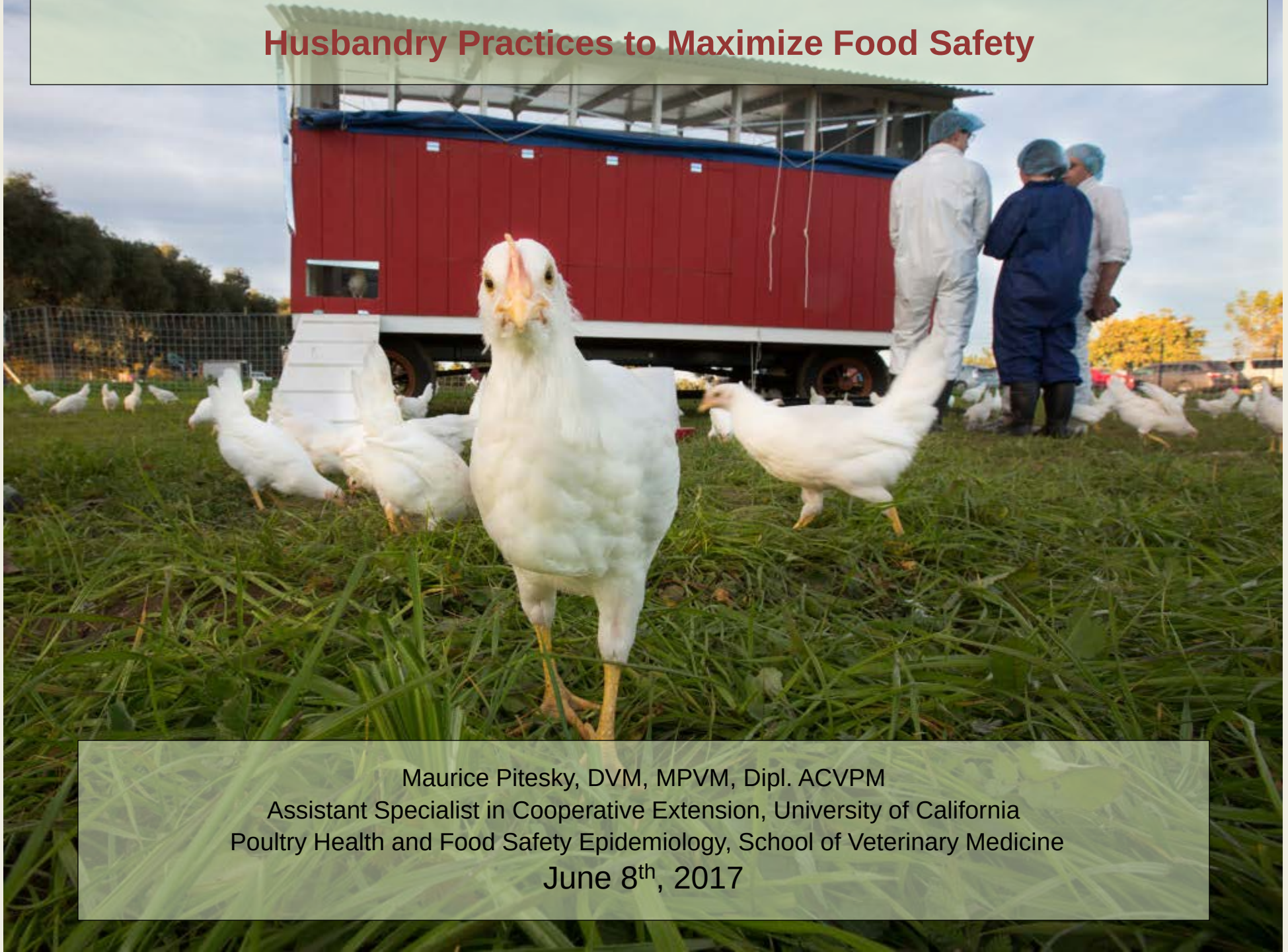
Husbandry Practices to Maximize Food Safety



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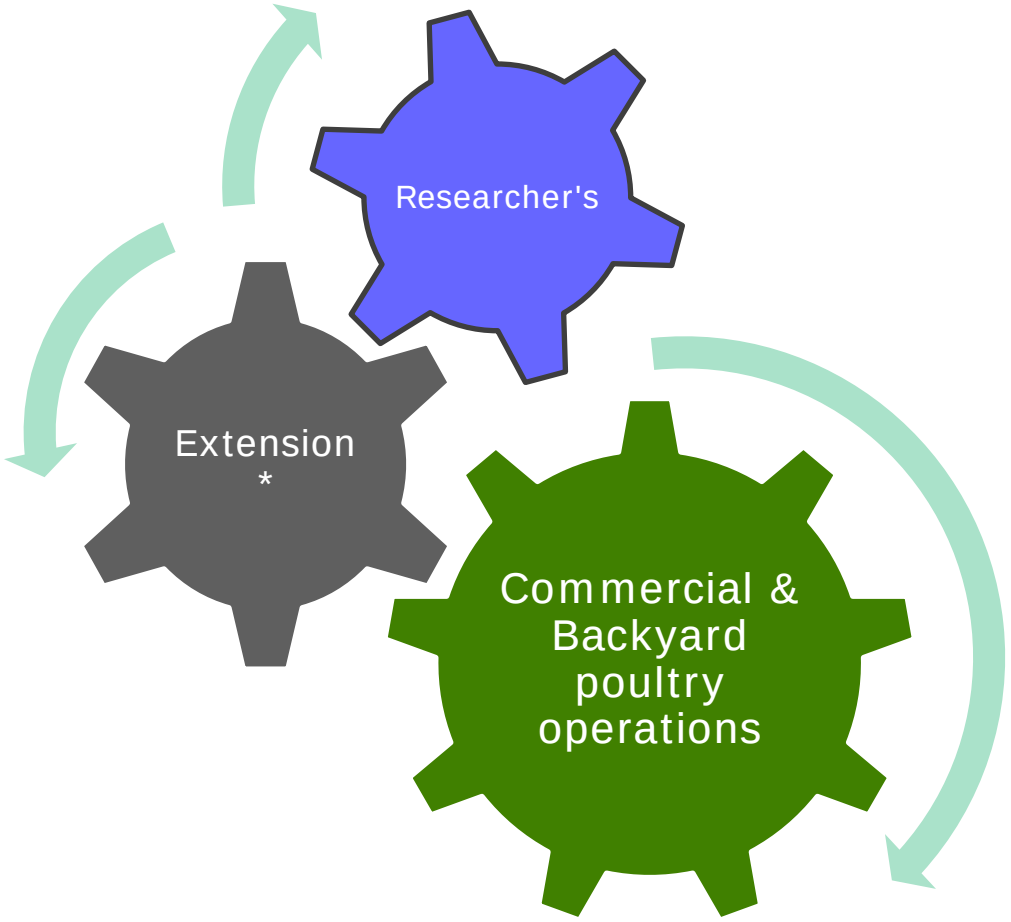
Poultry Health and Food Safety Epidemiology, School of Veterinary Medicine

June 8th, 2017

Questions?

What is Extension?



Mission Statement:
Using UC Research capabilities to help deliver healthy food systems, environments and communities

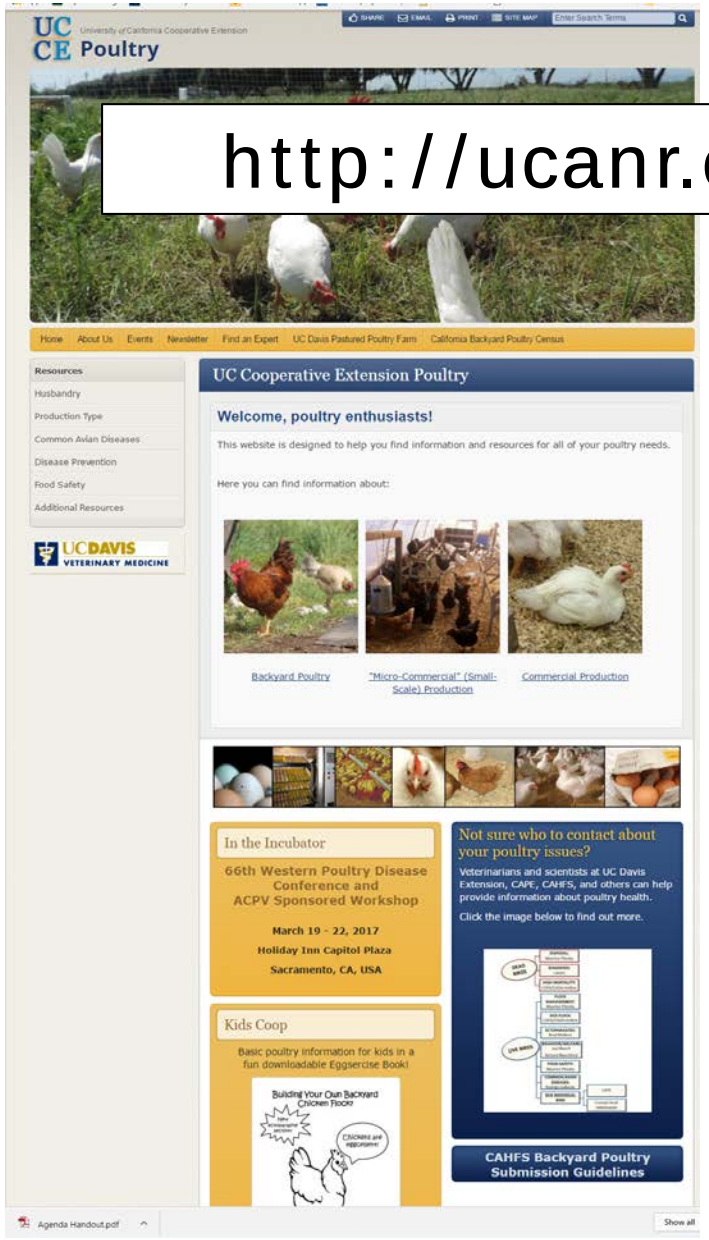
- 200 locally based CE advisors and specialists
- 57 local offices
- 130 campus based CE specialists
- 9 research and extension
- centers
- 700 academic researchers

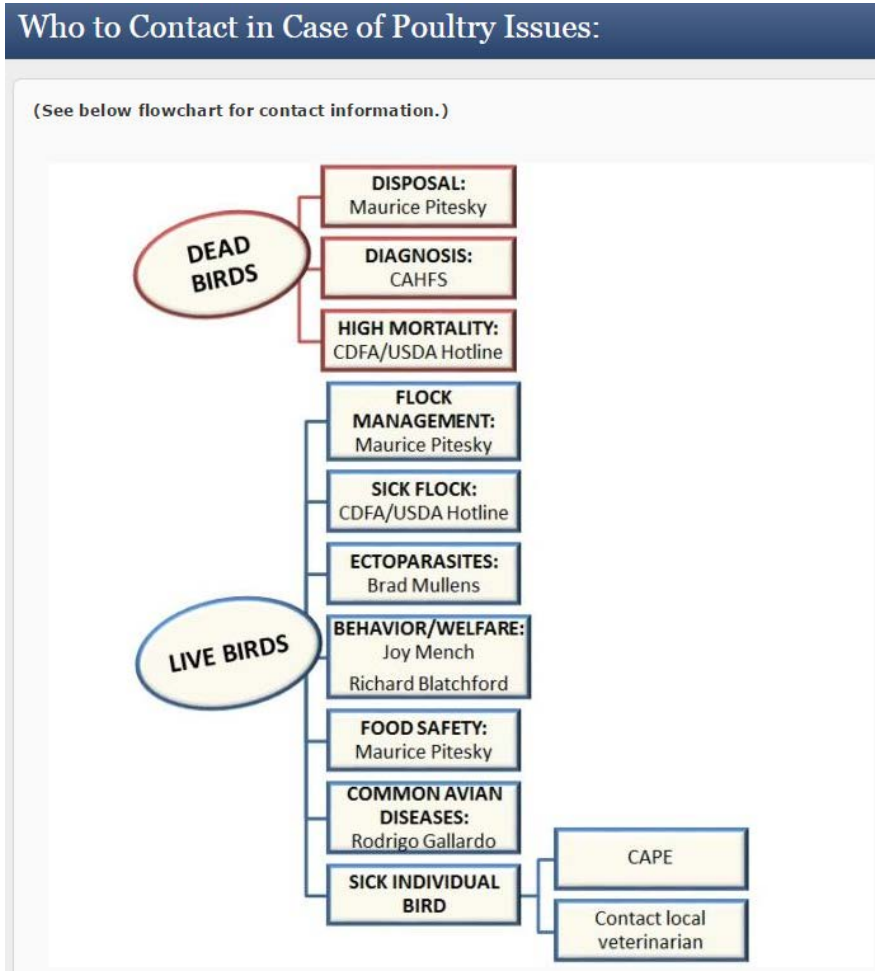
* Extension specialists, researchers and Farm Advisors

http://ucanr.edu/

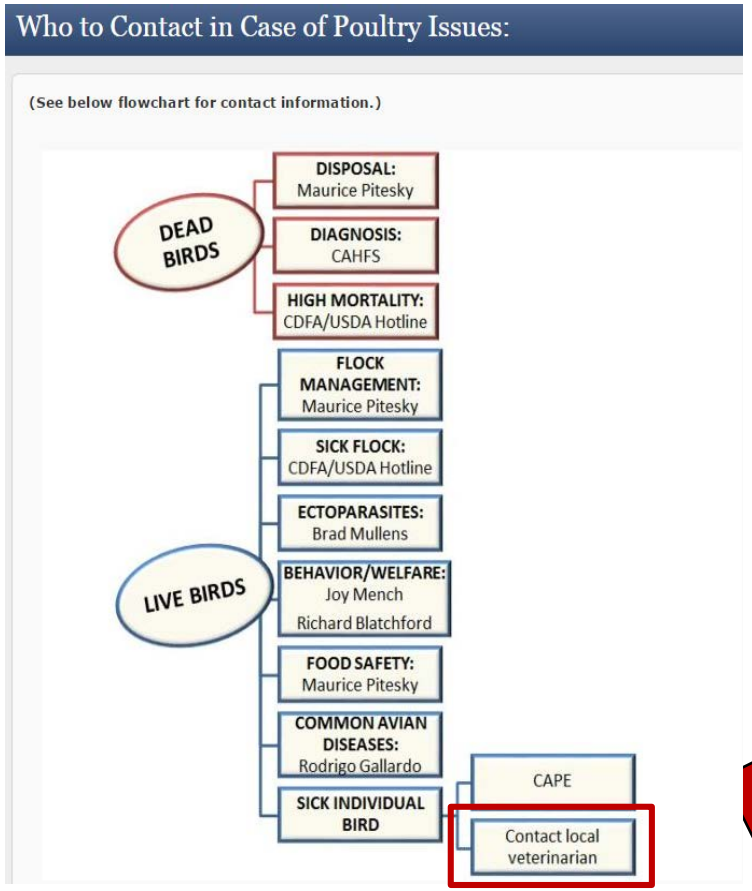
New UCCE Poultry Website

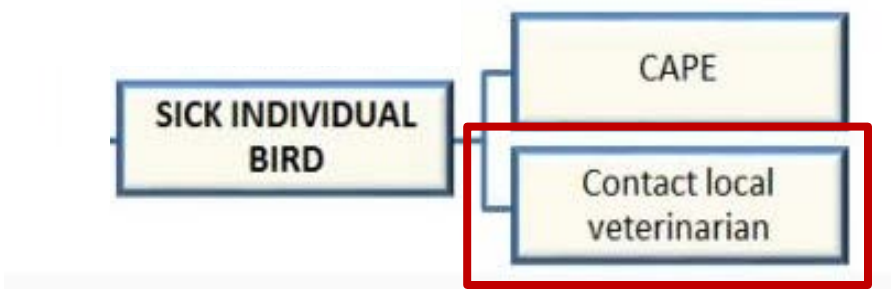
http://ucanr.edu/sites/poultry/





Need a Veterinarian Who Works with Poultry???





Currently we have over 20 veterinarians in 15 California counties

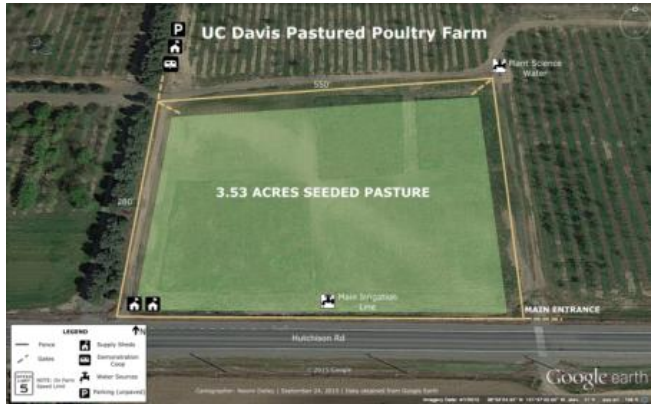
What is the UC Davis Pastured Poultry Farm?

Innovation, Research and **Outreach** hub for:

- Pastured poultry and free-range commercial poultry producers
- Researchers/educators
- Auditors and other stakeholders

Our focus in on pastured and free-range systems

Our goal is to improve these systems using practical technology, research and outreach



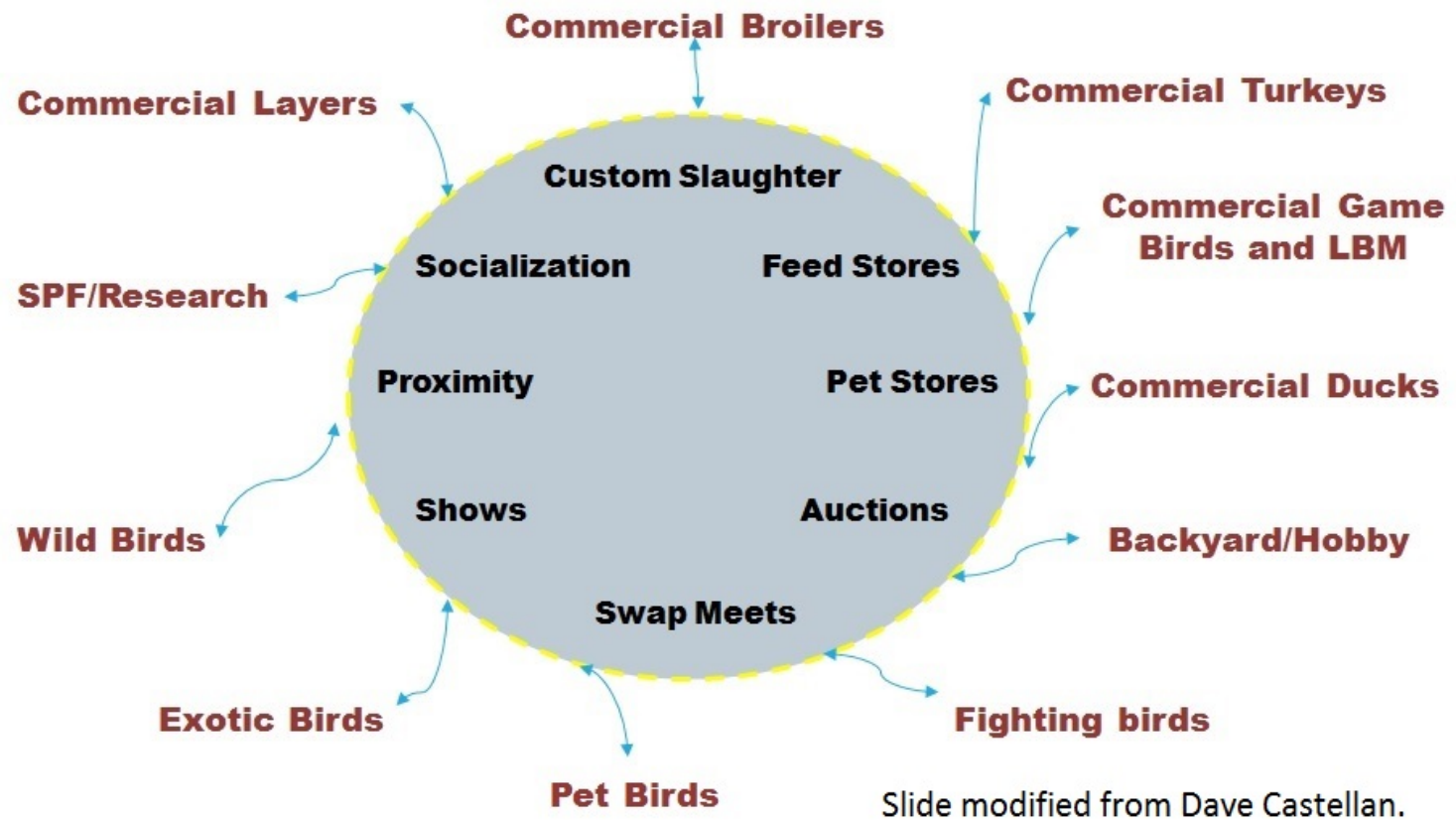
Why do we need a pastured poultry farm?

Farmers want to know about:

Food safety
Regulations
Production
Physiology (molting etc)
Welfare
Genetics
Coop design
Equipment
Diseases
Sustainability

Retailers want to make sure that the small farms they contract with are producing healthy food in a sustainable fashion

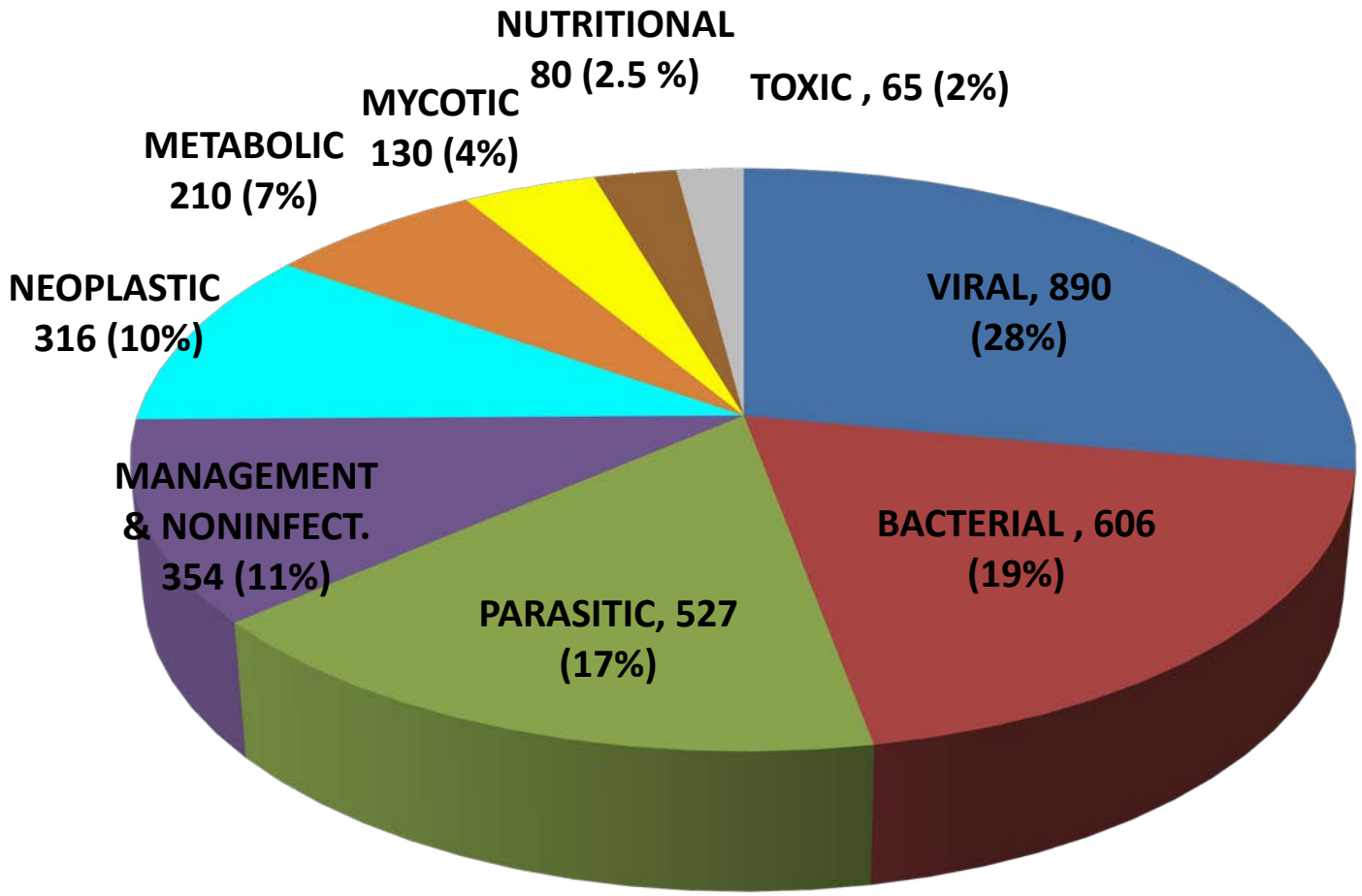
Disease Transmission



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.

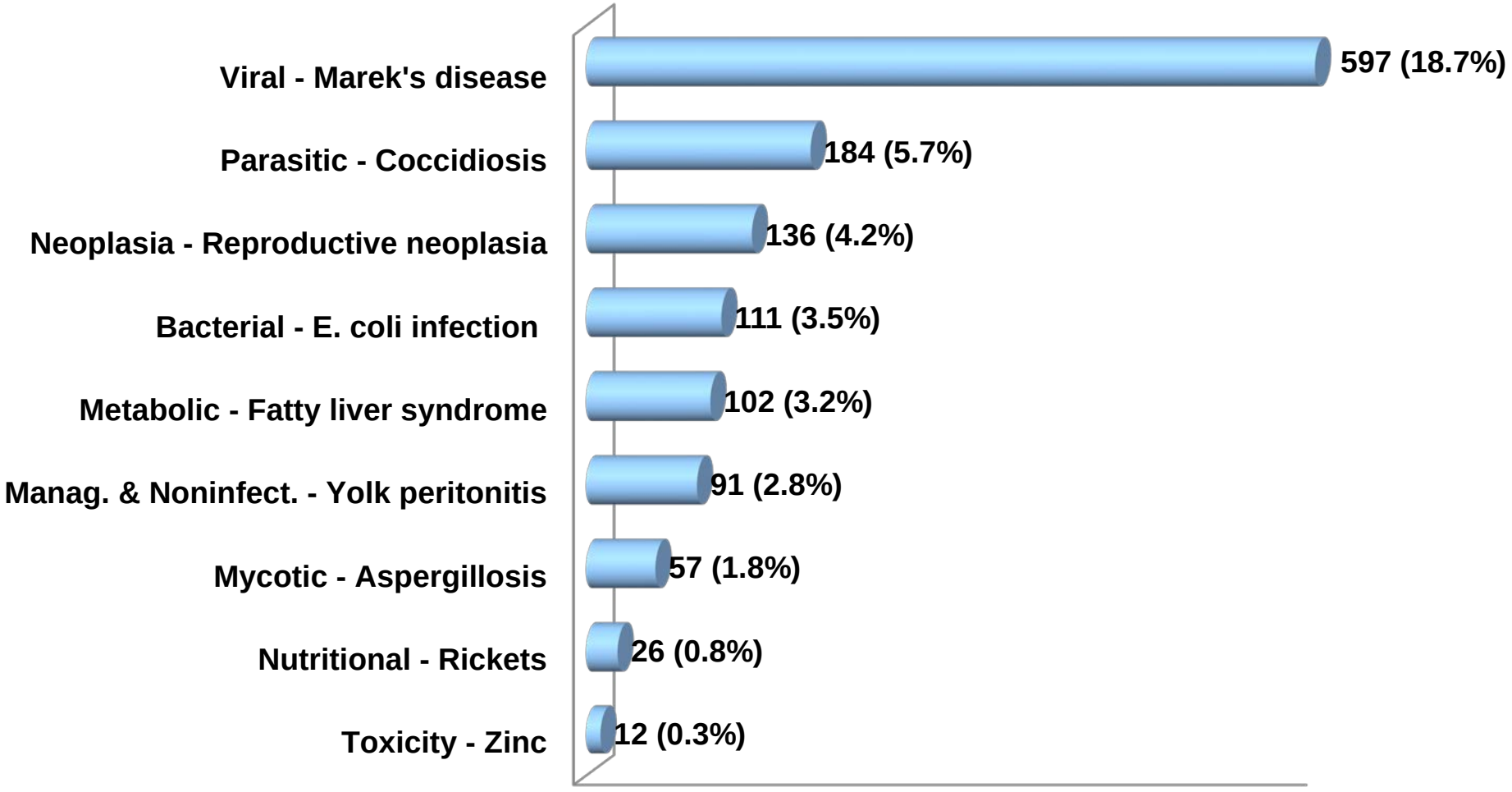
2001-2011 Frequencies and Percentages of Diagnoses by Etiological Types



TOTAL = 3178 DIAGNOSES

Senties, (2012)

2001-2011 Top Backyard Poultry Diseases



Senties, (2012)

So How Do We Prevent Exposure to Those Diseases?
There Is No Silver Bullet…

- Need to use a **combination** of management practices to maximize efforts.

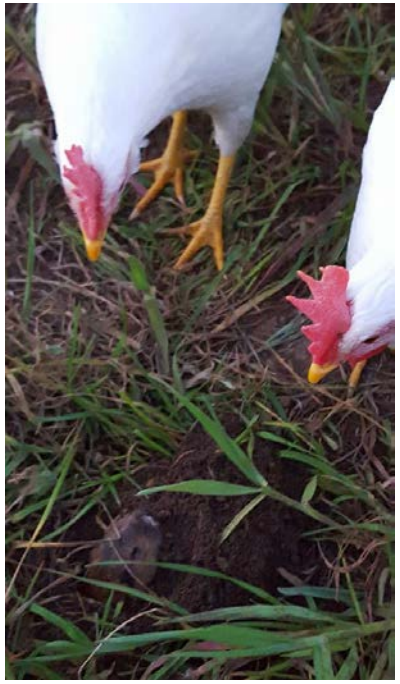
- But keep in mind that it is impossible to eliminate risk completely.

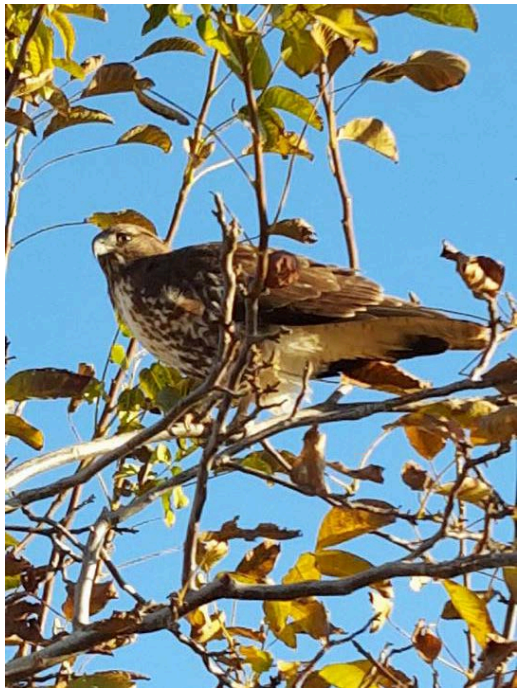
Most poultry diseases do not have a cure making prevention key!

Personal Protective Equipment (PPE)

- Our clothes, glasses and shoes can carry disease-causing agents so wear some type of PPE to reduce the probability of bringing in disease onto and out of the farm.
- PPE include:
  - Hairnets.
  - Coveralls and disposable coveralls for visitors.
  - Rain boots and disposable plastic boots.
- Applied hand sanitizer to our hands before entering the coop area too.

Wildlife





Knowing what you are up against can help you determine what tools and strategies to use and therefore maximize your efforts.

What About At Night?

- We used motion sensor cameras to monitor wildlife during the day and at night.
- Good to keep nocturnal wildlife in mind (ie. opposums, raccoons).

Shade/Shelter Structures

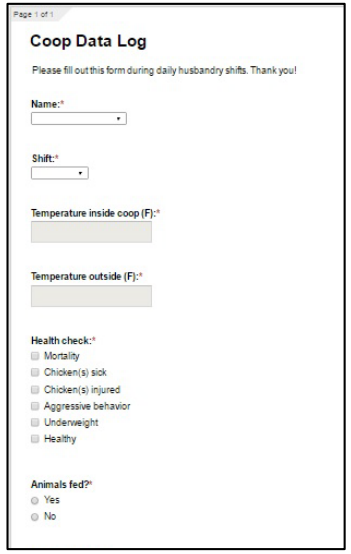
- Birds can go underneath for shade.
- Offers protection from predators.
- For instructions on how to build, visit:

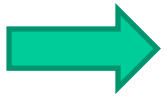
http://ucanr.edu/sites/poultry/files/236853.pdf

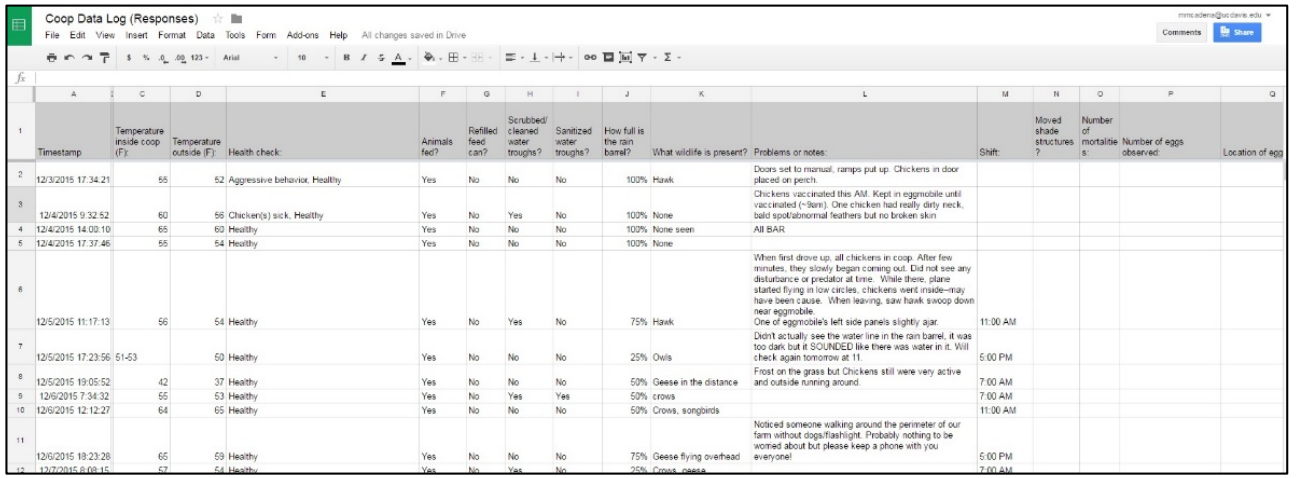
Google Forms For Data Capturing

- We used Google Forms to capture data on husbandry, production, disease status, wildlife etc.

- Detailed instructions on how to set one up available on our website at: http://ucanr.edu/sites/poultry/files/229442.pdf







	A	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Timestamp	Temperature inside coop (F):	Temperature outside (F):	Health check:	Animals fed?	Refilled feed can?	Scrubbed/ cleaned water troughs?	Sanitized water troughs?	How full is the rain barrel?	What wildlife is present?	Problems or notes:	Shift:	Moved shade structures ?	Number of mortalities:	Number of eggs observed:	Location of egg
2	12/3/2015 17:34:21	55	52	Aggressive behavior, Healthy	Yes	No	No	No	100%	Hawk	Doors set to manual, ramps put up. Chickens in door placed on perch.					
3	12/4/2015 9:32:52	60	56	Chicken(s) sick, Healthy	Yes	No	Yes	No	100%	None	Chickens vaccinated this AM. Kept in eggmobile until vaccinated (~9am). One chicken had really dirty neck, bald spot/abnormal feathers but no broken skin					
4	12/4/2015 14:00:10	65	60	Healthy	Yes	No	No	No	100%	None seen	All BAR					
5	12/4/2015 17:37:46	55	54	Healthy	Yes	No	No	No	100%	None						
6	12/5/2015 11:17:13	56	54	Healthy	Yes	No	Yes	No	75%	Hawk	When first drove up, all chickens in coop. After few minutes, they slowly began coming out. Did not see any disturbance or predator at time. While there, plane started flying in low circles, chickens went inside--may have been cause. When leaving, saw hawk swoop down near eggmobile. One of eggmobile's left side panels slightly ajar.	11:00 AM				
7	12/5/2015 17:23:56	51-53	50	Healthy	Yes	No	No	No	25%	Owls	Didn't actually see the water line in the rain barrel, it was too dark but it SOUNDED like there was water in it. Will check again tomorrow at 11.	5:00 PM				
8	12/6/2015 19:05:52	42	37	Healthy	Yes	No	No	No	50%	Geese in the distance	Frost on the grass but Chickens still were very active and outside running around.	7:00 AM				
9	12/6/2015 7:34:32	55	53	Healthy	Yes	No	Yes	Yes	50%	crows		7:00 AM				
10	12/6/2015 12:12:27	64	65	Healthy	Yes	No	No	No	50%	Crows, songbirds		11:00 AM				
11	12/6/2015 18:23:28	65	59	Healthy	Yes	No	No	No	75%	Geese flying overhead	Noticed someone walking around the perimeter of our farm without dogs/flashlight. Probably nothing to be worried about but please keep a phone with you everyone!	5:00 PM				
12	12/7/2015 6:09:15	57	54	Healthy	Yes	No	Yes	No	25%	Crows, geese		7:00 AM				

Predator Repellent Tape

- 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.
- Reviews vary.

Coyote/Fox Decoy

Also, remember fencing!

- $30-$67.
- Also, easy to use/install.
- Humane.
- Must be 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 ¼ acre.

Restrict Access to Feed

- If rodents and other wildlife can't access feed, they will go somewhere else.
- Bungee cord makes the lid hard to take off.
- Make sure to clean up spilled
- No waste feeder: Didn't see waste but birds may have a hard time adjusting to the design if you start with this design mid-flock.

(Facebook pic, 2016)

(My Pet Chicken Blog, 2016)

Important Differences

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

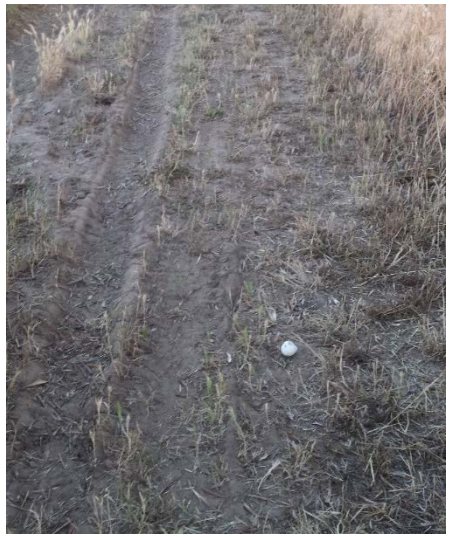
- Eat a wider range of foods, such as eggs, birds, small animals
- Curious, less shy
- Good swimmers; willing to swim in order to reach food or harborage
- Require water daily
- Nest site ~50ft. to 100ft. from food source
- Will change behavior if find better food or shelter

Traps

- Place along the high-traffic spots and along potential runways (ie. walls, beams).
- Should move them 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; mice will still go into the trap even if there's mice inside.
- 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).

Electric Fence

- Portable electric fence help with husbandry and predator control
- Will have to make sure it has good charge and that it is working regularly.
- Walk along the fence once a week.
- Keep the pasture low around the fence to keep the fence circulation going.



Quarantine Pen

- Quarantine new birds for at least 30 days.
- Isolate sick appearing (ie. lethargic, droopy eyes) birds away from the flock.
- Instructions on how to build this specific sick pen available at:

http://ucanr.edu/sites/poultry/files/236853.pdf

Buffer Zone Around Pasture Fence

- Buffer zone between fencing and pasture can help make weak spots/signs of entries more visible and tell you about nearby wildlife.
- Good habit to walk along the perimeter of the fence.

Questions?

"No, *you* back off! I was here before you!"