

# Biosecurity on Pasture Poultry Farms

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# About Me

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## Experience

- B.S. in Animal Science, UC Davis
- Worked at UC Davis Avian Facilities
- Worked with quail, cockatiels, Orange Winged Amazons and chickens
- Mostly worked with chickens

## Goals

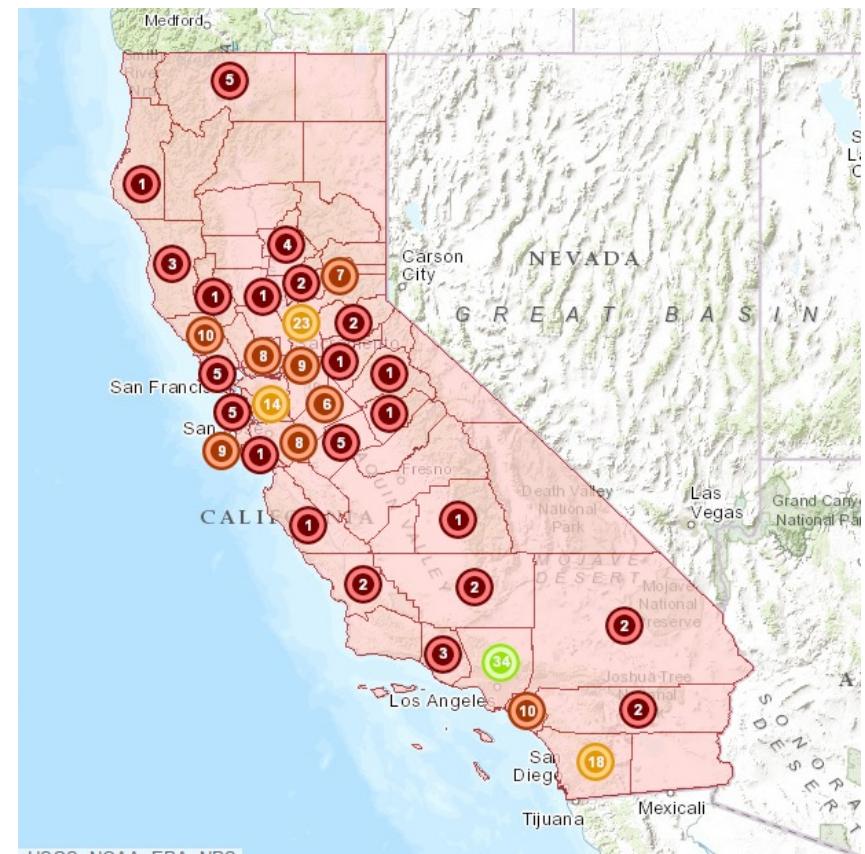
- PhD. In Epidemiology
- strong interest in food safety
- Develop extension skills



# CA BYP Census

- Survey is designed to help us understand the poultry community
  - All backyard poultry owners encouraged to participate in this short survey (~3)
  - Good tool to keep in mind to understand your surroundings and the potential risks tied to them
  - Keep in mind it's fairly new, activated in September

[http://ucanr.edu/sites/poultry/California\\_Poultry\\_Census/](http://ucanr.edu/sites/poultry/California_Poultry_Census/)



# Poultry Ponderings Newsletter

- To keep up-to-date on poultry related work at the University of California, please email Dr. Maurice Pitesky at [mepitesky@ucdavis.edu](mailto:mepitesky@ucdavis.edu) to subscribe
- Visit our website to access past newsletters at <http://ucanr.edu/sites/poultry/PP/>



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**Resources**

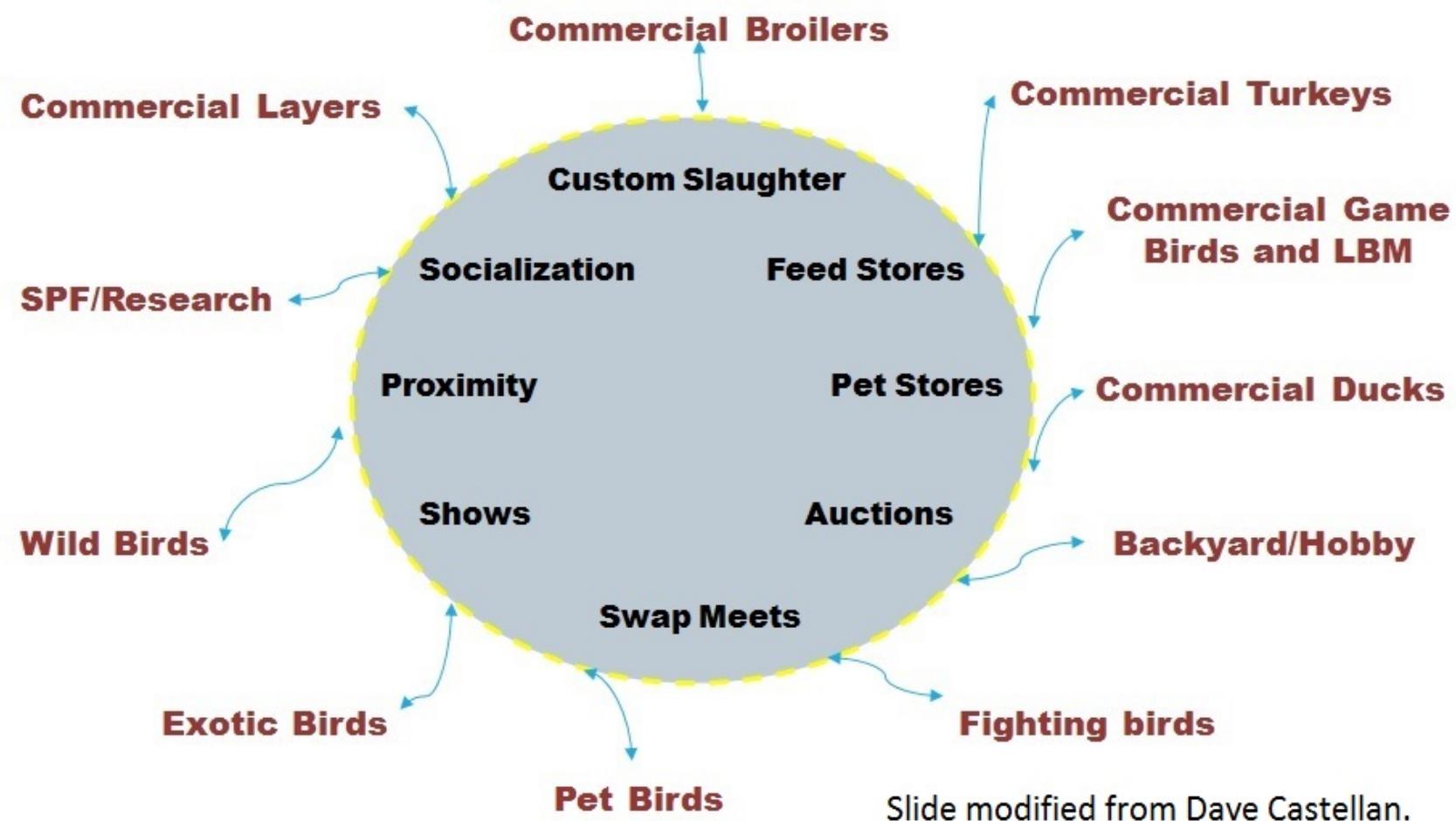
**Newsletter**

To subscribe to our quarterly newsletter summarizing poultry related work at the University of California, please email Dr. Maurice Pitesky at [mepitesky@ucdavis.edu](mailto:mepitesky@ucdavis.edu).

**Edition 1 Winter 2014**

**Edition 2 Spring 2014**

**Edition 3 Fall 2014**



Slide modified from Dave Castellan.

## Biosecurity:

A set of management practices designed to help reduce the introduction and spread of disease-causing organisms onto and between farms.

# There is no silver bullet...

- Need to use a **combination** of management practices to maximize efforts
- Disease in a flock can affect livability, decrease productivity, and increase costs (ie. medications, vaccinations) that result in economic loss
- **Many poultry diseases do not have a cure making prevention key!**
- But keep in mind that it is impossible to eliminate risk completely





# Wildlife Control

# Shade/Shelter Structure

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- Birds can go underneath and escape predators
- Makes it harder for the predators and discourages them from trying again
- Anything that can make the farm less attractive overall will help keep carriers of disease away



# Wildlife on Our Pasture

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- Geese on our pasture are very concerning because of the potential of disease transmission
- Even after they leave, the fomites they leave behind are still capable of spreading disease (ie. feathers, droppings)
- Examples include Avian Influenza and Salmonella
- Can persist up to months in the environment depending on the environmental conditions



# What footprint is this???

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- In any case, not a good sign
- Close to our eggmobile and pasture
- Can carry disease
- Important to remember zoonotic diseases
- Want to protect our birds and ourselves
- Can act as a predator as well
- Good habit to walk around farm and learn about the wildlife in your area



# Predator Repellent Tape

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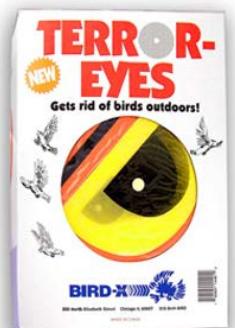
- Relatively inexpensive from \$7 (150ft) to \$27 (100ft)
- Easy to use/install
- attach to 6-8in. string and hang around farm
- Hang strategically in trees, at eye level for ground predators and around enclosures
- Can potentially scare your birds so they should placed farther away from flock
- Humane; flashes in all directions in the sun and makes a noise as it flaps in the wind
- Need to move it to different locations regularly so wildlife wont get acclimated
- Currently testing on our farm



# Terror Eyes Balloon

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- \$9-\$25
- Covers about 1,000 sq. ft.
- Easy to use/install
- Hang strategically in trees, at eye level for ground predators and around enclosures
- Humane; eyes are holographic
- Need to move it around as often as you can to prevent birds from acclimating



# Coyote/Fox Decoy

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- \$30-\$67
- Also, easy to use/install
- Humane
- Must moved around to be effective (consider changing position daily); birds can start to catch on
  - May be why some reviews are poor, not being used properly.
- Need about one decoy per  $\frac{1}{4}$  acre
- Currently testing this on our farm



# Propane Cannon

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- \$300-\$600
- Propane tank ~\$20
- Produces loud bangs, frequency depends on the model
- Need to consider neighbors before buying, noise could be too loud
- Most effective when wildlife such as geese, deer and coyotes have other places to go
- One person should be responsible for maintaining it and should follow strict biosecurity protocol
- Wear PPE and boots specifically for that task



# Electronic Bird Repellents

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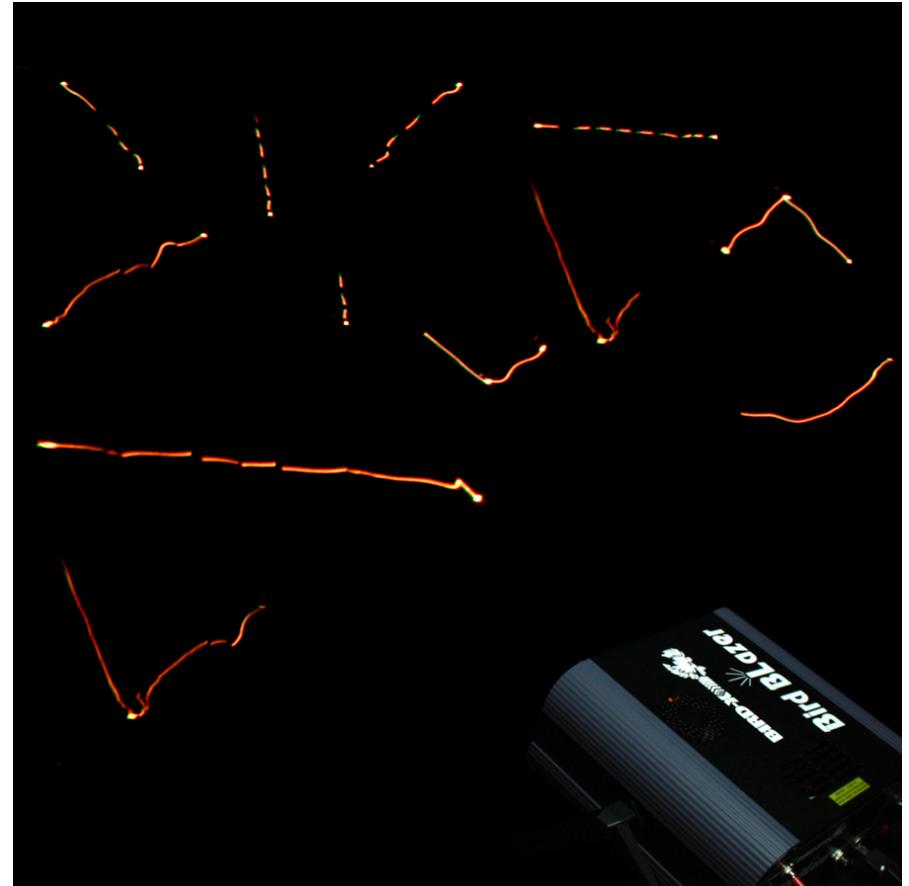
- \$55-\$3,500
- Uses combinations of sounds to repel them
- Distress and alarm calls made by common problem birds
- Natural predator sounds
- Noises that are irritating to birds
- Some models let you customize the sounds for your specific problem birds, more expensive though



# Bird-X Lasers

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- ~\$1,200-\$1,400
- Covers up to ~10,000 sq. ft.
- Multi-colored and changes patterns to prevent the birds from acclimating
- Need to make sure it is allowed on property; Federal Aviation Administration regulations may not allow if too close to airport
- Our farm is close to an airport so we decided against it
- But it is a humane and easy to install tool





Structural Features that Deter Wildlife from Entering our Eggmobile

# Wire Mesh

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- Recommended because it is thick and wildlife (ie. mice, rats, skunks, opossums) cannot break through
- Size of squares should be no bigger than  $\frac{3}{4}$  in. sq.
- The thicker and closer together the squares are, the better
- Our eggmobile has thick wire mesh that overlaps well with the frame
- Hard to get in through the layers



# Eggmobile Floor

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- Solid bottom floor helps keep wildlife out
- Want to make it hard for them to get in so they get discouraged
- Once they get in, they will keep trying to come back



# Important Differences

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## MICE

- Mainly vegetarian
- Shy; tend to avoid contact with humans
- Not adequate swimmers
- Can drink water less frequently
- Nest site ~10ft. to 30ft. from food source
- Conservative behavior; tend to follow the same tendencies (ie. same feeding routes)



## RATS

- Eat a wider range of foods, such as eggs, birds, small animals
- Curious, less shy
- Good swimmers; willing to swim in order to reach food or harborage
- Require water daily
- Nest site ~50ft. to 100ft. from food source
- Will change behavior if find better food or shelter



# Traps

- Place every 25ft. along the high-traffic spots and along potential runways (ie. walls, beams)
- Should also move some around since rats can change routes regularly
- Rats tend to avoid traps with another rat inside so need to clean them out after one capture
- Mouse traps can be checked every two-weeks; can capture multiple with one trap
- Check them regularly and keep good records of how many rodents have been captured to make sure they are working and to assess how severe the infestation is
- Rat infestation trickier to asses since they are harder to trap
- So need to actively look for signs of them (ie. feces, chewing marks, burrows, fur, tracks)



# Restrict Access to Feed

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- If they can't access feed, they will nest somewhere else
- Like to nest near food and shelter
- Make sure to clean up spilled feed as it can attract them and then they will keep coming back
- Mice in particular don't like to change diet and will keep coming back
- Rats more willing to look for other food sources



# Buffer Zone around Pasture Fence

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- Buffer zone between fencing and pasture can help make weak spots/signs of entries more visible
- Rodents dislike digging through gravel
- So under gaps/weak spots in our fence, we will add gravel to discourage them from digging
- Our buffer zone is 20ft. long



# Electrical Fence

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- Coyotes and foxes are around our area
- So installing an electrical fence is really important
- Will help deter other wildlife like raccoons, possums from entering as well
- Will have to make sure it has good charge and that it is working regularly
- Make sure grass is not close to the fence as it can affect the charge circulation
- Walk along the fence once a week



# Lethal Control

- Rodenticides can be tricky to use
- Restrictions and limitations can apply (ie. Vitamin D3 can only be used for mouse control)
- Anticoagulants not associated with bait shyness
- Toxicants (ie. zinc phosphide) are associated with bait shyness
- Non-anticoagulants (ie. zinc phosphide, bromethalin and Vit. D3) recommended for big clean outs
- Motomco has really good resources on rodent control



The image shows a screenshot of the Motomco Biosecurity Rodent Control System website. The header features the Motomco logo and the text "BIOSECURITY RODENT CONTROL SYSTEM". Below the header, a sub-headline states: "No biosecurity initiative is complete without the implementation of a comprehensive rodent control program." The page is divided into several sections: "Inspection" (with images of droppings, burrows, gnaw marks, and rub marks), "Rodent Identification" (with images of Norway Rats, Roof Rats, and House Mice), "Sanitation & Harborage Reduction" (with images of cleaning up spilled feed, removing debris, and maintaining a 3-foot sterile zone), "Baiting Strategies" (with a diagram showing the use of HAWK, JAGUAR, and RAMPAGE baits over 6, 4, and 2 months respectively), and "Exterior Baiting" and "Interior Baiting" sections with specific placement guidelines.

# Planning Ahead for Extreme Cases

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- Coming up with a plan for the worst case scenario (ie. Coyote, fox problem) beforehand can go a long way
- Contact wildlife services or a wildlife specialist to come up with an appropriate protocol
- Knowing what to do in a timely manner can be difference between saving a few birds and saving most of your flock
- Prevention and preparedness is key!



# Questions?

