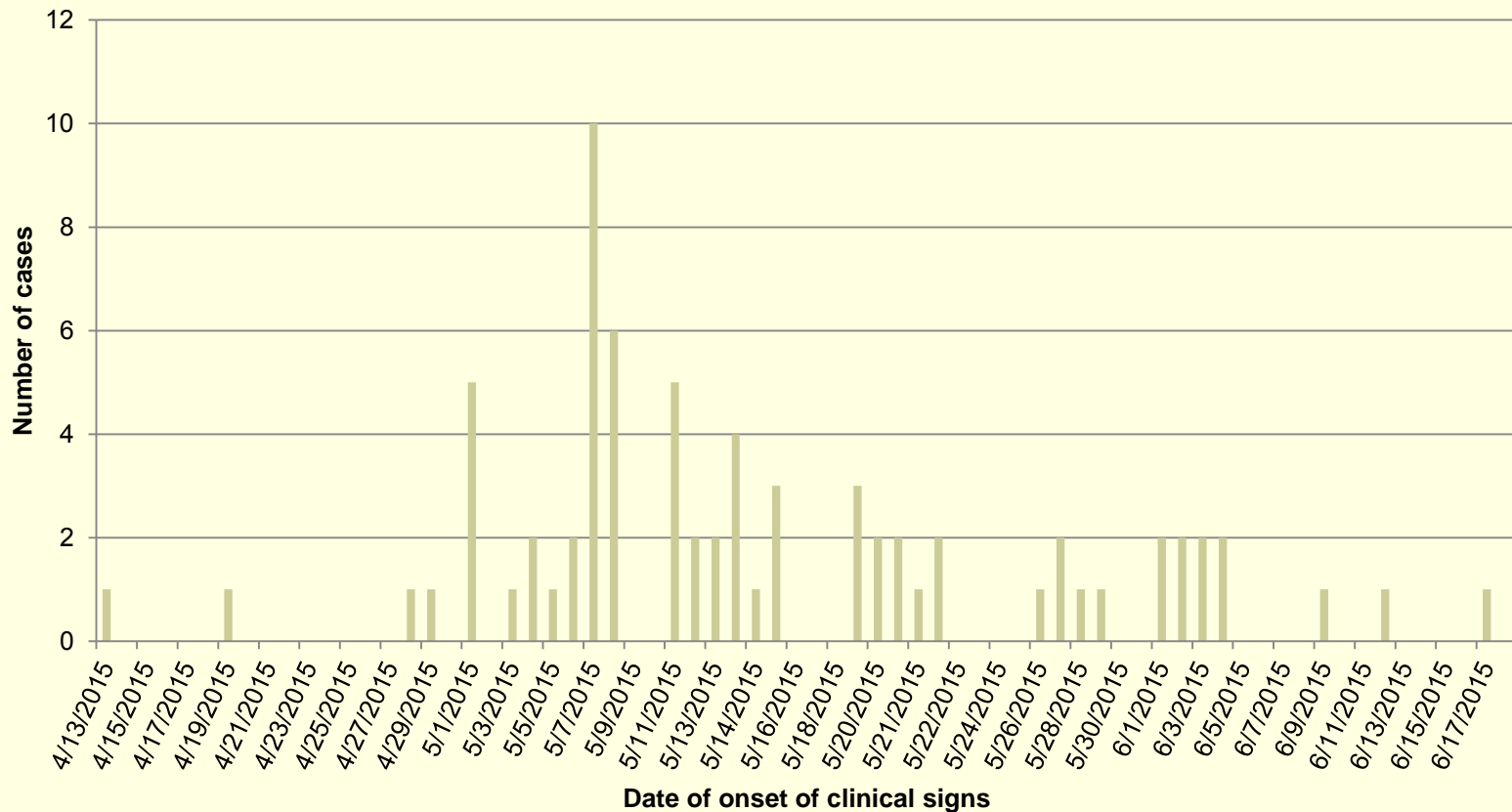


HPAI Counties Affected - 2015



Epi-Curve - 2015

**HPAI-Infected Premises by Date of Onset of Clinical Illness
Iowa - 2015**
(Number of cases = 77)



Last confirmed HPAI H5N2 Iowa Premises – June 16, 2015

Summary HPAI Premises

- 35 Commercial Turkey Farms
- 22 Commercial Table Egg Layer Farms – one certified organic
- 13 Commercial Table Egg Pullet Farms
- 1 Commercial Breeder Flock
- 5 Backyard Producers
- 1 Commercial Mail Order Breeder Operation

- **Total = 77 HPAI Infected Premises**

2015 Iowa Affected Poultry

Type	Animals Indemnified
Commercial Table Egg Layers	25,489,084
Commercial Table Egg Pullet	5,609,474
Commercial Turkey Meat	1,146,586
Commercial Breeder	59,077
Backyard Producer	9,284
Total	32,313,505

- Total Indemnity Due = over \$91 million dollars
- 1,361,543 dozen eggs appraised
- ~\$859 million – total cost for US

2015 HPAI Response

Personnel	7/6
Federal Agency	35
Federal Contractor	67
State Ag Dept.	67
USDA:APHIS:VS	64
Other Contracted Personnel	1,972
Total	2,205

Continuity of Business

- Surveillance testing within AI control zones
 - Backyard flocks
 - Routine surveillance testing in non-infected commercial poultry
 - Testing for movement of eggs and turkeys
- Permitted movements – **over 3,700**
 - All products into a control zone, including infected premises
 - All products out of a control zone
 - All products within a control zone

USDA Emergency Management Response System (EMRS2)

- USDA database for tracking all HPAI response work

The screenshot shows the EMRS2 Home page in a web browser. The browser's address bar displays the URL <https://emrs2.aphis.usda.gov/main.aspx#>. The page features a navigation menu on the left with sections like "Welcome Page", "EMRS2 Premises", "Extensions", "Supply Request", and "EMRS2 Home". The main content area includes a welcome message, a list of district specialists, and a list of SECD DRO, Lab Liaison, and Herd Plan Coordinators. The user's name, David Schmitt, is visible in the top right corner.

Welcome to EMRS2 Production! New Version 15.8.6 was deployed on 8/6/2015.
This is the production environment so only enter real investigations here. This version includes several small enhancements and bug fixes. EMRS Advanced Mapping has also been deployed.

EMRS Training Network Specialist
For help or training we have developed a network of specialists to assist in your districts. Please contact the nearest associate for primary support in the use of EMRS.

District 1- Lech Sobudlarek - MA, Gillian Comyn - VA
District 2- Shelly Phillips - TN, Melburn Stephens - AL
District 3- Roger Krogwald - OH, Anna Ruman-IL, Stephan Schaeferbauer-IA
District 4- Brian Lalonde - LA, Beth Cook - AR, Nancy Roberts - OK, Jill Duell -OK
District 5- Brian Archer - KS, Kammy Johnson- MT, Rick Riesland- WY
District 6- Dave Tallion - CA, Jamie Wells - NM, Jeff Hoffman- AZ
Commodity Staff- Barbara Porter-Spalding - NC

SECD DRO, Lab Liaison, Herd Plan Coordinators.
DRO Lab Liaison Herd Management Plan Coordinator State District Lab
Mike Logan MS/LA/MO 4
Wade Reeves Wade Reeves TX/AR 4 TVMDL-CS
Nancy Roberts Nancy Roberts Pruitt/Roach OK 4 OSU VDL
Gary Stevens Gary Stevens NE 5 NE-VDC
Don Evans Don Evans KS 5 KSU VDL
Don Evans Misty Sabbe/Susan Keller ND 5
Gary Stevens Dustin.oedekoven@state.sd.us/ Lynn Tesar 5 SD ADRDL
Krista Surles/Shawn Bolton Krista Surles/Shawn Bolton 2
Stephan Schaeferbauer Stephan Schaeferbauer Tim.Smith@iowaagriculture.gov IA/WI 3 ISUVDL
Dave Barber Suzett Hoxum IL 3 IL-UIUC VDL
Anna Ruman Dave Hawkins IN 3 IN-ADDL
Anna Ruman KY 3
Colleen Bruning-Fann Micky Barrett MI 3 MI-DCPAH
Doris Olander /Beth Thompson John Pielh MN 3 MNVDL
Roger Krogwald Nancy Hannaway OH 5 OH-ADDL
Lech Sobudlarek Lech Sobudlarek 1
Bob Brady Bob Brady Nicole Giguere ME, MA, NH, CT, VT, RI 1
Todd Johnson Todd Johnson Paul Pitcher NY 1

Data Entry



Iowa 2016 Poultry Update

- April egg production – 1.09 billion eggs (up 2% from March)
- 17 % less egg production compared to date in 2015 (USDA NASS)
- Iowa egg layers still down 12% from last year's numbers – layer numbers up 3% from previous month
- National egg production reported still down 1% from totals in April 2015
- Japan open to Iowa exports – December 21, 2015
- Mexico open to Iowa exports – April 18, 2016

Questions?

**Biosecurity!
Is Important!**

Thank You

- IDALS Staff
- USDA Veterinary Services
- USDA Animal Care
- USDA Investigative and Enforcement Services
- USDA Wildlife Services
- Iowa Department of Natural Resources
- Iowa Department of Public Health
- Iowa State University, College of Veterinary Medicine
- Iowa State University Extension Services
- Iowa Livestock Industry Organizations and Businesses
- Iowa Homeland Security and all Departments staffing at State Emergency Operations Center