

Preventing Disease in Small Flocks:

Why it's Important & Tips on How to Do it

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2015 Train the Trainers
June 22nd & 23rd Davis, California
June 25th & 26th Los Angeles, California



Questions?



Who am I ??

Work Experience

- UC Extension, UC Davis School of Vet Med
- California Department of Food and Agriculture
- California Council of Science and Technology
(Science Fellow-California State Senate)
- Small Animal Veterinarian
- Lawrence Livermore National Lab
(Chemical And Biological National Security Program)

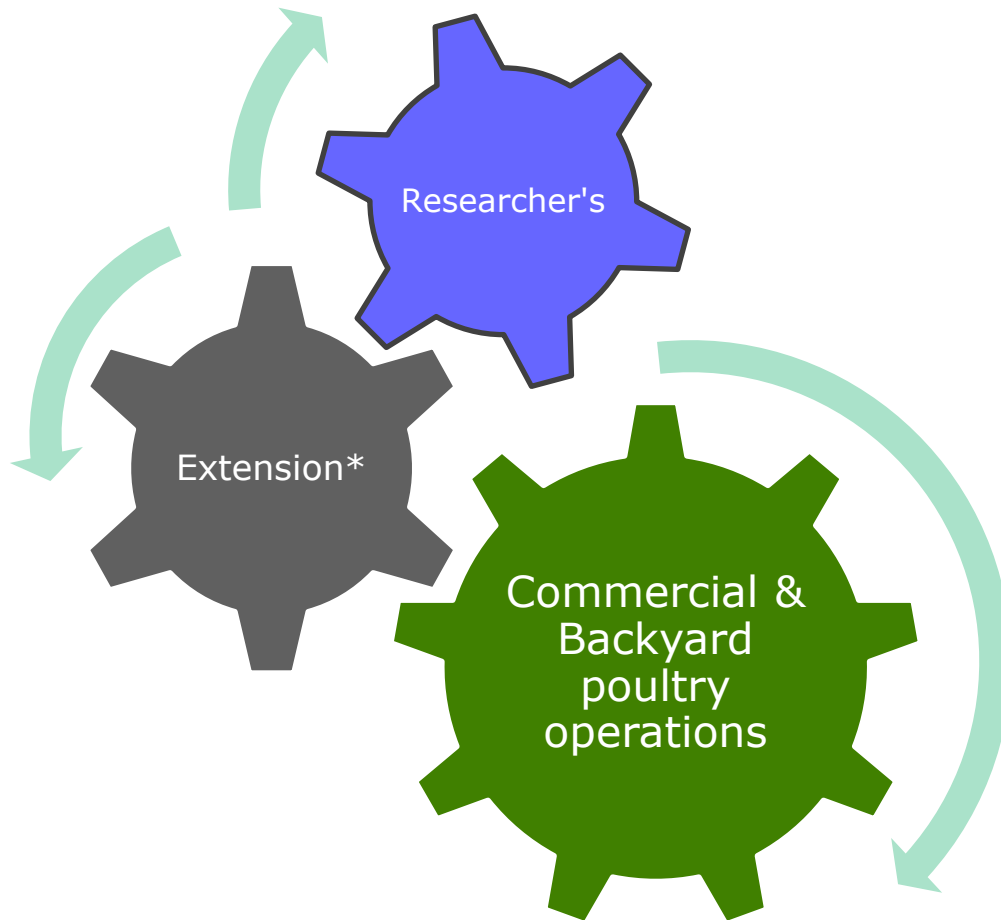
Areas of Interest

- Application of classical & Spatial Epidemiology in disease surveillance
- Interface of science & policy
- Food animal production and GHG
- 'Next Gen' food safety

Real Life



What is Cooperative Extension?



Mission Statement:
Statewide network of researchers and educators focused on the creation and application of knowledge in agriculture

- 200 locally based CE advisors and specialists
- 57 local offices
- 130 campus based CE specialists
- 9 research and extension centers
- 700 academic researchers

<http://ucanr.edu/>

* Extension Specialists,
Researchers and Farm Advisors



New UCCE Poultry Website

UCCE Poultry

University of California Cooperative Extension

SHARE EMAIL PRINT SITE MAP

<http://ucanr.edu/sites/poultry/>

About Us Newsletters Who to Contact

Home

Production Type

Avian Diseases

Disease Prevention

Food Safety

Additional Resources

UC DAVIS VETERINARY MEDICINE

Welcome, poultry enthusiasts

This website is designed to help you find

Here you can find information about:

- [Backyard Poultry](#)
- ["Micro-Commercial" \(Small-Scale\) Production](#)
- [Commercial Production](#)
- [Common Avian Diseases](#)
- and more!

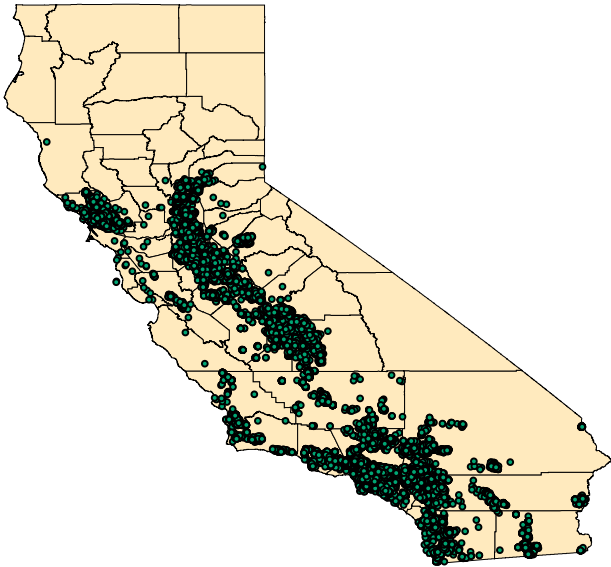
In Case of Poultry Issues:

(See below flowchart for contact information.)

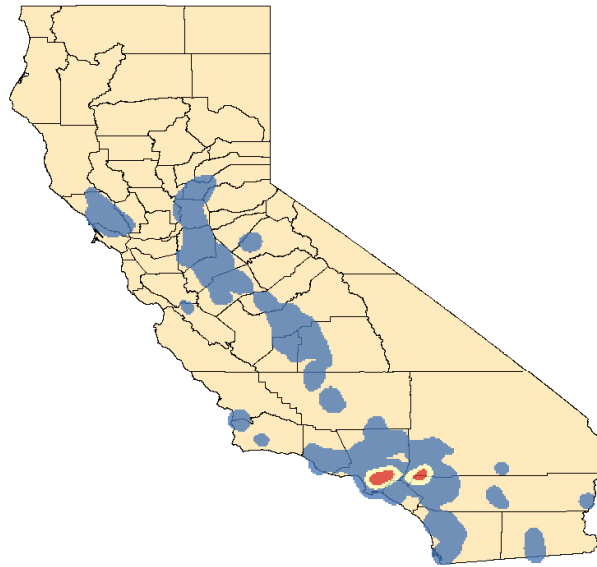
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graph TD; DB([DEAD BIRDS]) --- D1[DISPOSAL: Maurice Pitesky]; DB --- D2[DIAGNOSIS: CAHFS]; DB --- D3[HIGH MORTALITY: CDFA/USDA Hotline]; LB([LIVE BIRDS]) --- L1[SICK FLOCK: CDFA/USDA Hotline]; LB --- L2[ECTOPARASITES: Brad Mullens]; LB --- L3[BEHAVIOR/WELFARE: Joy Mench]; LB --- L4[SICK INDIVIDUAL BIRD]; L4 --- L4a[CAPE]; L4 --- L4b[Contact local veterinarian];
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Where are all the chickens in California???

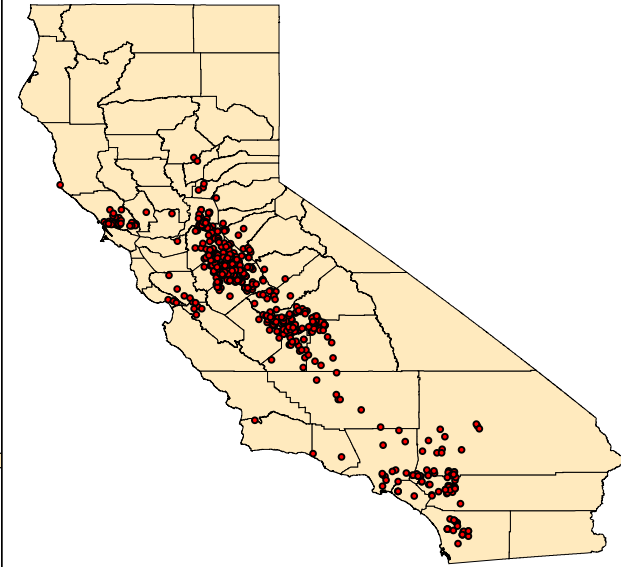
BY poultry



BY poultry

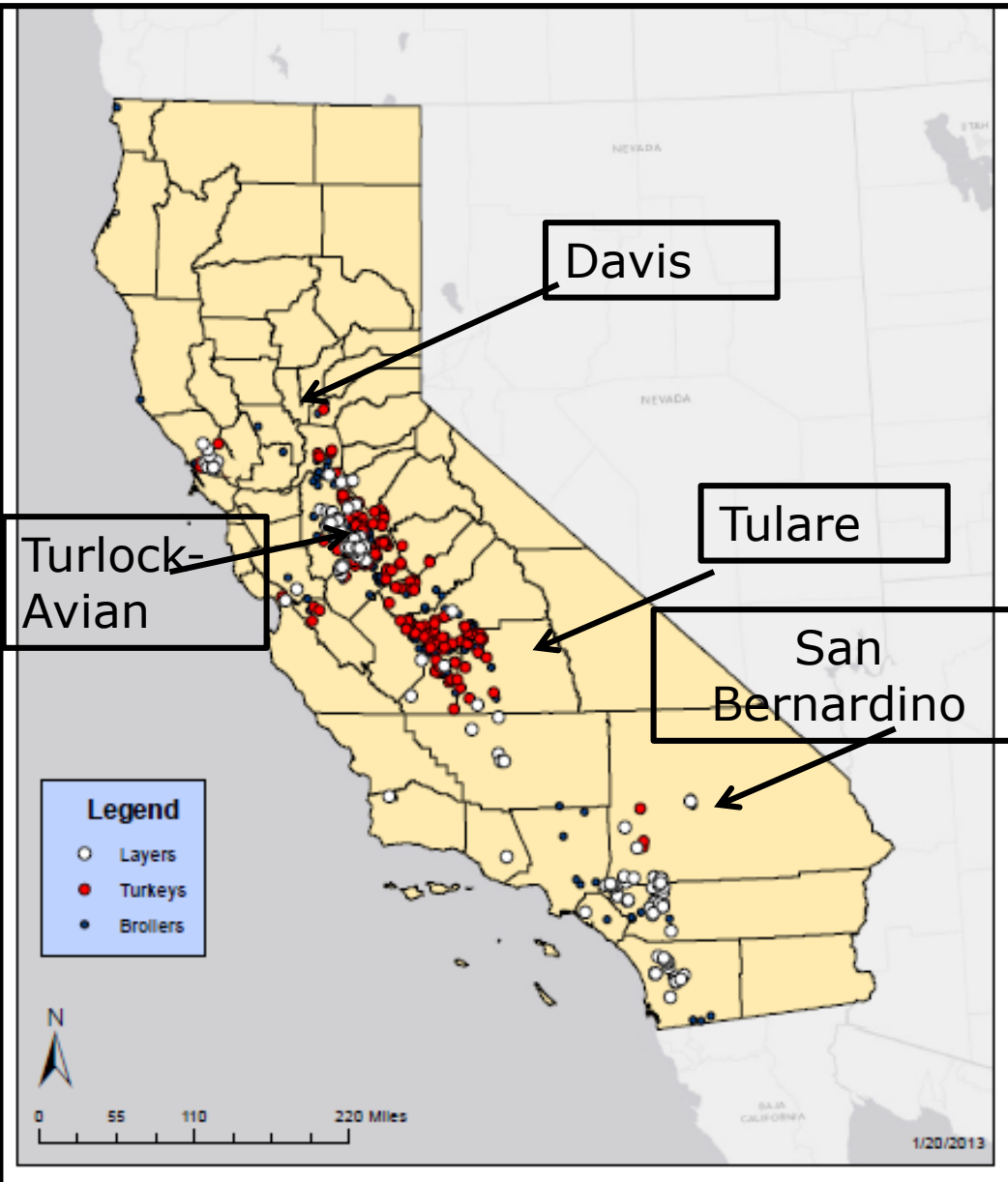


Commercial poultry



Why did the state of California do a survey of Backyard poultry operations?

Commercial California Poultry Industry



7th largest layer producer

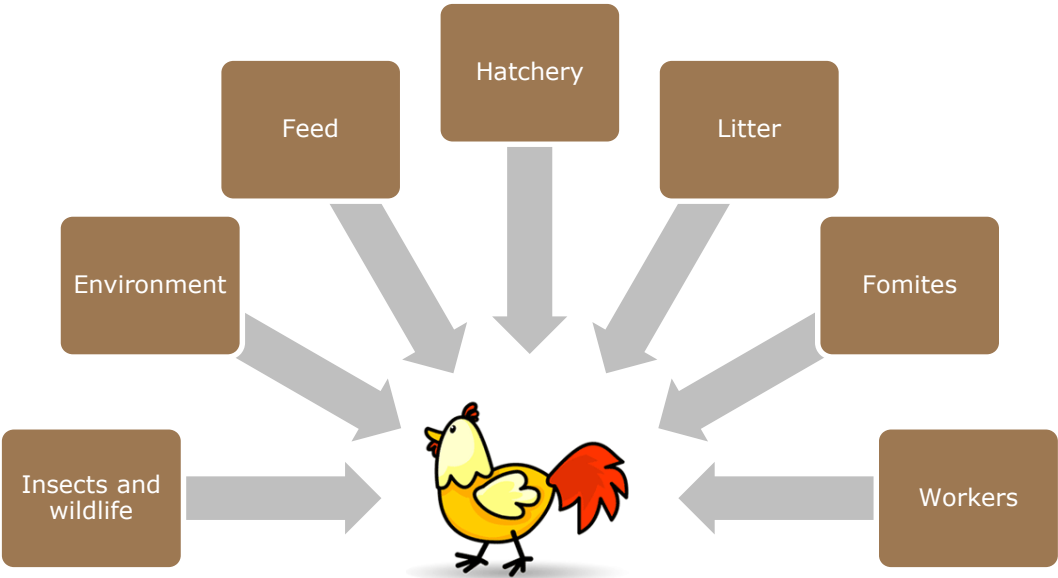
Net importer of eggs

250 million broilers processed/year

12th largest broiler producer

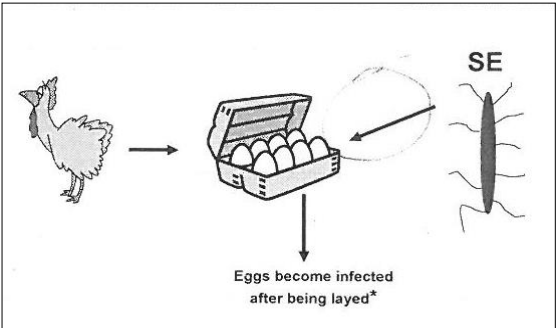
7th largest turkey producer

How do the flocks in the previous slide get sick?



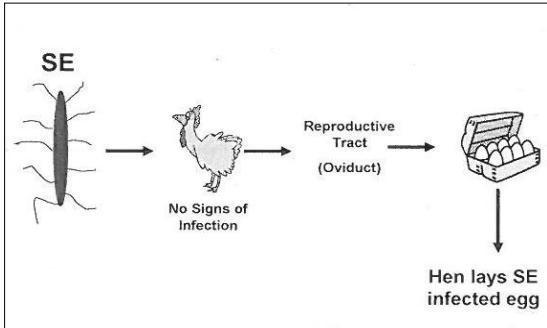
Disease transmission into eggs

Horizontal Transmission



(FDA)

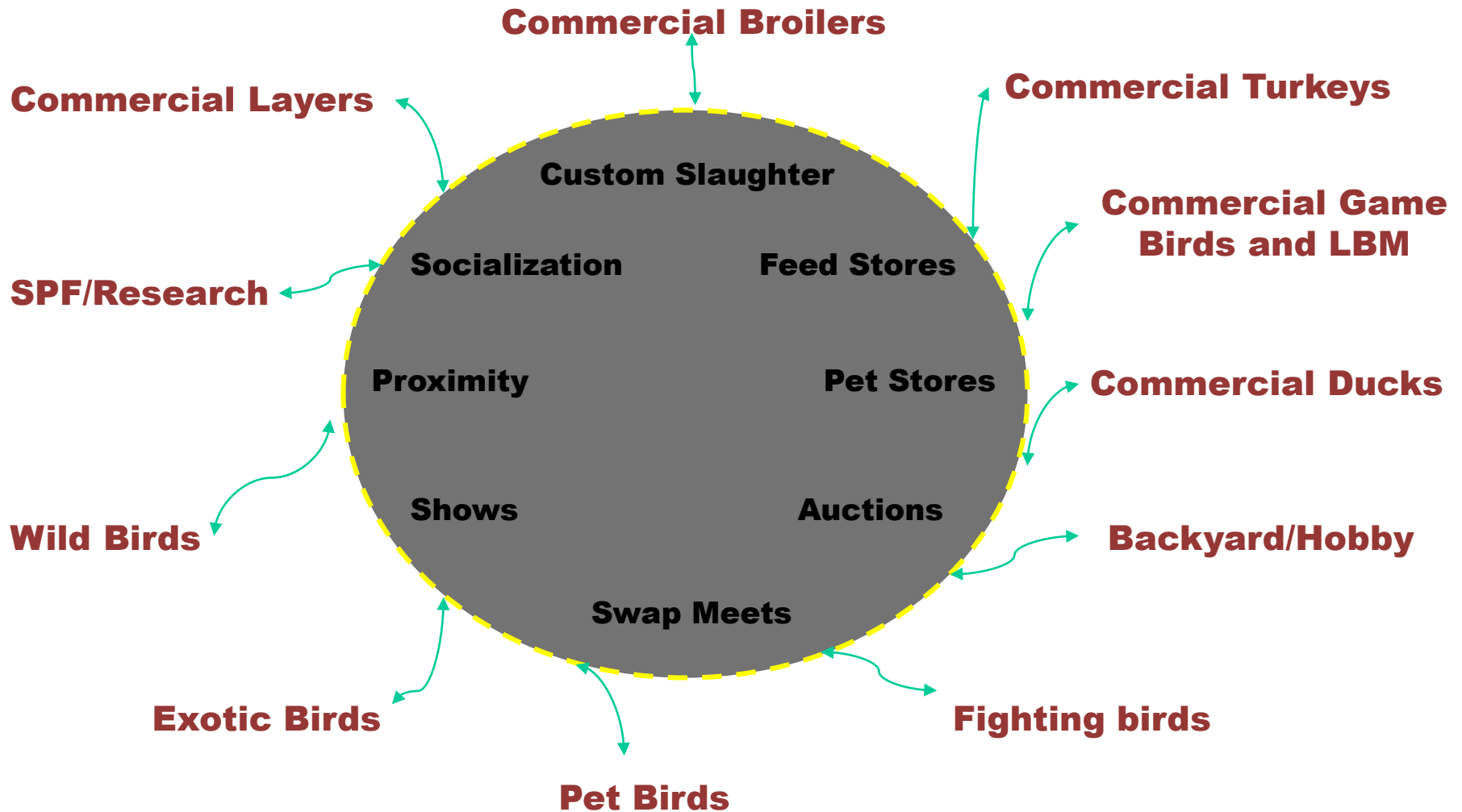
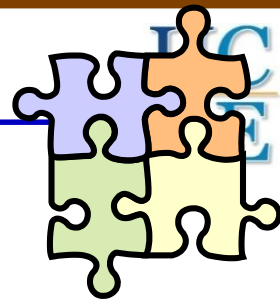
Vertical Transmission



(FDA)

There are multiple hosts and multiple routes of infection

Routes of Disease Transmission

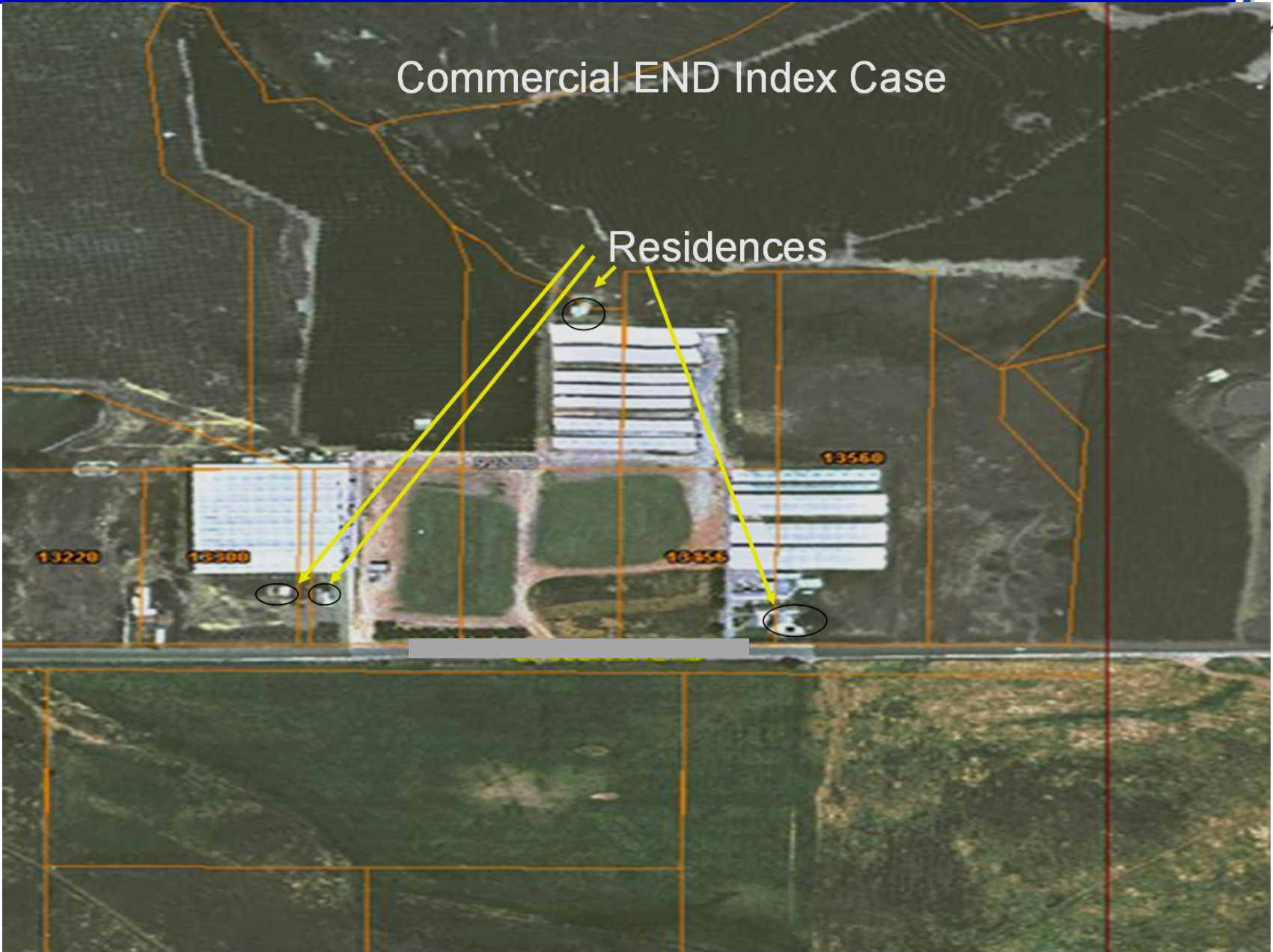


Slide adapted from Dave Castellan

END in California: 2002

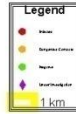
Commercial END Index Case

Residences

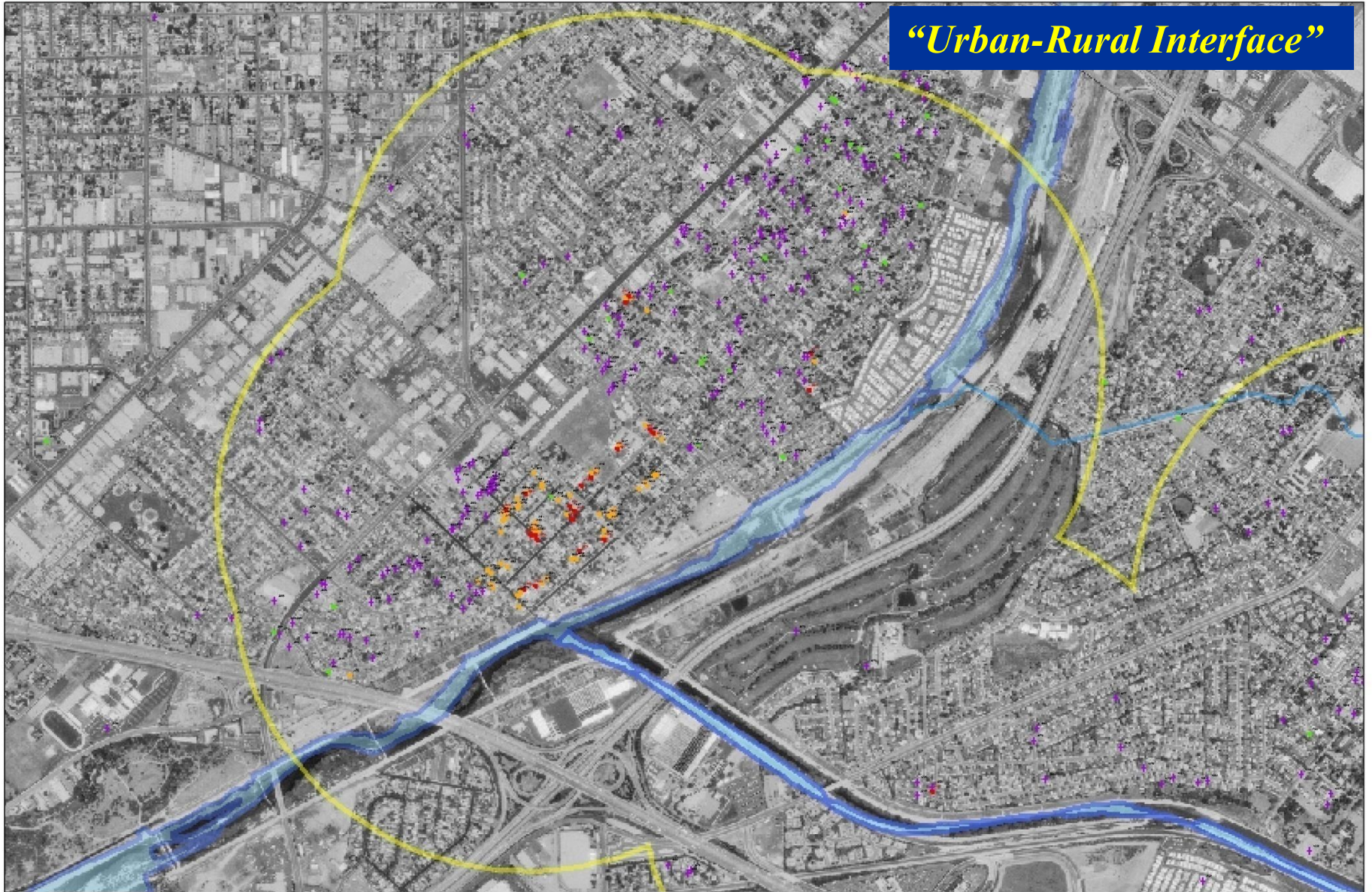




Property of State of California
This map may not be reproduced
without permission of the
California Department of Food and Agriculture
Animal Health Branch



Exotic Newcastle Disease
Surveillance Information as of :12-09-2002
El Monte Area
1 km buffers



Summary of the Outbreak:

Backyard flocks & commercial

CA, NV, AZ, TX

18,435 premises quarantined

921 premises depopulated

4 million birds euthanatized

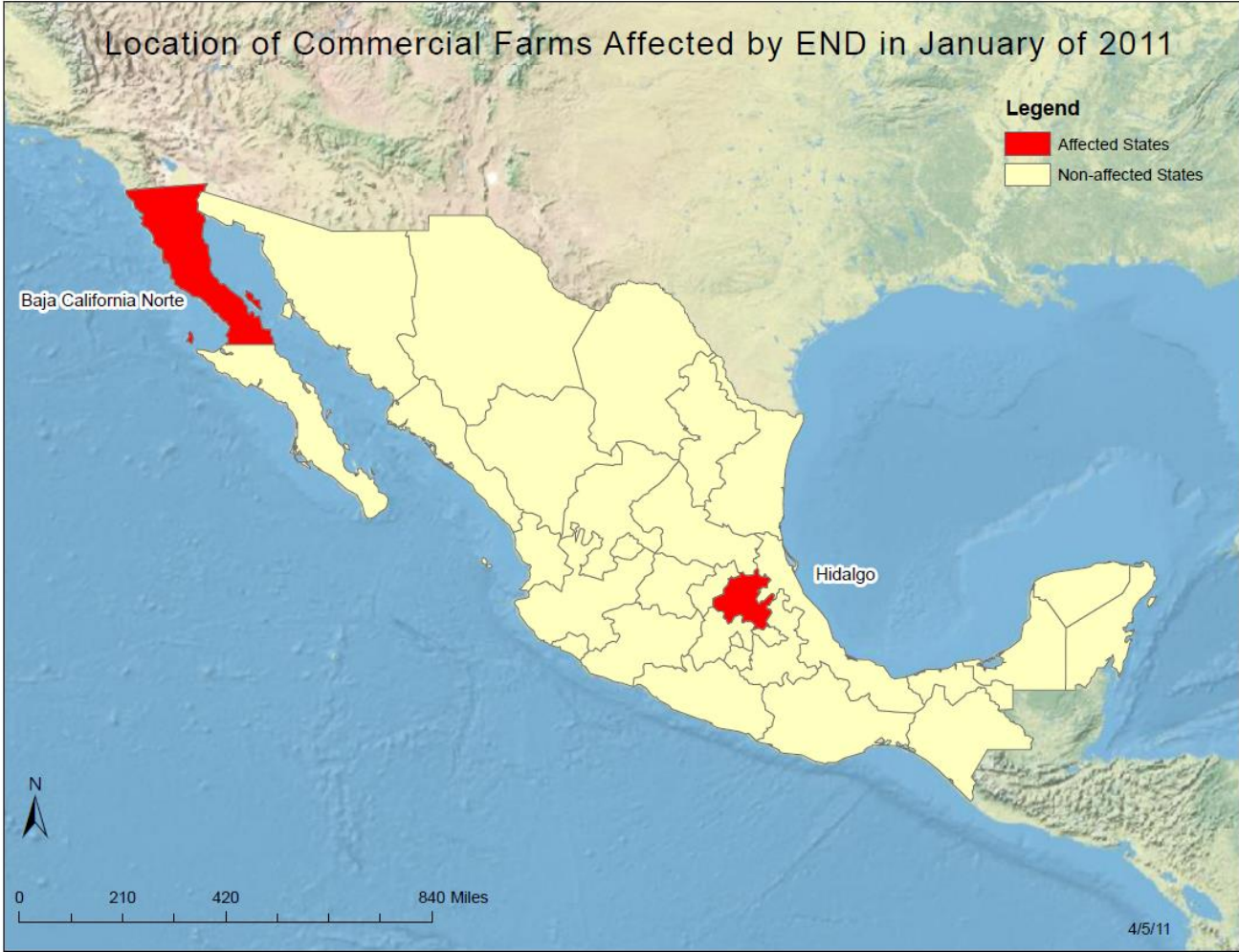
\$165 million cost to USDA

Additional \$165 million for industry

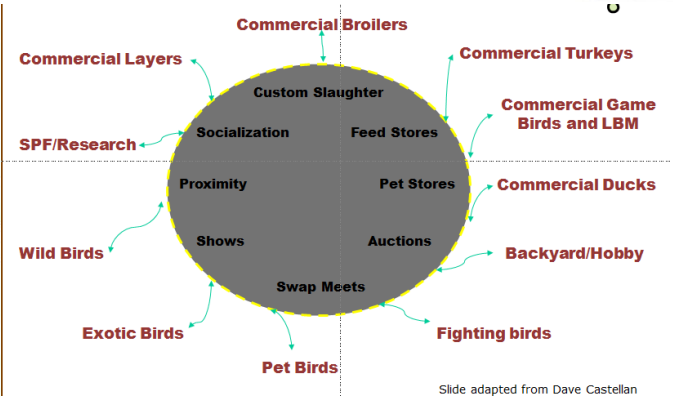
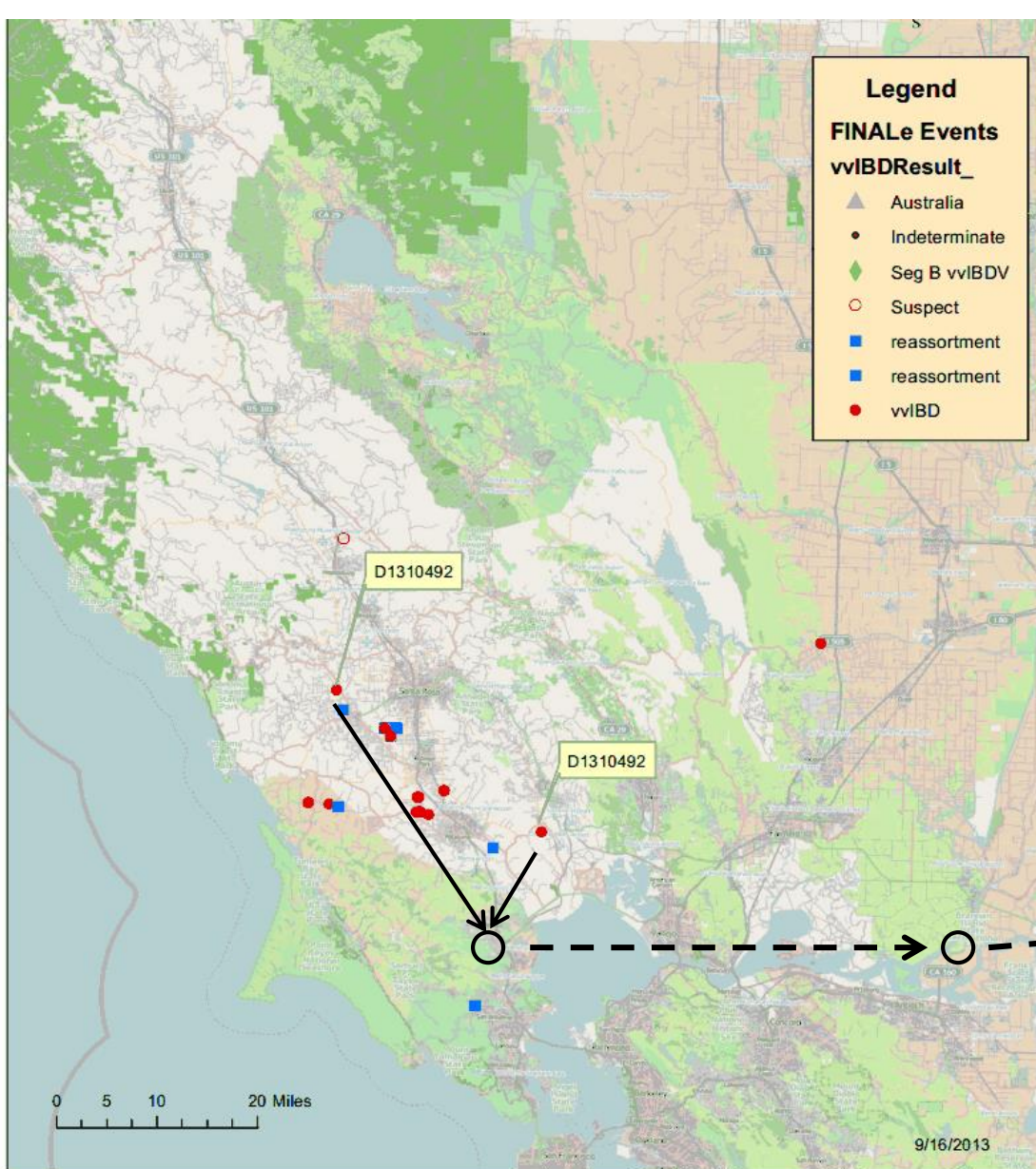
Trade embargos on poultry, eggs, birds



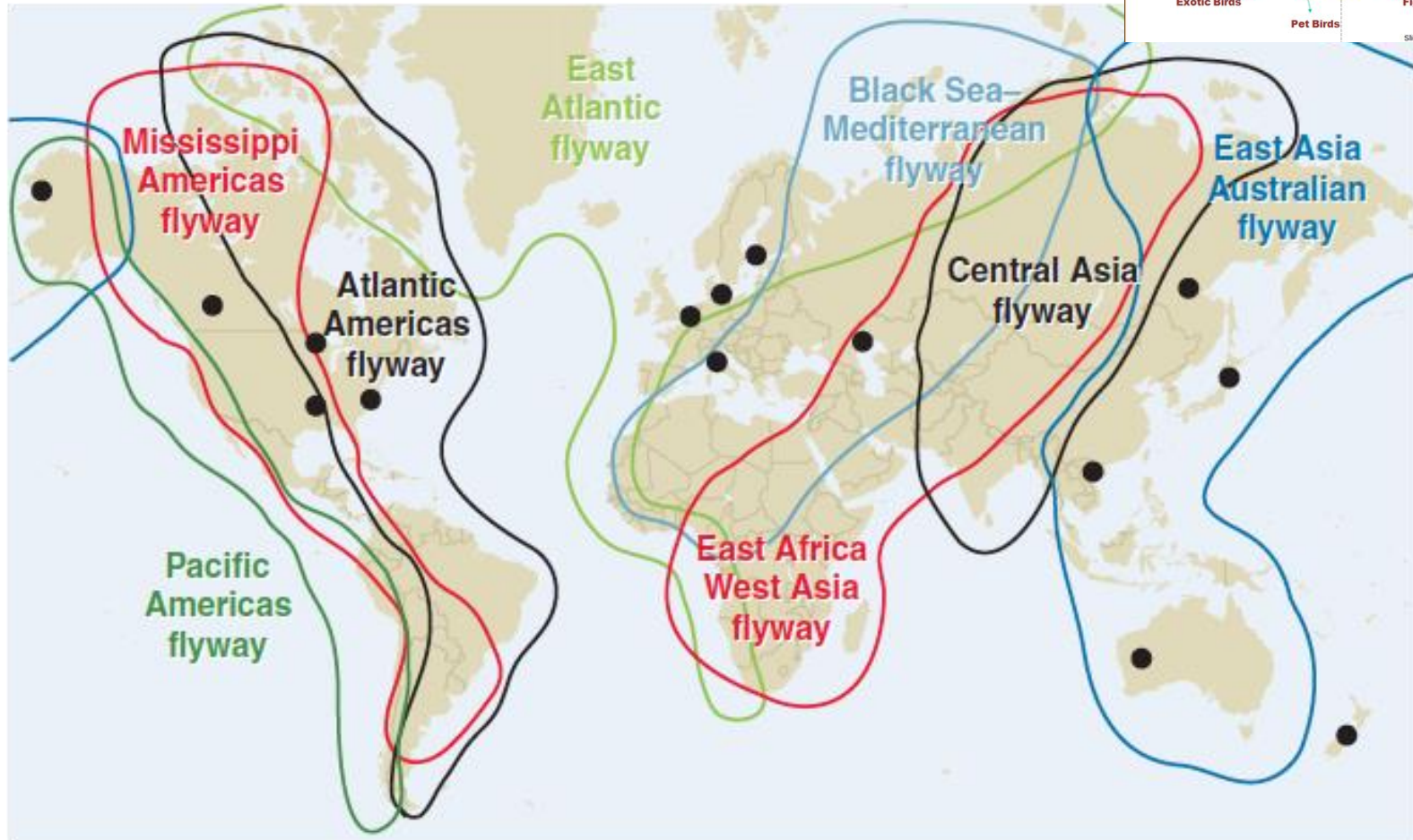
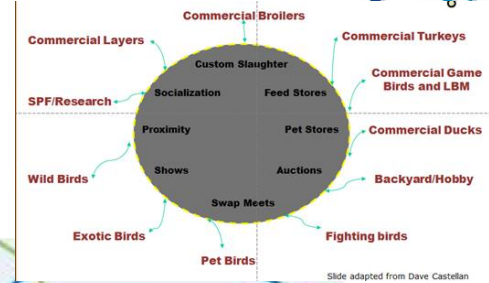
Where is END today?



Sources of Disease: Our neighbors...



Sources of Disease: Migratory Waterfowl...



Björn Olsen et al., Global Patterns of Influenza A Virus in Wild Birds, Science 312, 384 (2006);

How to do we prevent disease from getting in our flock?

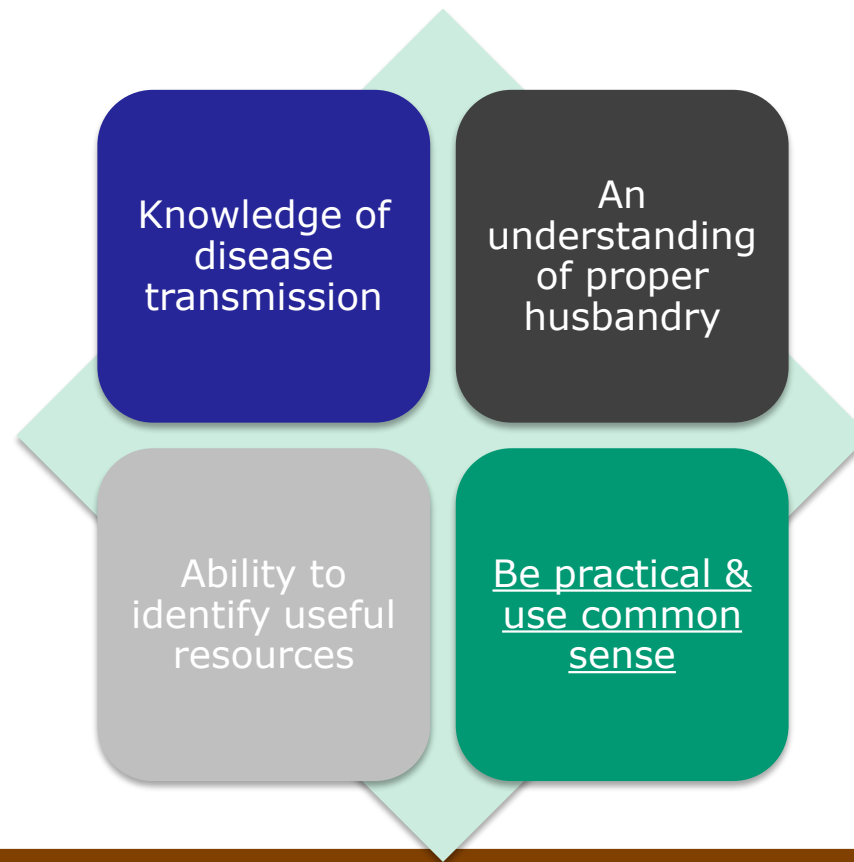


Versus...

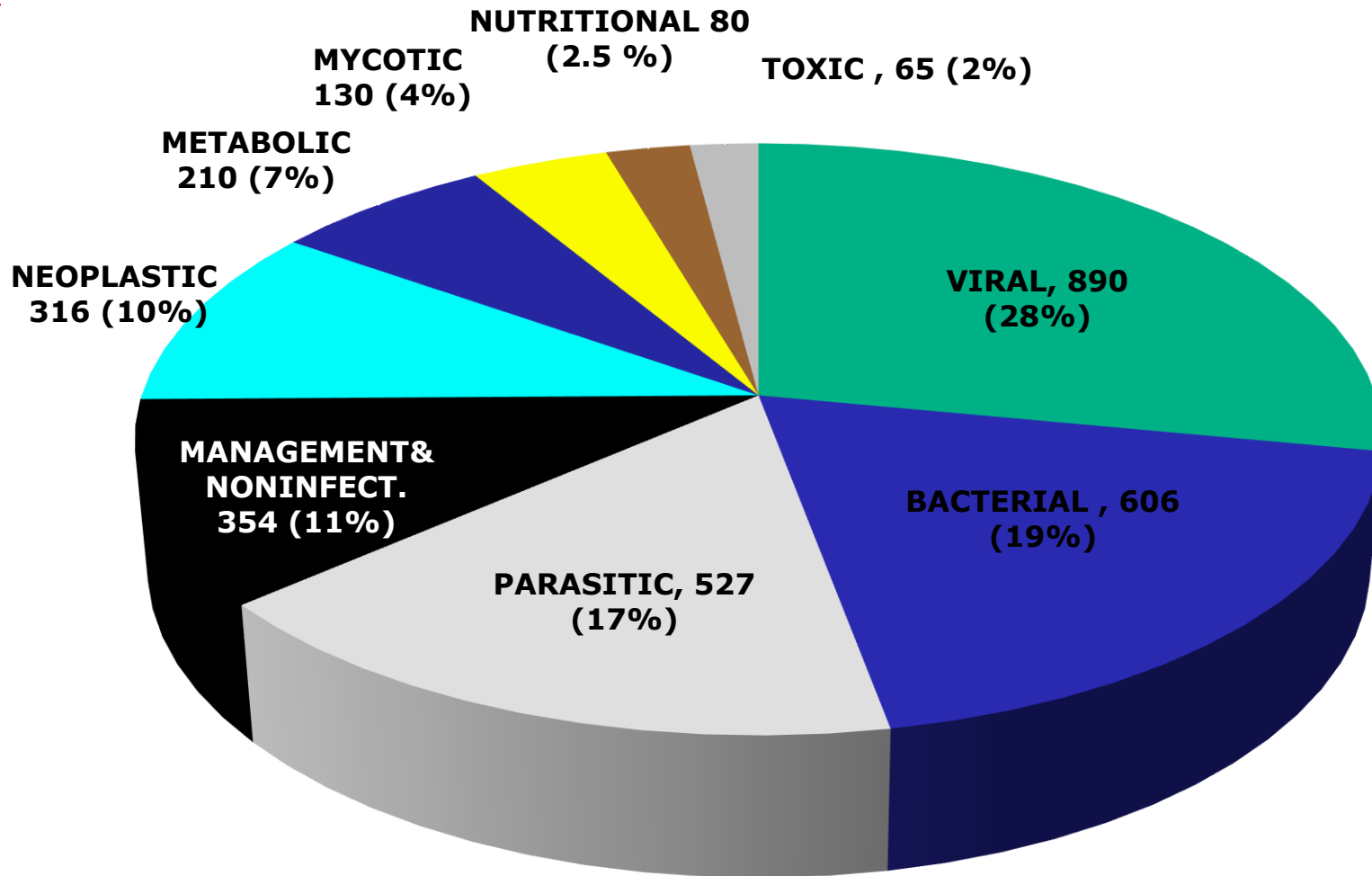


Biosecurity: The protection of animals from disease causing agents

Can't learn BY Biosecurity without...



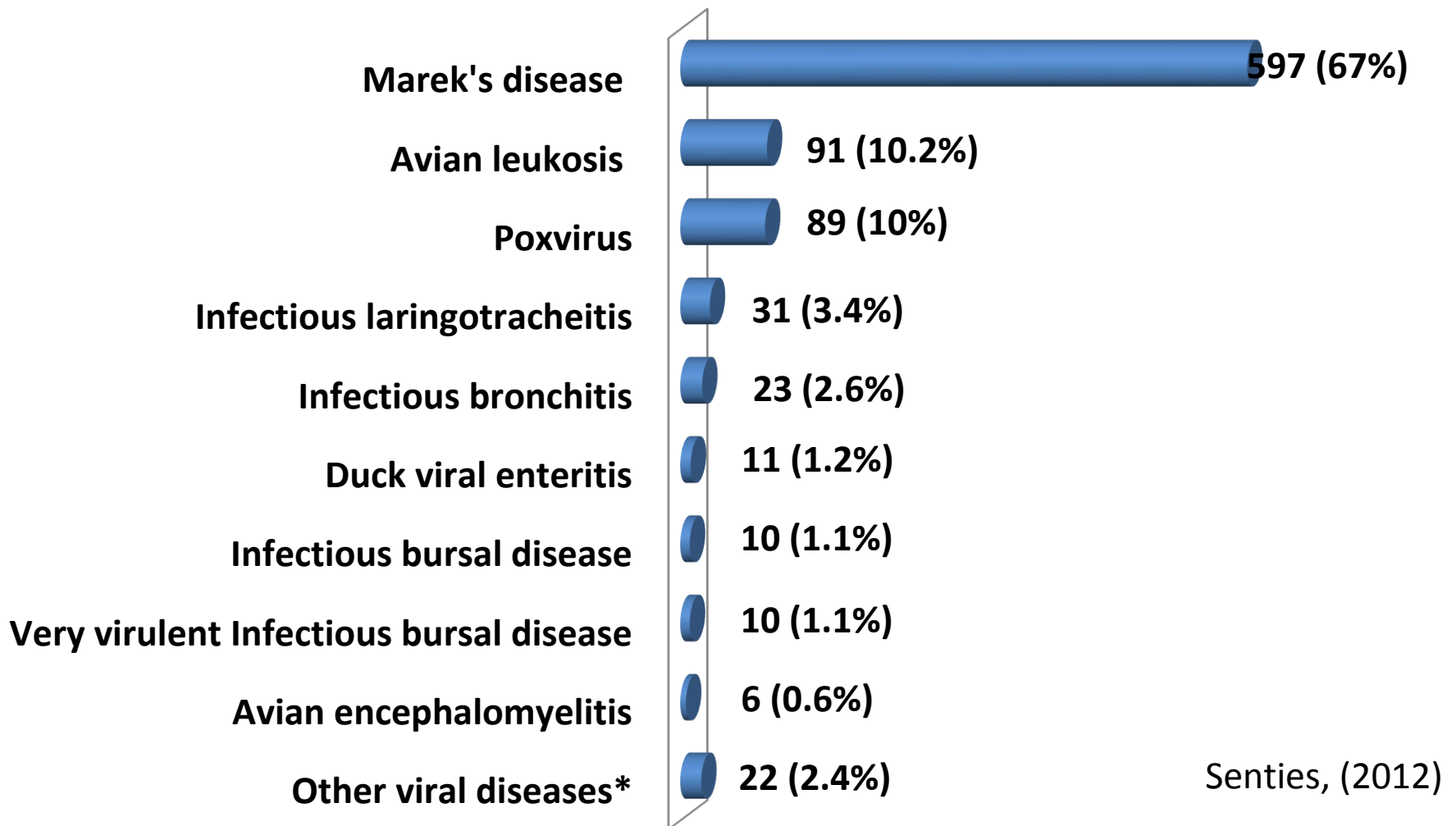
2001-2011 Frequencies and Percentages of Diagnoses by Etiological Types



TOTAL = 3178 DIAGNOSES

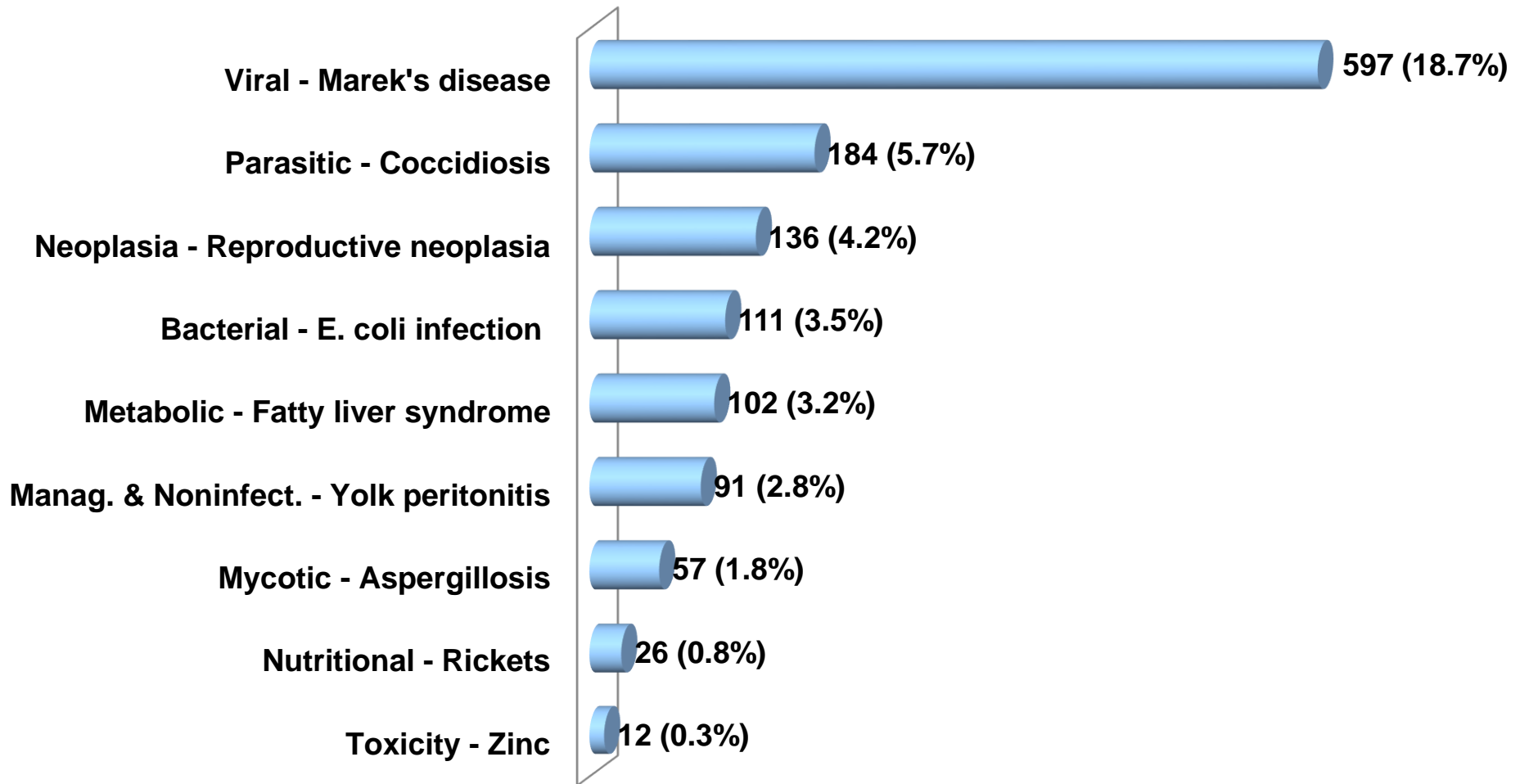
Senties, (2012)

Viral Diseases (890 Diagnoses)



*Most of the 2002-2003 exotic Newcastle disease diagnoses were not included since regulatory diagnoses are not considered "backyard" in LIS.

2001-2011 Top Backyard Poultry Diseases



Transmission of Disease

What fomites and diseases can be transmitted in this 'litter'?

Knowledge of
disease
transmission

An
understanding
of proper
husbandry

Ability to
identify useful
resources

Be practical &
use common
sense



<http://www.therural.co.nz/author/jj-mcconnachie>

- MDV infects cells of the feather follicle and can remain viable in feather dander for several months
- Coccidia oocysts can survive for over 1 year in the environment (warmth and humidity)

General Poultry Disease Control Principles

- Biosecurity
- Vaccination
- Antibiotics
- Competitive exclusion
- Pre- and pro-biotics
- Feed and water hygiene
- Other Additives (e.g. essential oils)
- Environmental sampling



Versus...



Access to all these are limited except for?

- Biosecurity
- Vaccination
- Antibiotics
- Competitive exclusion
- Pre- and pro-biotics
- Feed and water hygiene
- Other Additives (e.g. essential oils)
- Environmental sampling

Biosecurity!!!

Therefore BIOSECURITY is the small flock owners primary method of disease prevention

Goal: Reduce the probability of an infectious disease getting into your flock

Practical biosecurity for BYF owners

- Obtain your chicks from a reputable source (i.e. NPIP certified hatchery)
 - Testing for *Salmonella pullorum* and *Salmonella gallinarum* and AI for breeding/hatching industry
- Encourage the hatchery to vaccinate chicks against MDV
- Do not allow chickens to enter to your home as 'visitors'
- Avoid mixed-aged flocks if possible...
- Do not have more chickens than the ones you can handle
- Use clothes specifically for working with chickens, especially shoes
- Wash hands thoroughly before and after working with chickens
- Every time you introduce new birds quarantine them for 7-10 days
- Separate sick birds from healthy birds
- If sufficient land rotate your coop.
- Foot baths (Difficulties)



Be meticulous!

Practical biosecurity for BYF owners cont

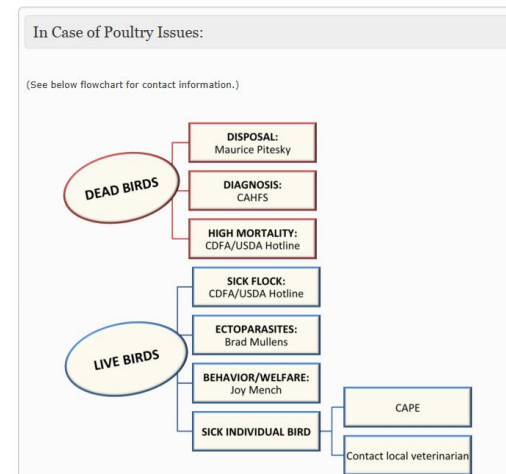
Your birds should not have contact with wild birds including game birds and migratory waterfowl, rodents or insects as these may carry disease organisms.

Outdoor birds should be kept in a screened in area to minimize exposure to diseases.

Obtain feed from clean dependable suppliers and store the feed in containers that are bird, rodent, and insect proof. Provide clean fresh water to your birds at all times.

Restrict access by visitors onto the premises where your birds are housed. Do not allow people who own other birds to come in contact with your birds.

Consult your local veterinarian for more useful tips.



Practical Biosecurity: Rodent control

Why are rodents bad?

Diseases spread by rodents include: Salmonella, Plague, IB, AI, Fowl Cholera etc.

They love poultry feed



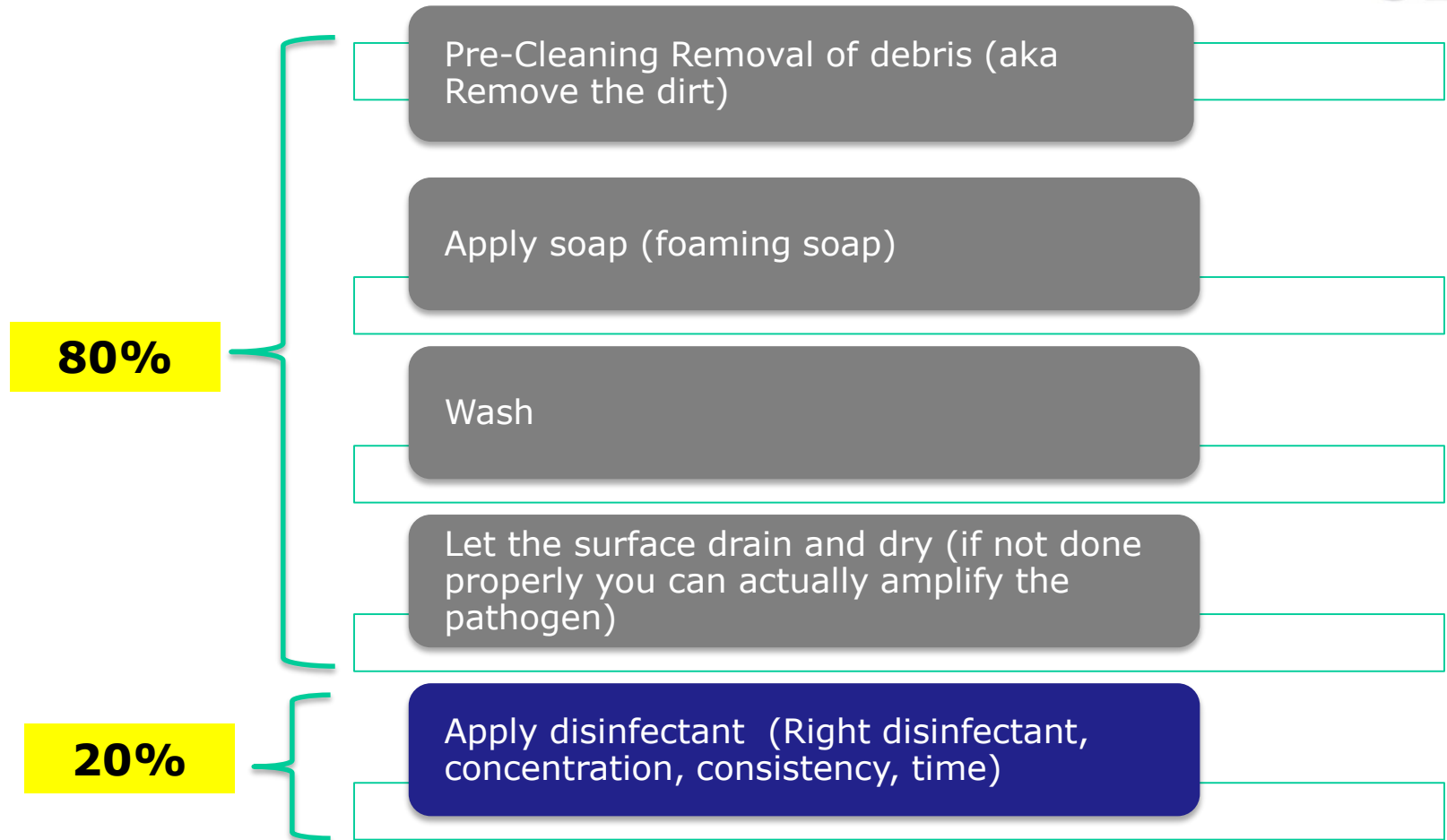
Know your enemy...

- Mice and rats have different behaviors
- Rats are more cautious, more opportunistic and have a larger geographical range of land
- Rodents don't like to dig through gravel. Therefore use gravel as a barrier at the coop fence-line
- Rodents can jump ~3 ft from a tree to the roof of a coop. Therefore, prune trees appropriately

Traps and Baits:

- Essential part of poultry management
- On the outside: Put traps or bait stations every 25 to fifty feet around the perimeter of the house
- On the inside: Put traps along beams, walls and ceiling routes and at each door
- Products I don't like: Glue-boards

Practical Biosecurity: Decontamination



- Bleach (~ 4oz/gallon) is the most practical disinfectant for BY owners, but limited activity in the presence of organic matter
 - You can't disinfect dirt!

Biosecurity Tips

Biosecurity for the birds



BIOSECURITY FOR BIRDS

Recognizing the warning signs of infectious poultry diseases such as avian influenza (bird flu) can help protect your birds.

Be sure to follow simple hygiene steps such as keeping cages and equipment clean and not sharing supplies with other poultry owners.

Healthy flocks rock!

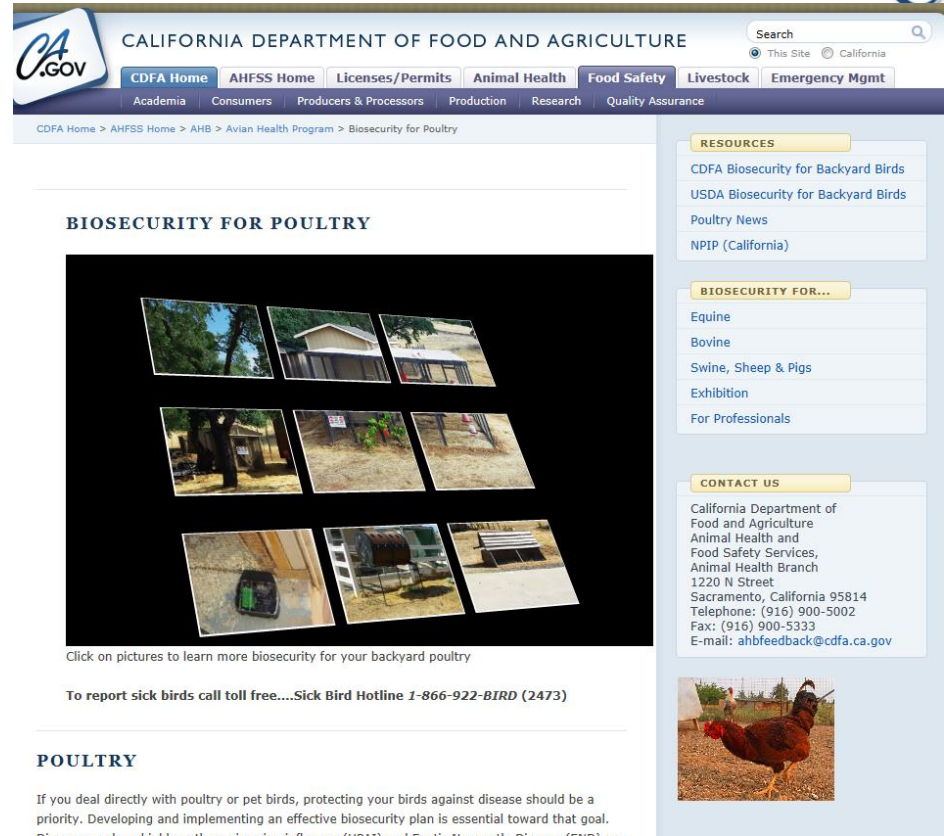
United States Department of Agriculture
USDA is an equal opportunity provider and employer.

Be a bird watcher and keep your birds healthy.

Learn more at <http://healthybirds.aphis.usda.gov>

http://www.aphis.usda.gov/animal_health/birdbiosecurity/

**CE sites and podcasts
(chicken whisperer)**



CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

CDFA Home AHFSS Home Licenses/Permits Animal Health Food Safety Livestock Emergency Mgmt

Academia Consumers Producers & Processors Production Research Quality Assurance

CDFA Home > AHFSS Home > AHB > Avian Health Program > Biosecurity for Poultry

BIOSECURITY FOR POULTRY

Click on pictures to learn more biosecurity for your backyard poultry

To report sick birds call toll free....Sick Bird Hotline 1-866-922-BIRD (2473)

POULTRY

If you deal directly with poultry or pet birds, protecting your birds against disease should be a priority. Developing and implementing an effective biosecurity plan is essential toward that goal.

RESOURCES

- CDFA Biosecurity for Backyard Birds
- USDA Biosecurity for Backyard Birds
- Poultry News
- NPIP (California)

BIOSECURITY FOR...

- Equine
- Bovine
- Swine, Sheep & Pigs
- Exhibition
- For Professionals

CONTACT US

California Department of Food and Agriculture
Animal Health and Food Safety Services,
Animal Health Branch
1220 N Street
Sacramento, California 95814
Telephone: (916) 900-5002
Fax: (916) 900-5333
E-mail: ahbfeedback@cdfa.ca.gov

http://www.cdfa.ca.gov/AHFSS/Animal_Health/Avian_Health_Program.html

Questions?

