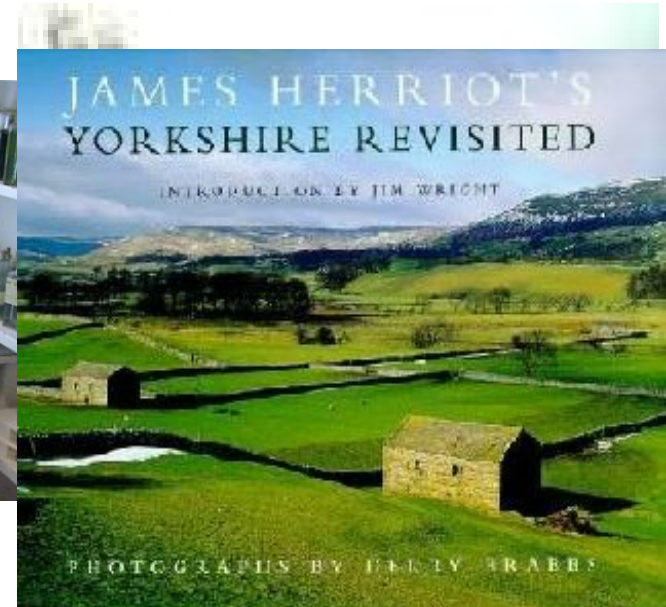
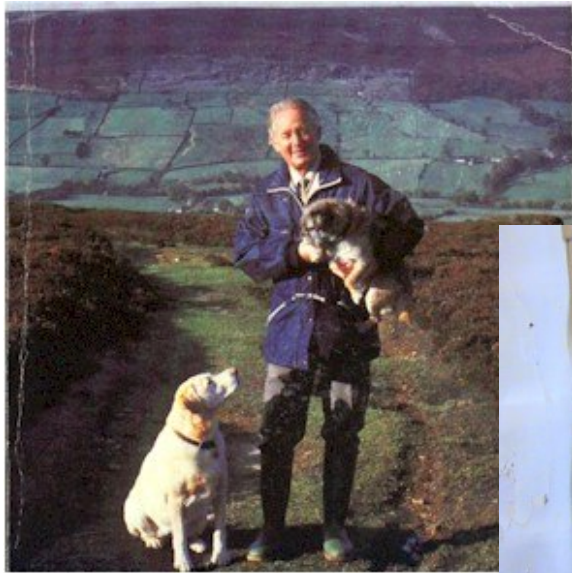


# Beyond James Herriot.....

## ... where the Animal Health Act fits in

David Alves DVM PhD  
Veterinary Science and Policy  
OMAFRA

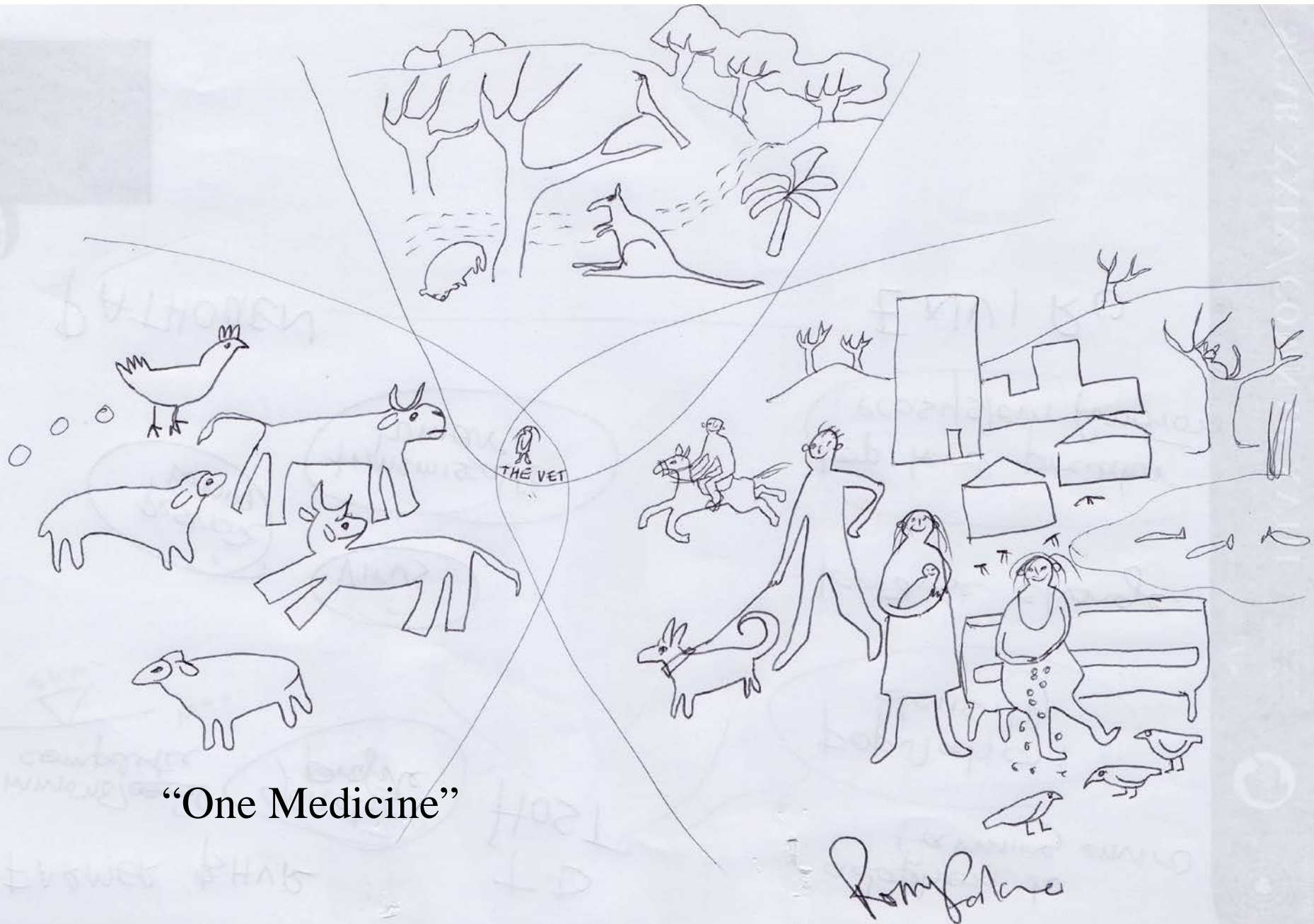


## The Species problem – one animal among many

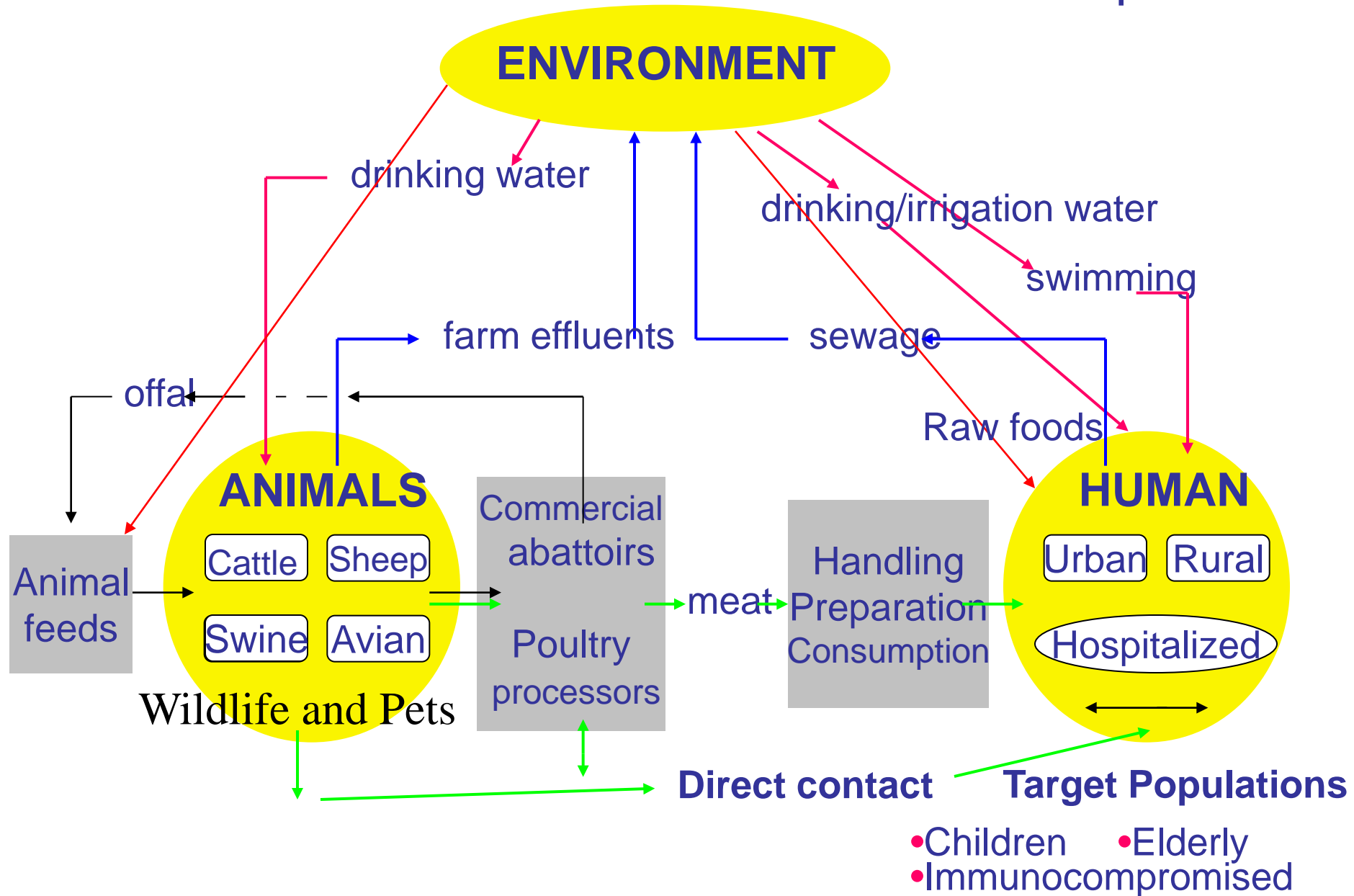




But things get more complicated with changing environments and contacts

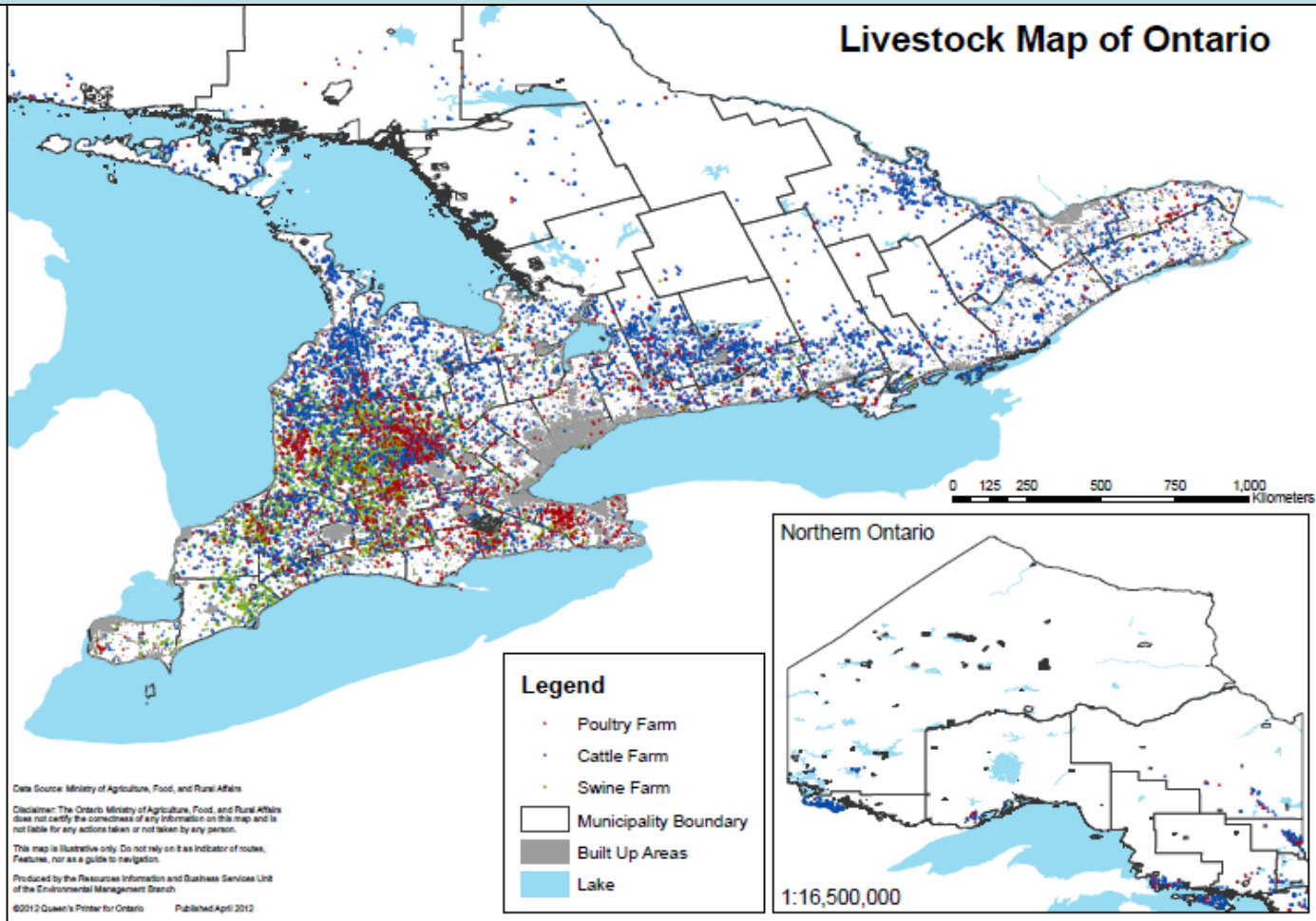


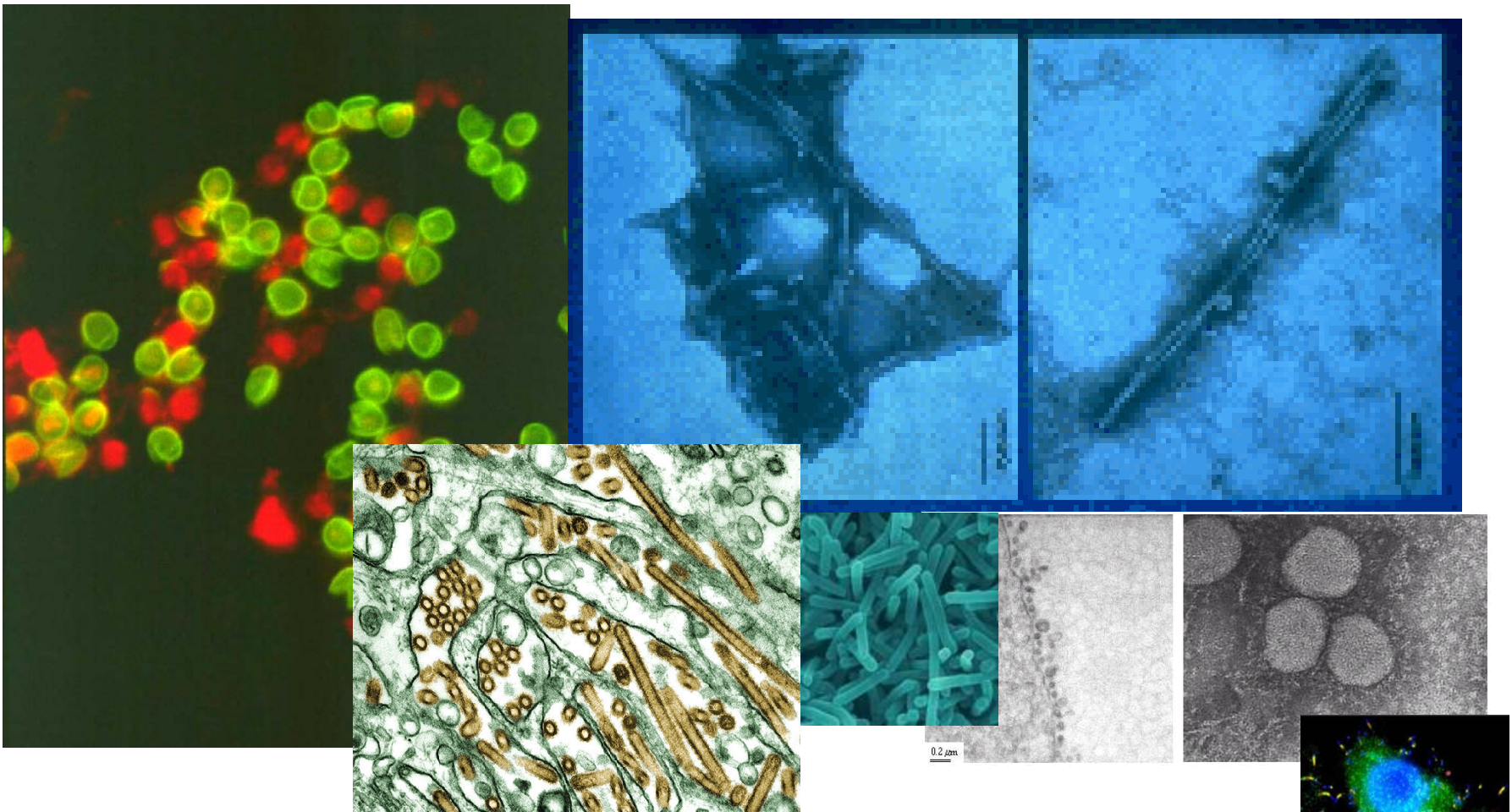
And the connections become even more complicated



# The human – animal – environment interface in Ontario

(40% of the people and 40% of livestock in Canada  
in a relatively small strip of land)





## Pathogens that cross-species

- Most emerging diseases in people
- 60% of all 1461 human diseases
- 5 of top 6 bioterrorism threats

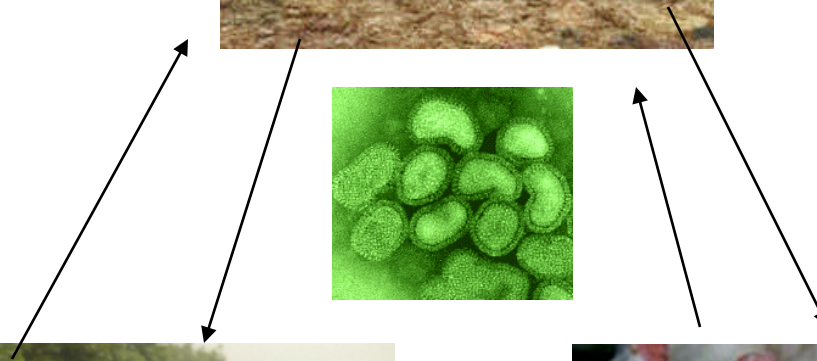
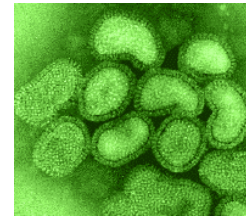
Early warning of more  
risk to people



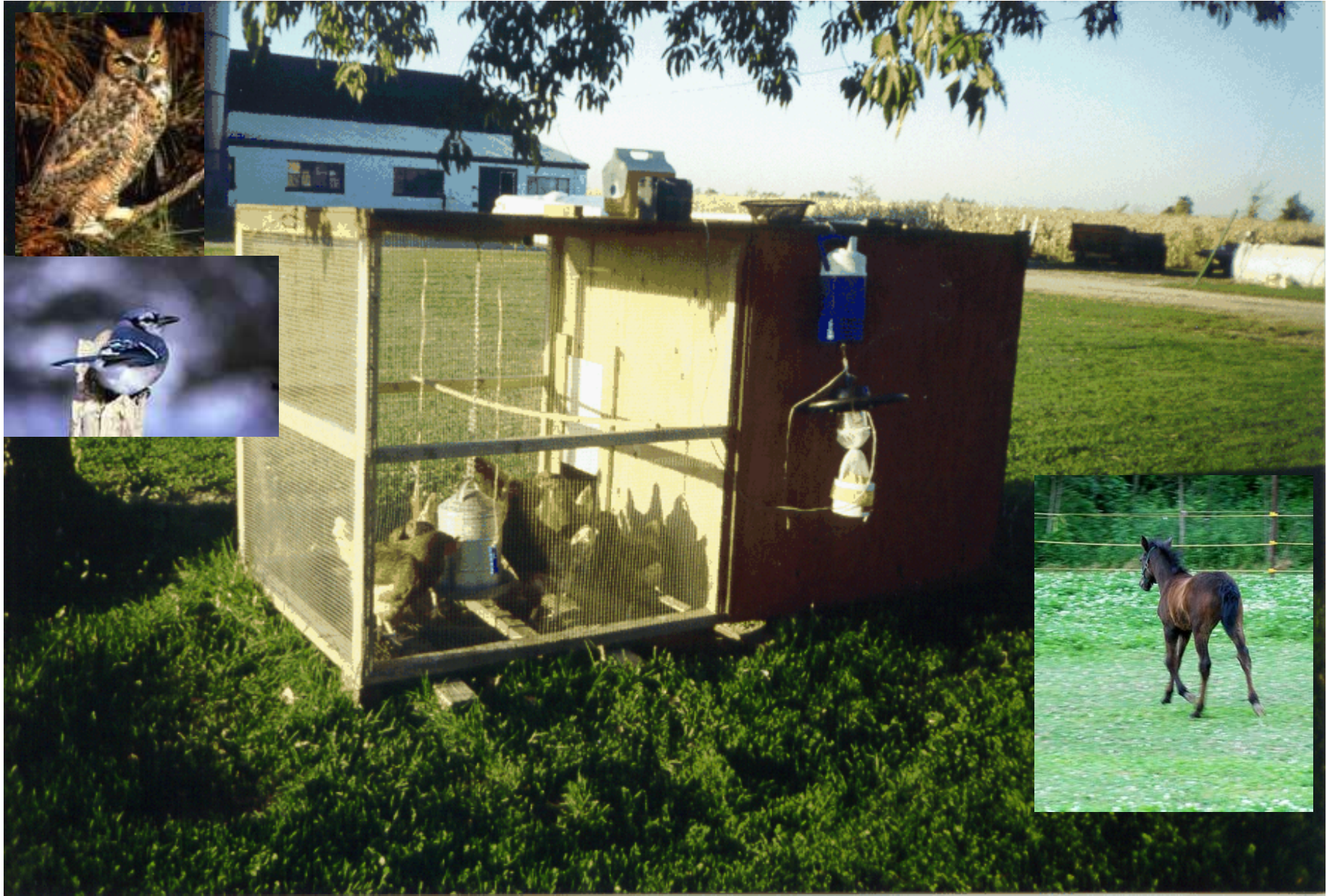
# Influenza

Small outbreaks of “swine flu” and “bird flu” have occurred in Ontario.

Flu is out there...  
Get your free vaccine...  
Practice biosecurity...



When diseases emerge – knowledge is imperfect – changing mosquito vectors in WNV





## A few other themes ....

Everyone is connected – “instant karma” often gets me.

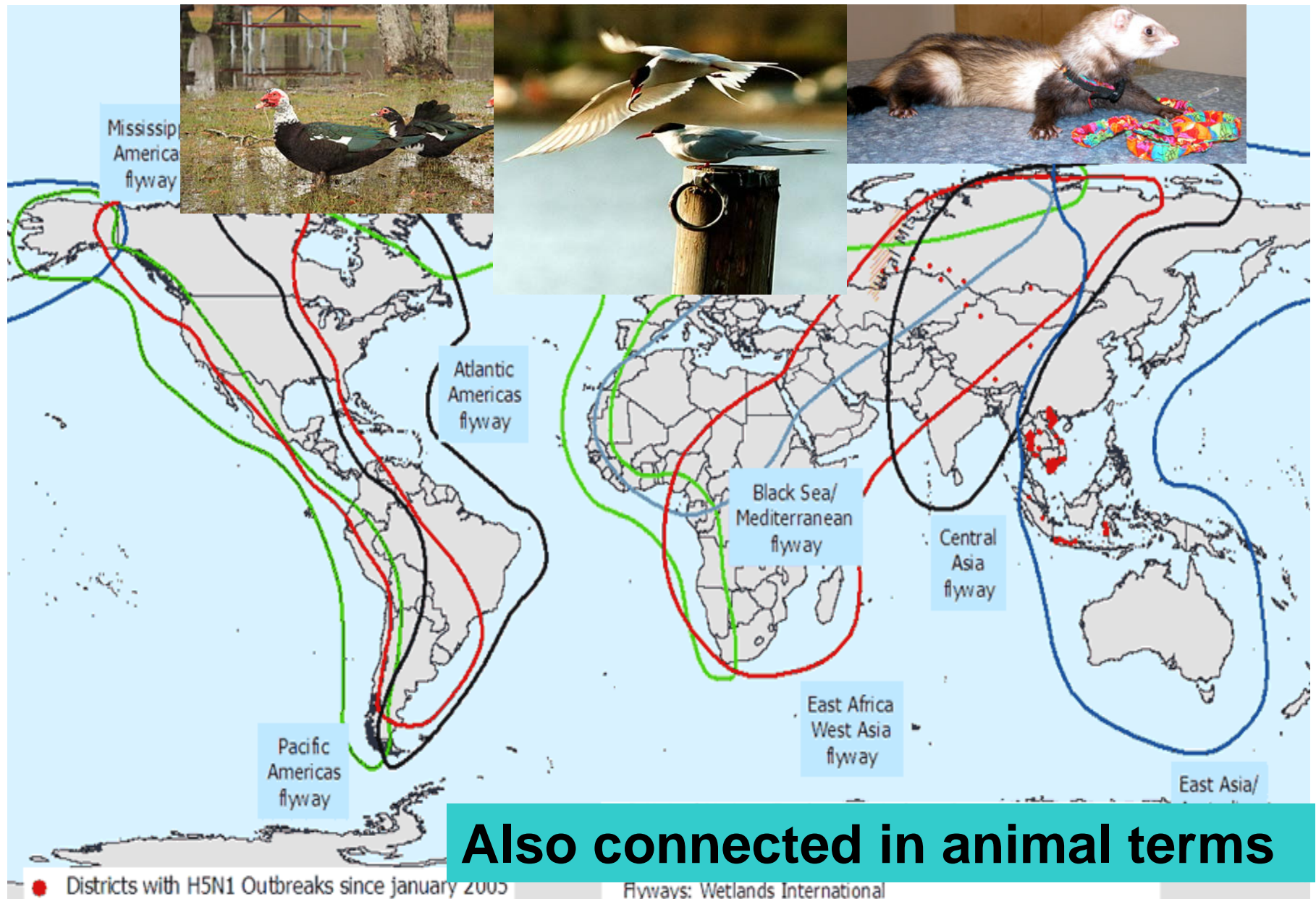
Yet many are disconnected (from farm, food, wildlife, environment, risk).

For many people risk is black and white – full on or full off and everything is an “emergency”.

OMAFRA needs to show “we are on it”

Bugs and drugs don’t respect legislative boundaries – you need many tools in the toolbox – regulatory and non-regulatory including prevention.



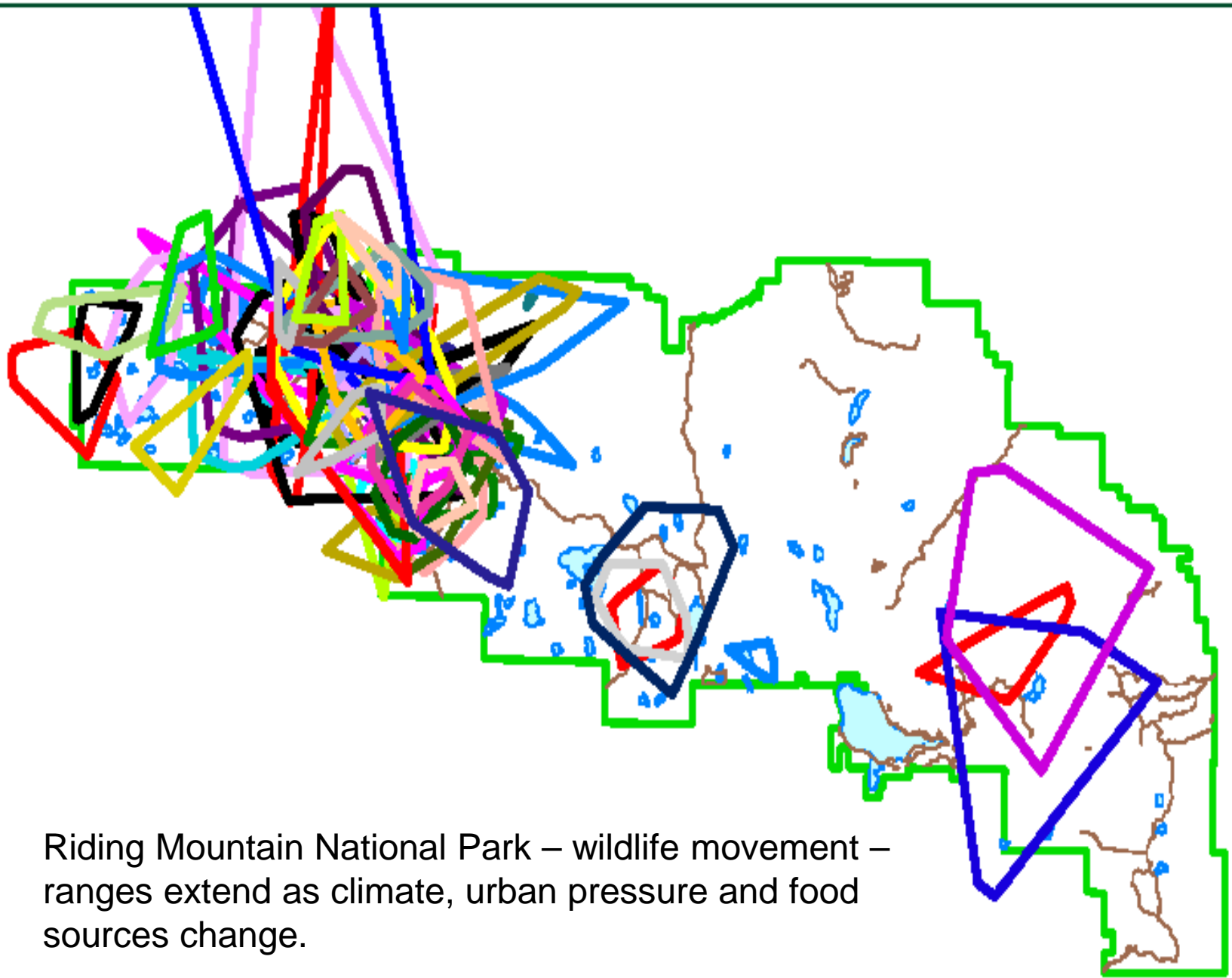






Nipah virus emerged in Malaysia and interrupted trade  
– some of our colleagues went to help out





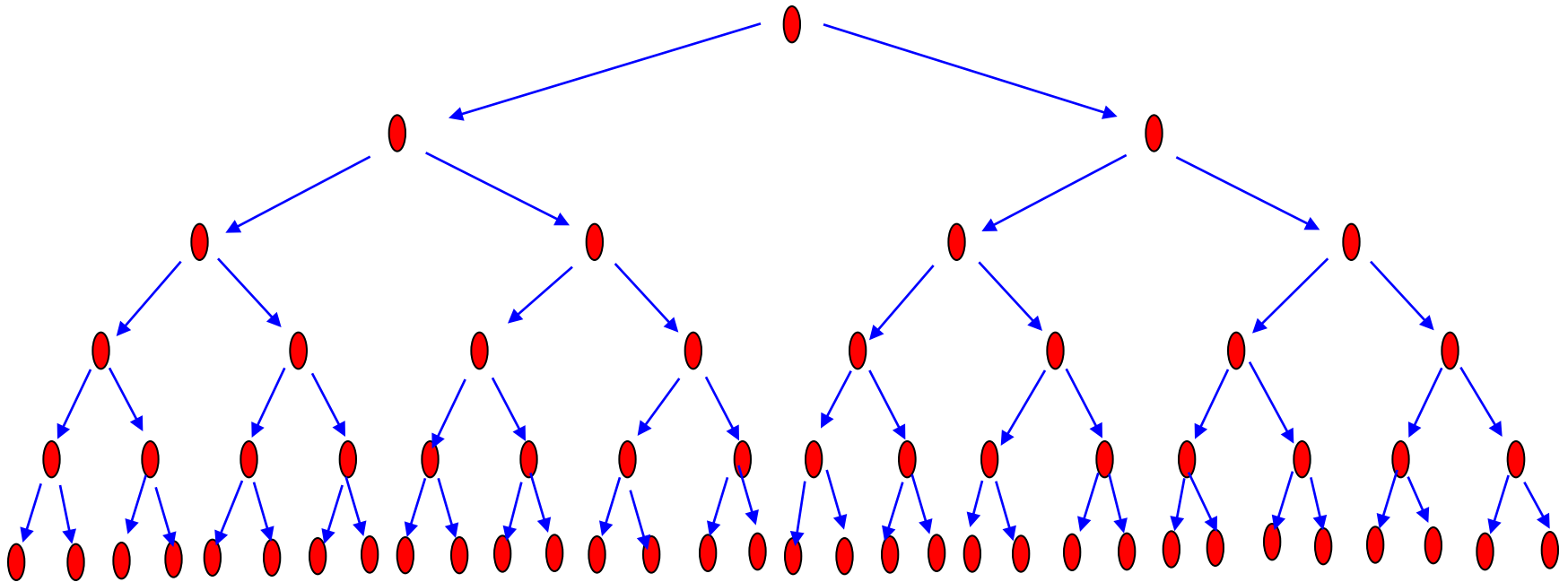
Riding Mountain National Park – wildlife movement –  
ranges extend as climate, urban pressure and food  
sources change.



# Think in exponential terms

## Schematic Diagram: Principles of Disease Spread

---



**However this is an unreal academic model....**

Courtesy Bruce McNab

Modelling can indicate how the complexity of disease spread can grow due to:

- super spreaders or hubs
- there are infected premises you do not know about yet;
- airborne spread?
- wildlife and insect vectors changing?

ALL these affect the emergency management approach

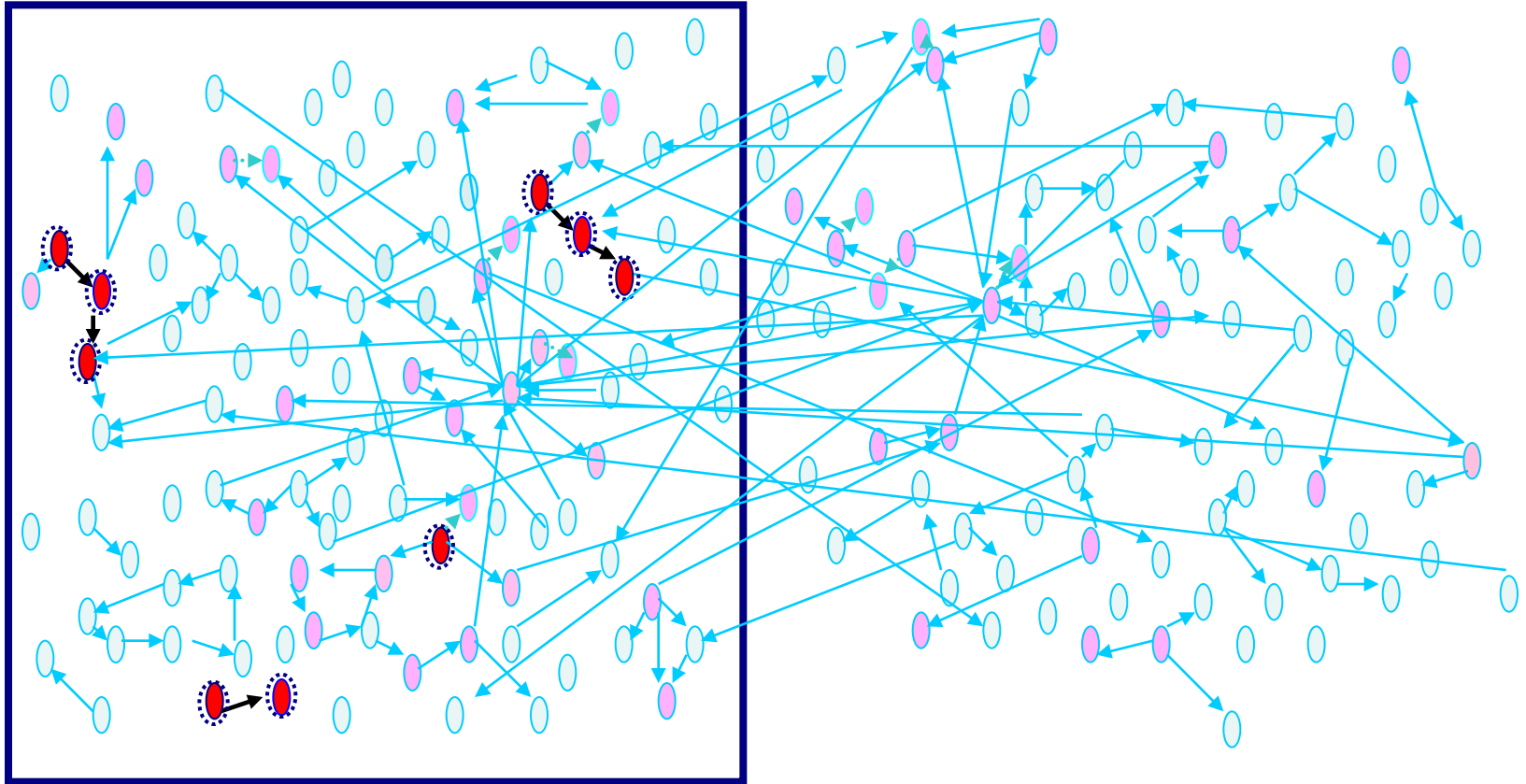
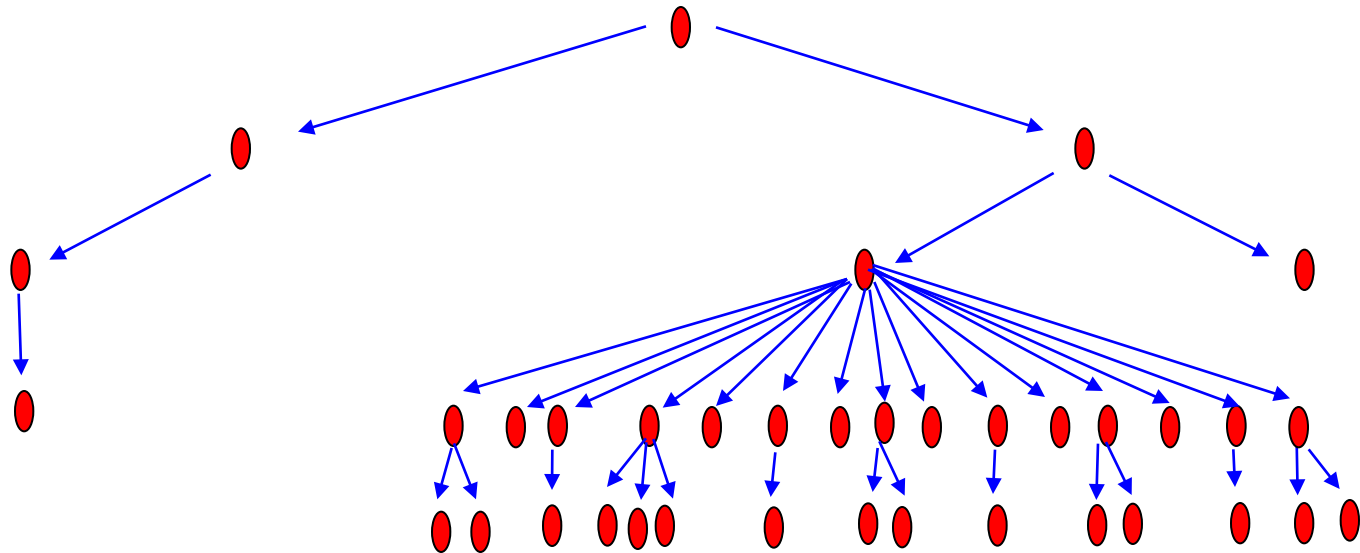


Figure courtesy Bruce McNab



# But things get complicated...

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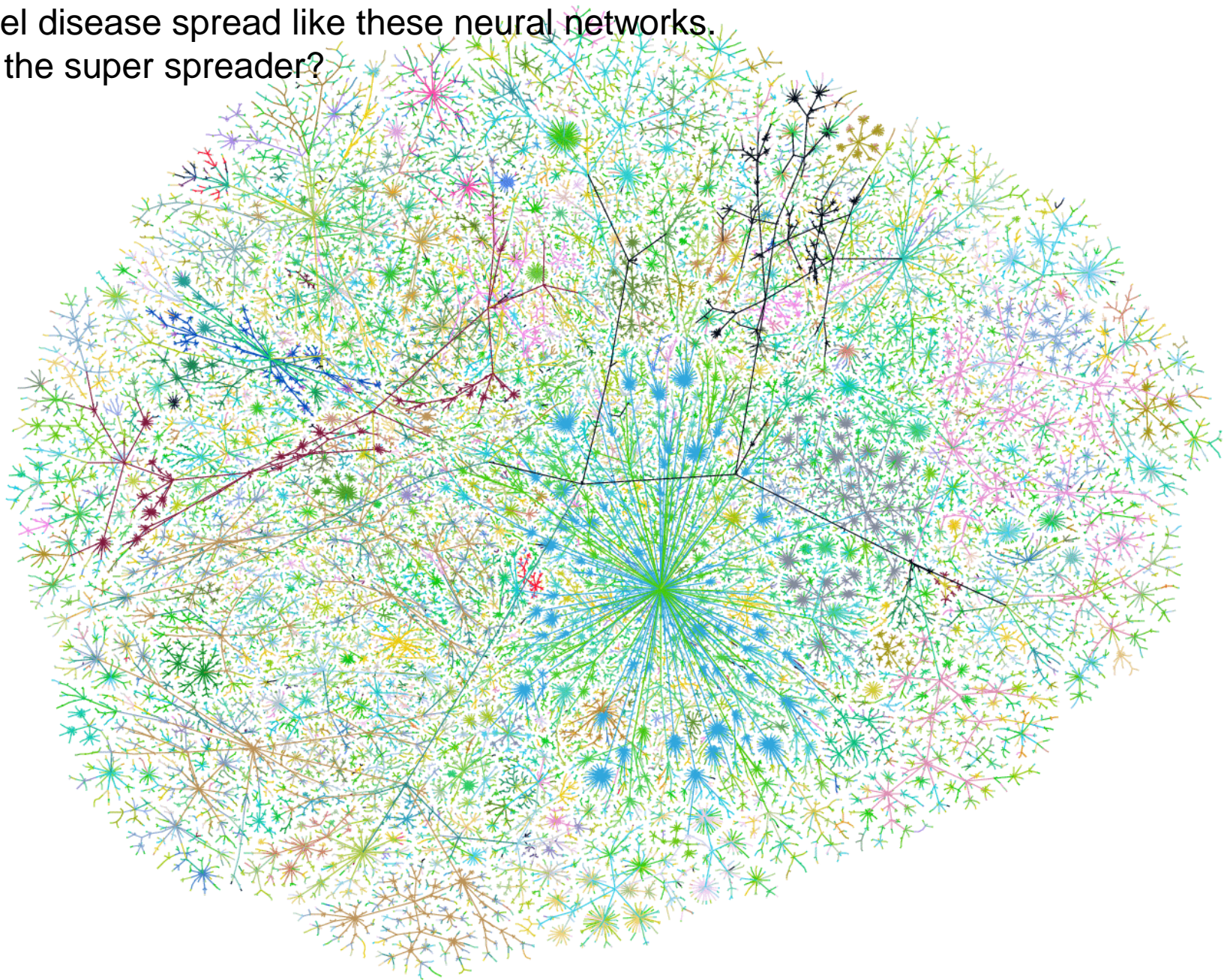
**...when you hit a super-spreader.**

**Seen in FMD, BSE, CWD, Johnes, Flu, E.coli  
SARS**

Figure courtesy Bruce McNab

**And many other infectious agents**

Model disease spread like these neural networks.  
See the super spreader?



Modelling can indicate how the complexity of disease spread can grow due to:

- super spreaders or hubs
- there are infected premises you do not know about yet;
- airborne spread?
- wildlife and insect vectors changing?

ALL these affect the emergency management approach

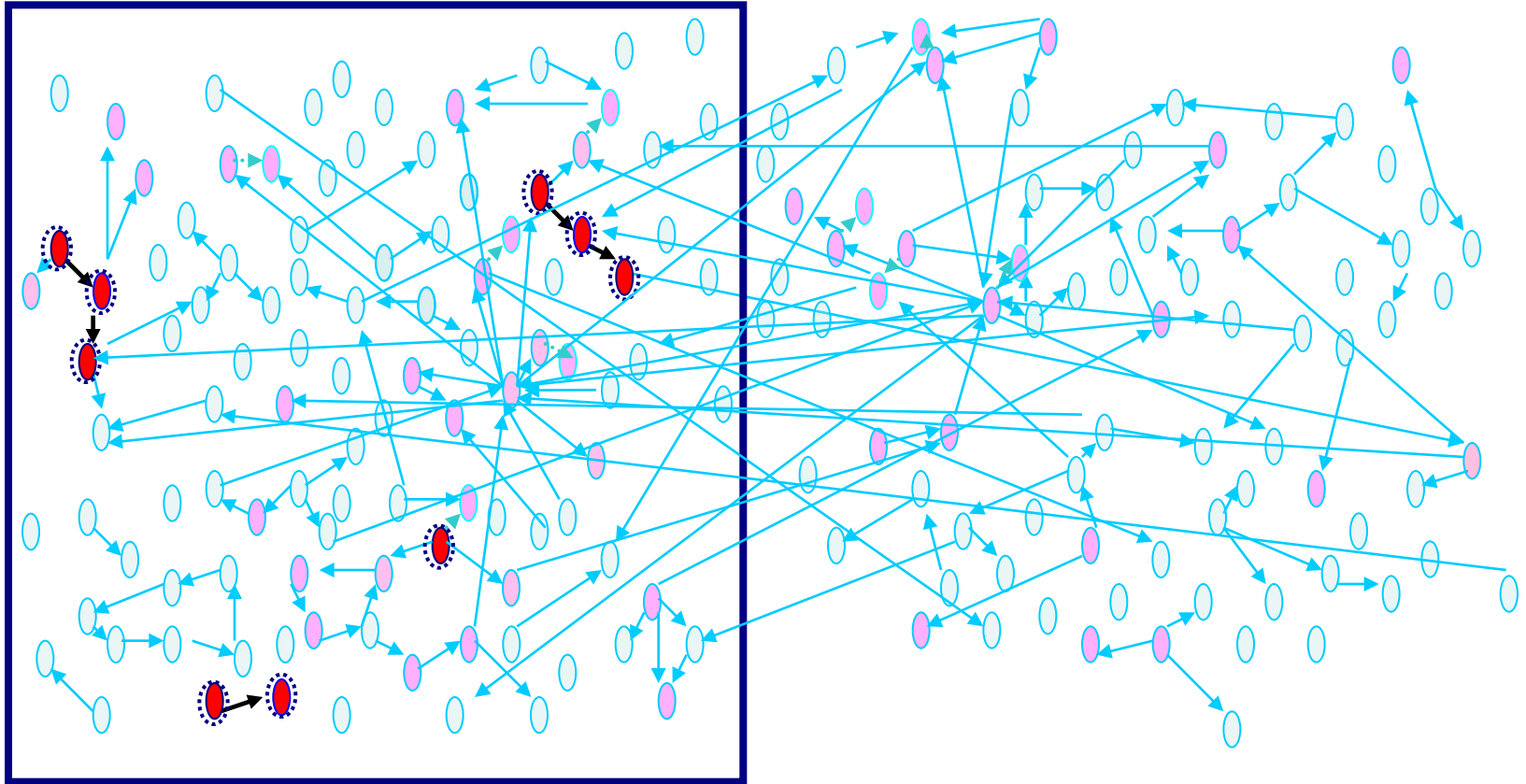
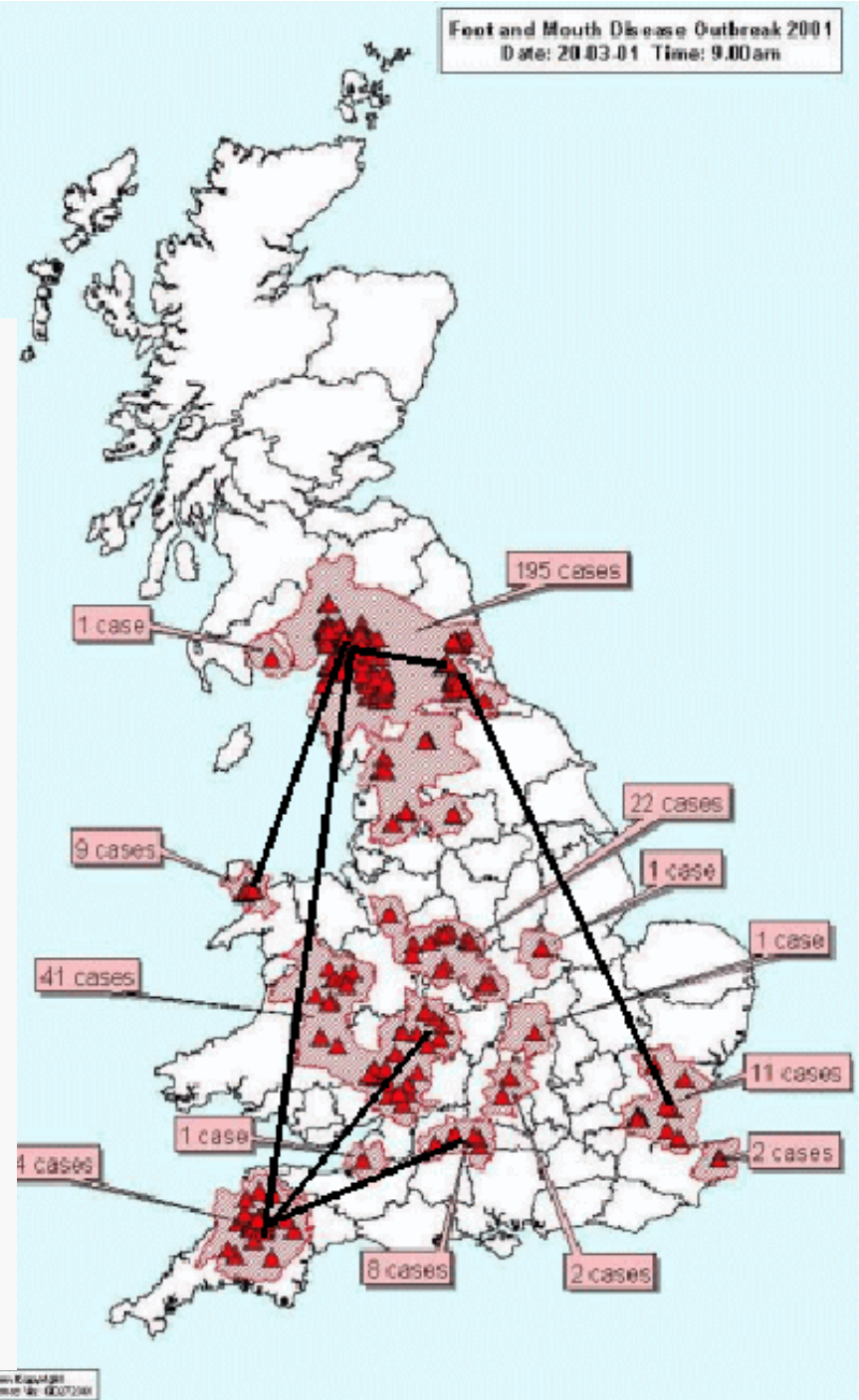
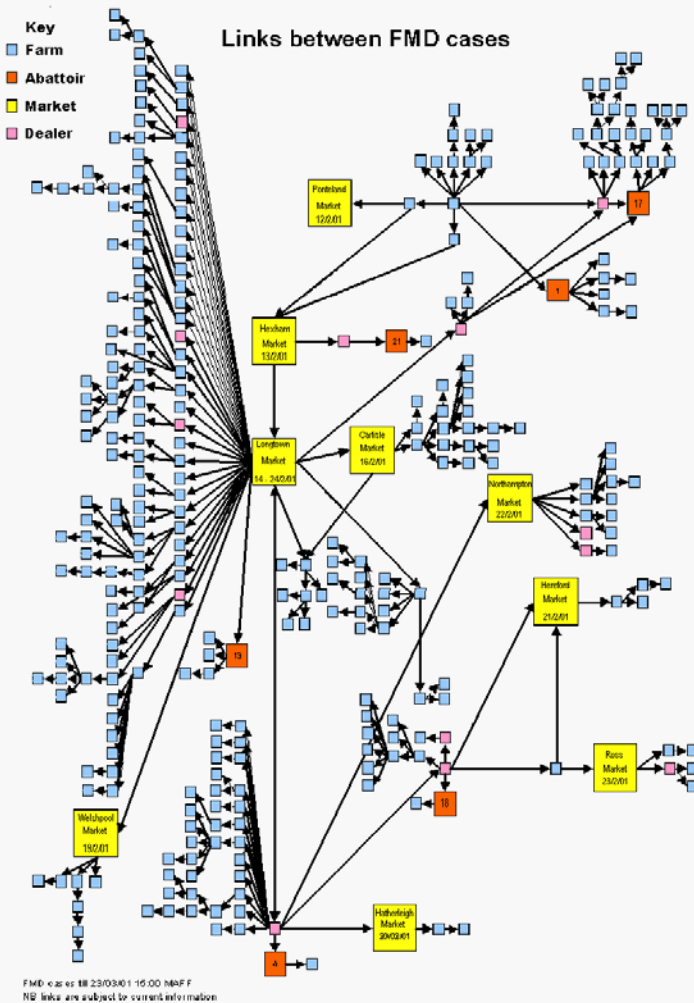


Figure courtesy Bruce McNab



More than a theory...

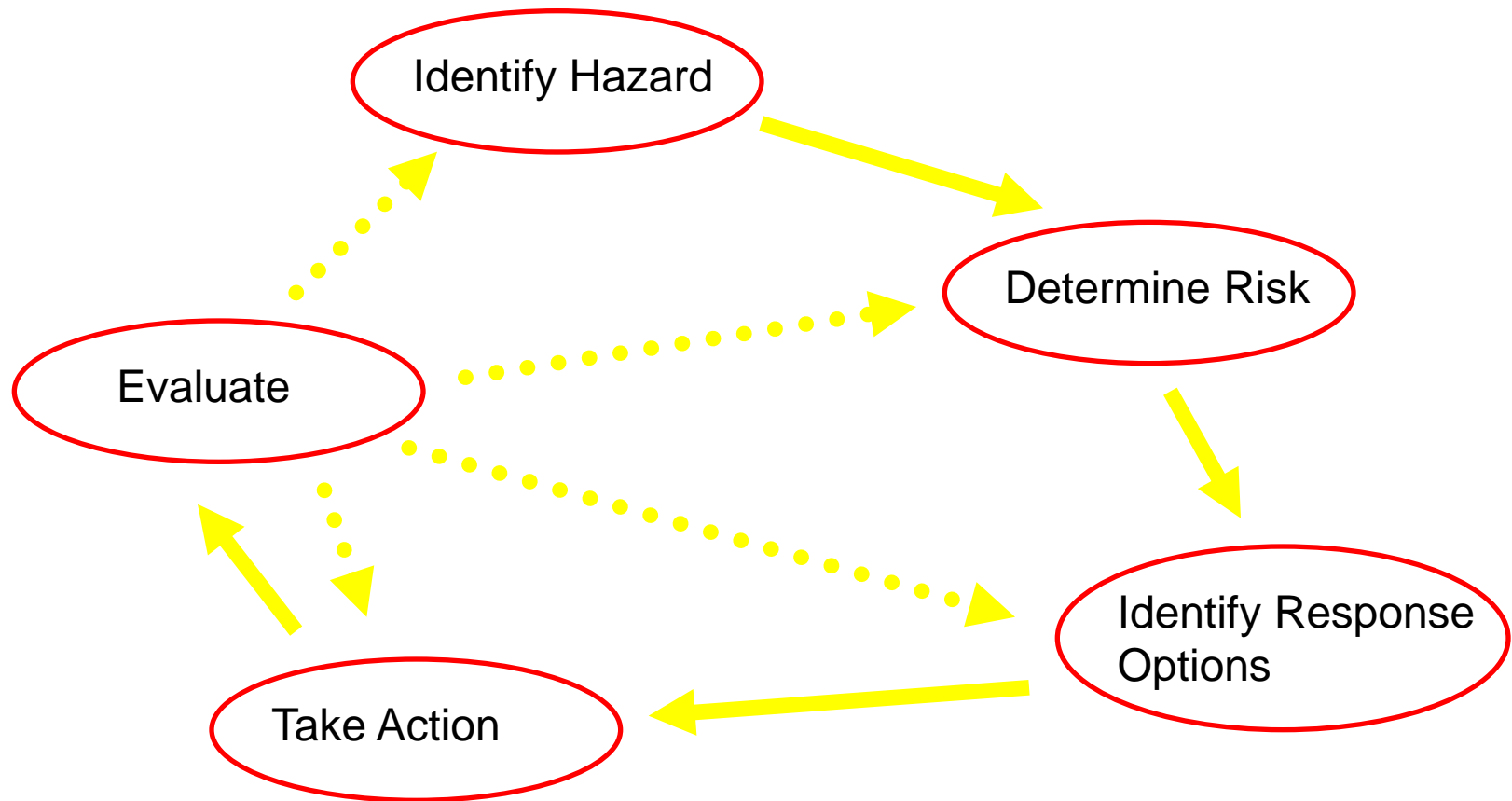


below to display (or remove) the zone from the map below

SIMULATED ☒ Security Zone SIMULATED  
(yellow area on map)



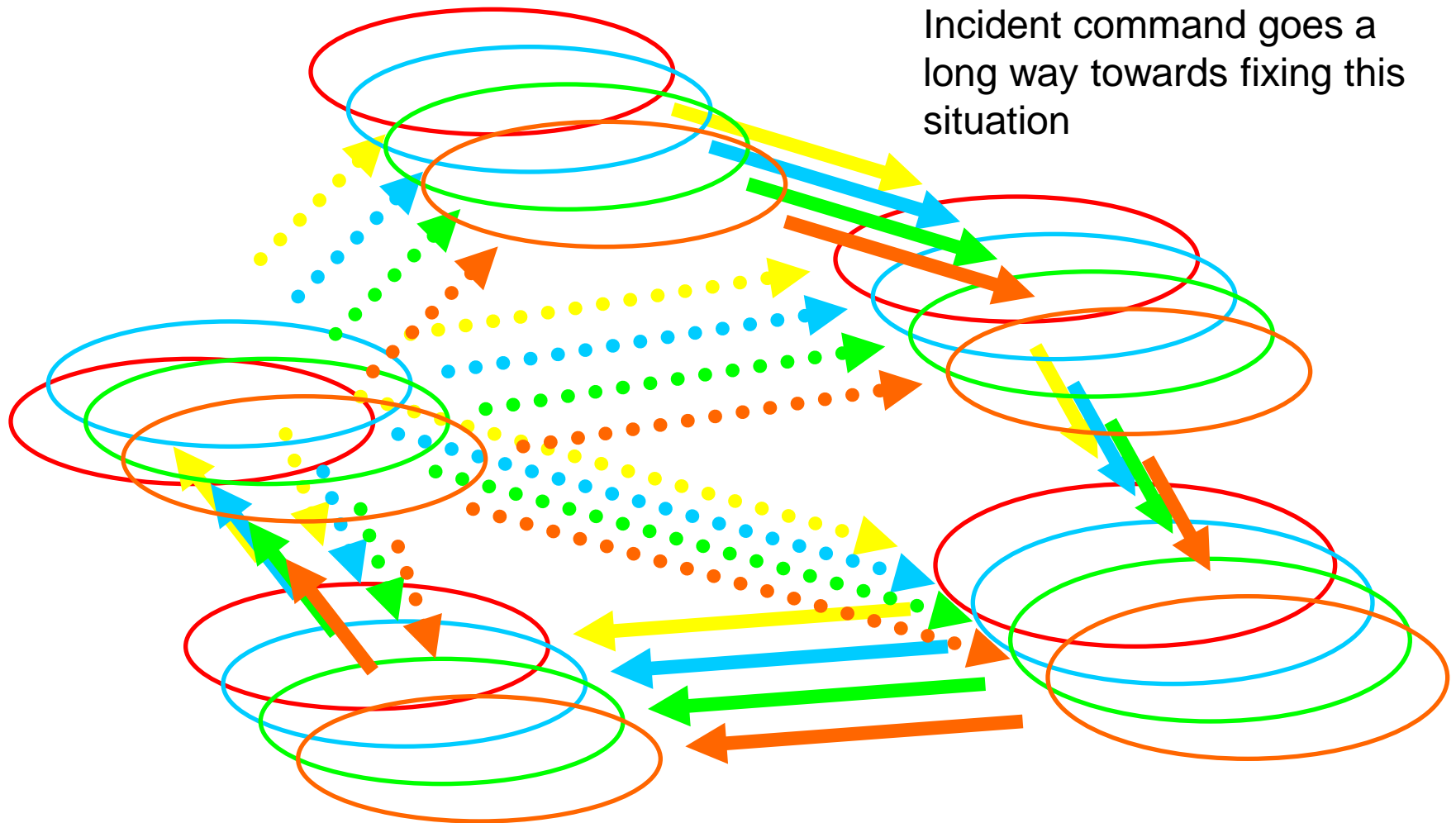
Multiple levels of government and others involved. All doing the right thing - But is it my response or yours?



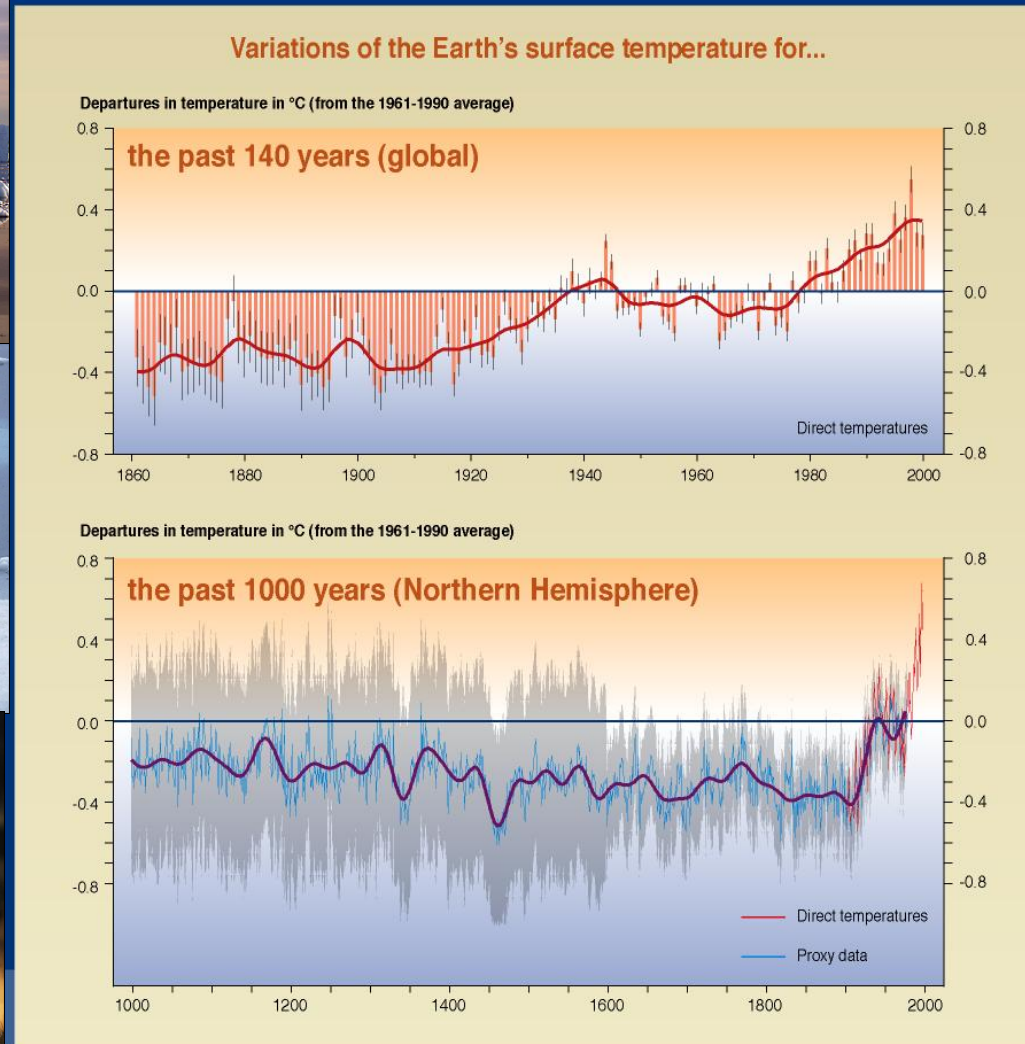


# My Response or Yours?

Public Health + Feds + Industry + Municipal + Province

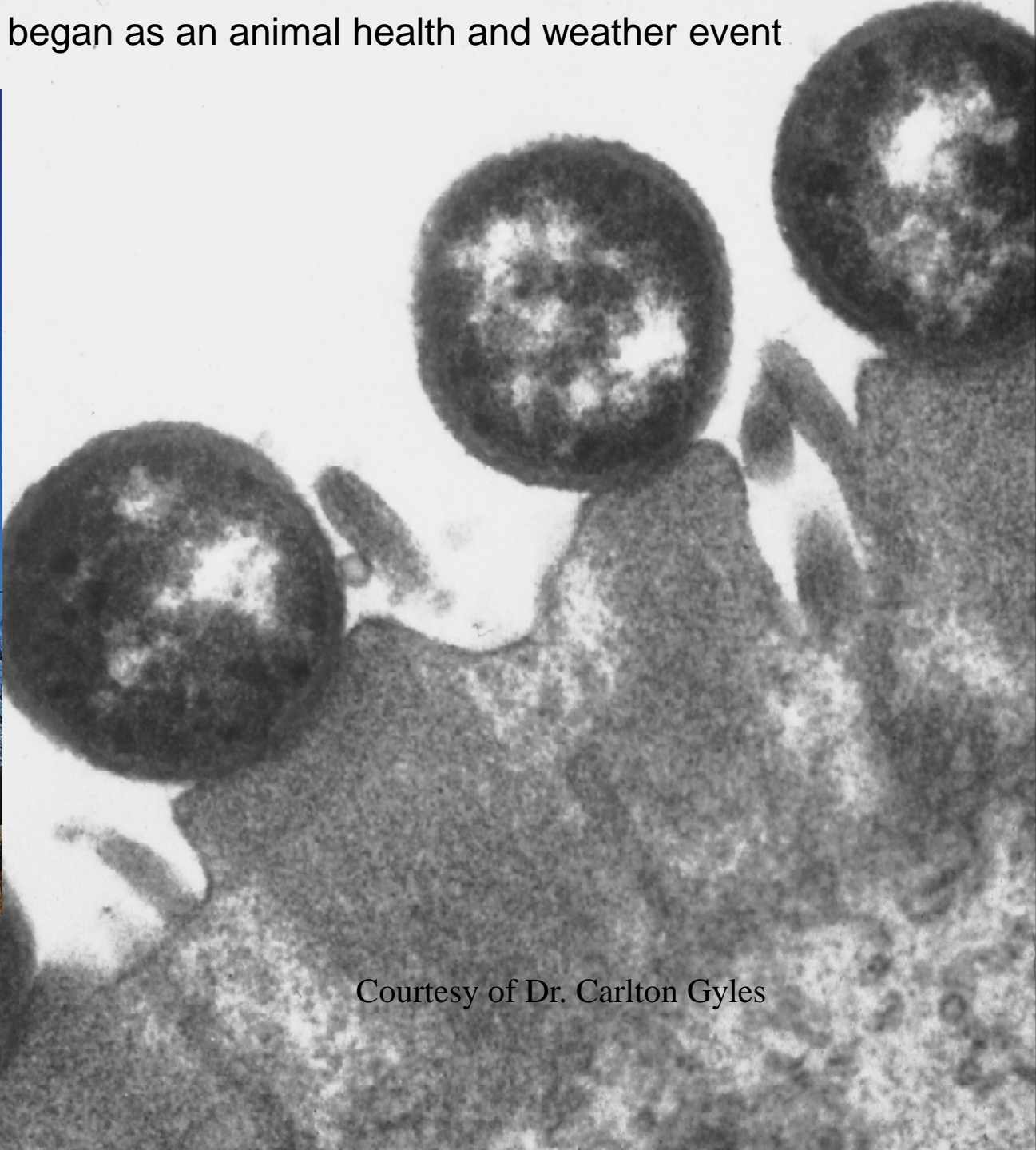


# Climate Change...animal health/biodiversity is involved...especially erratic swings in weather



SYR - FIGURE 2-3

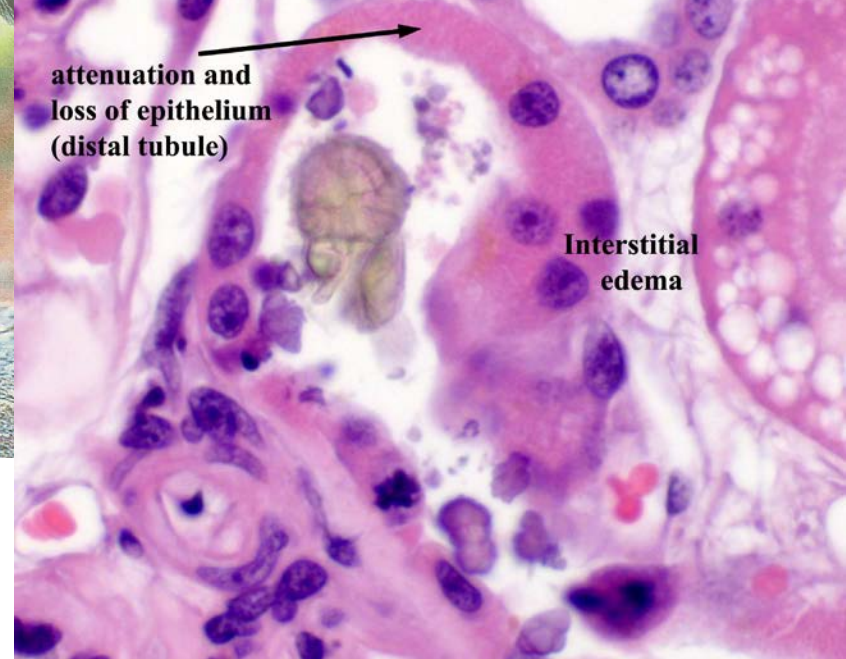
A tragedy that began as an animal health and weather event



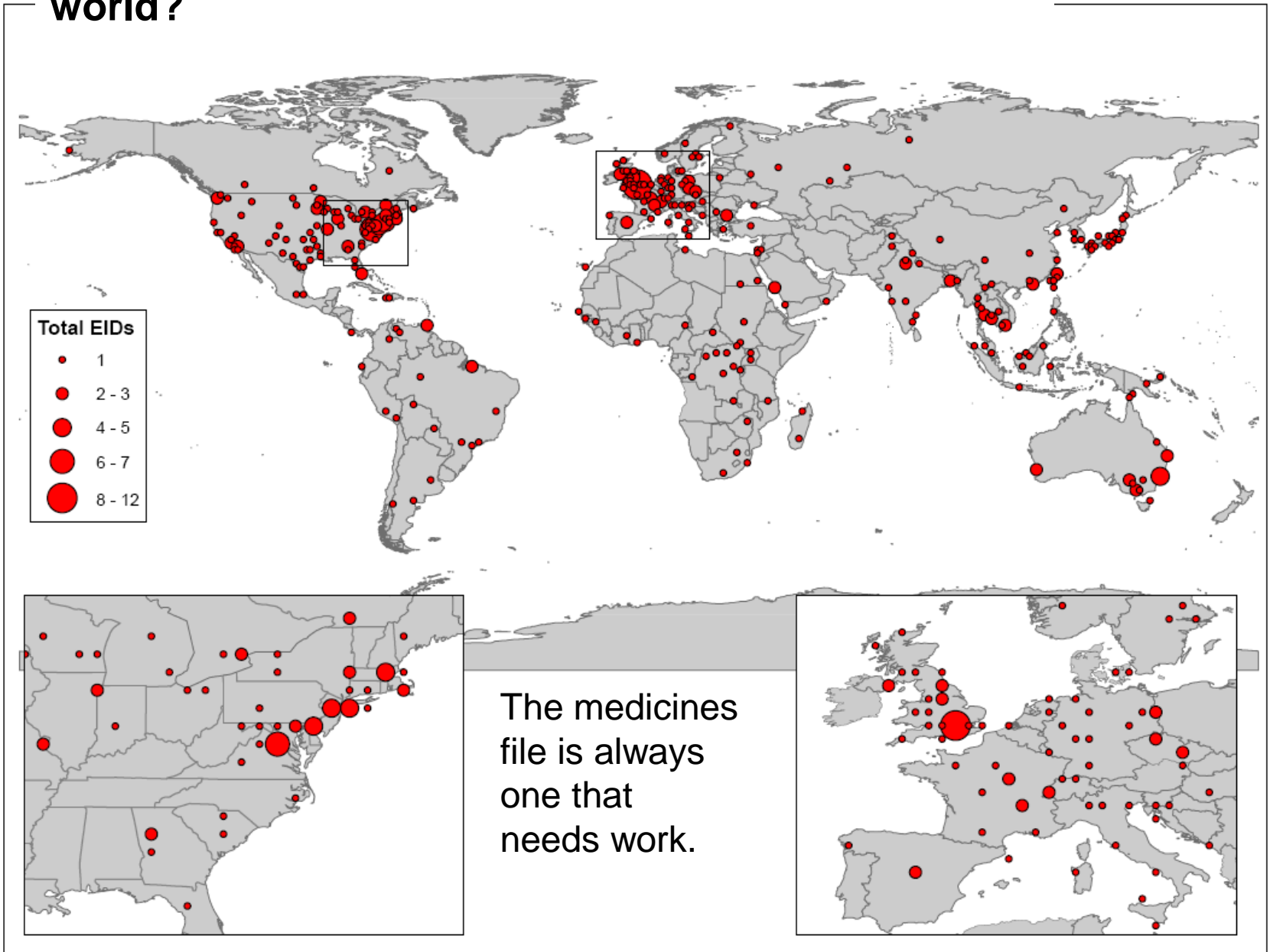
Courtesy of Dr. Carlton Gyles



**You just never know what comes next....**

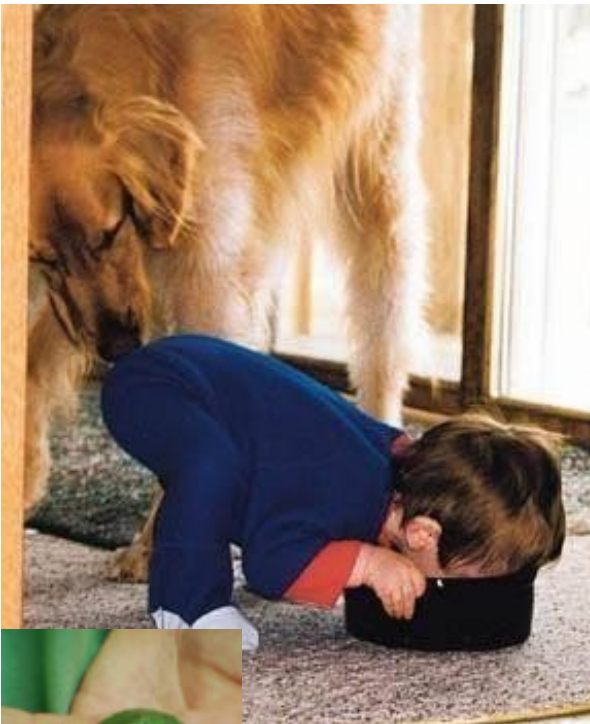


# Why are MRSA epidemics mostly in the developed world?





Our work needs to be aware of some unexpected contacts



Normally "bratty," Petie is all business when he visits children



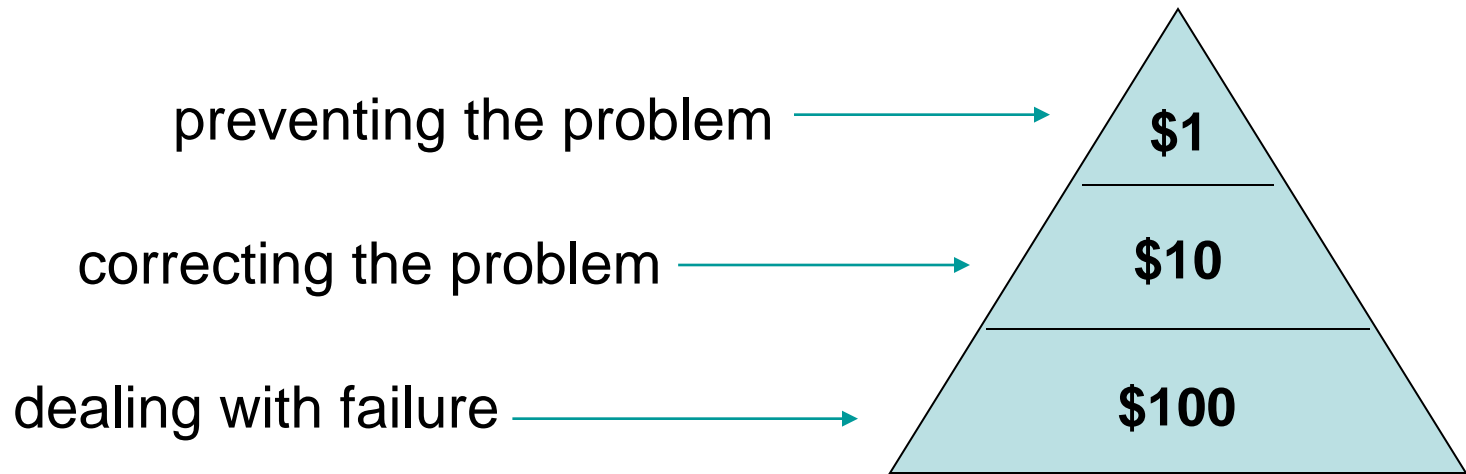


# Animal health and welfare issues just keep on coming – calls for a robust system

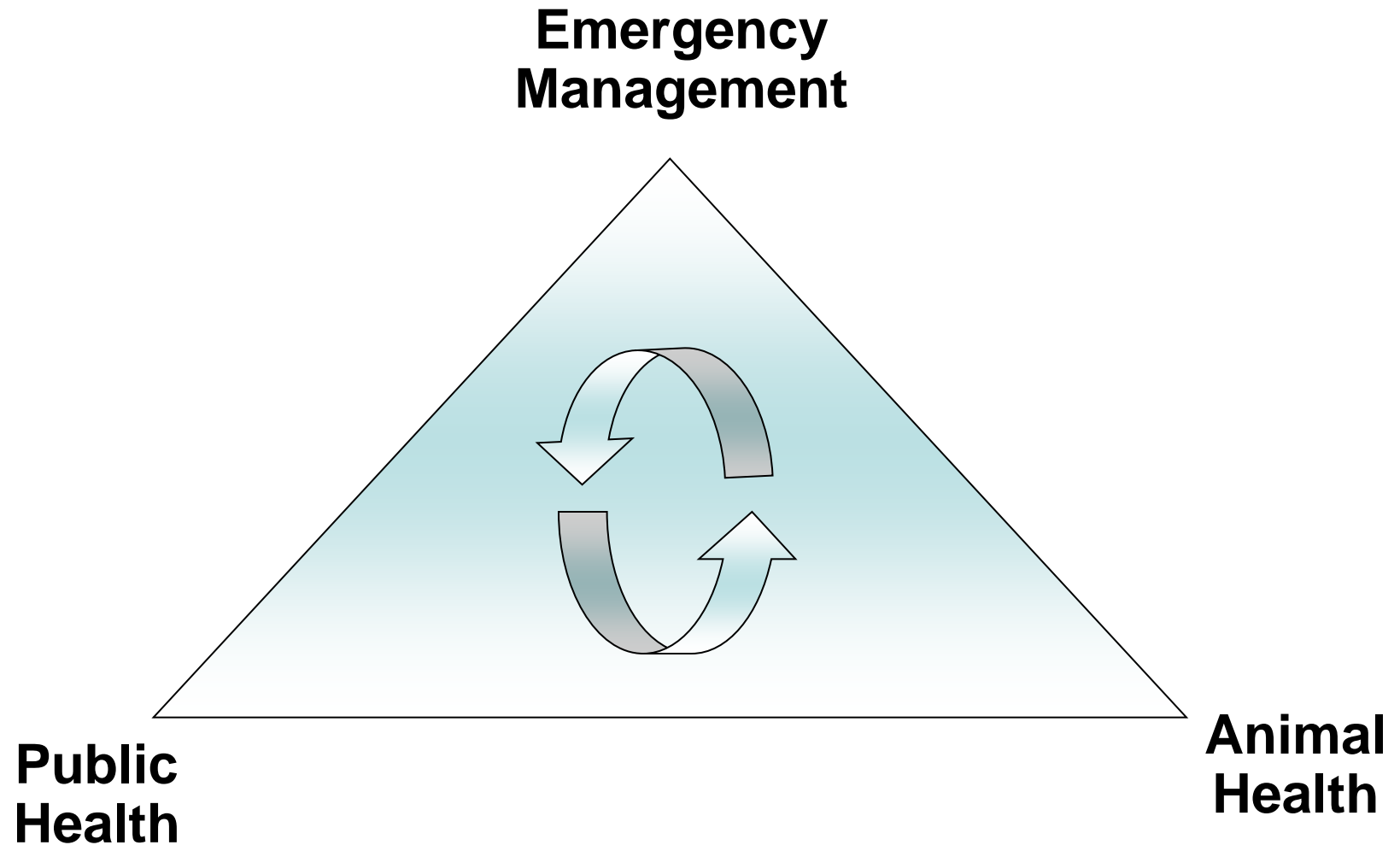


**So many species...  
So little time.**

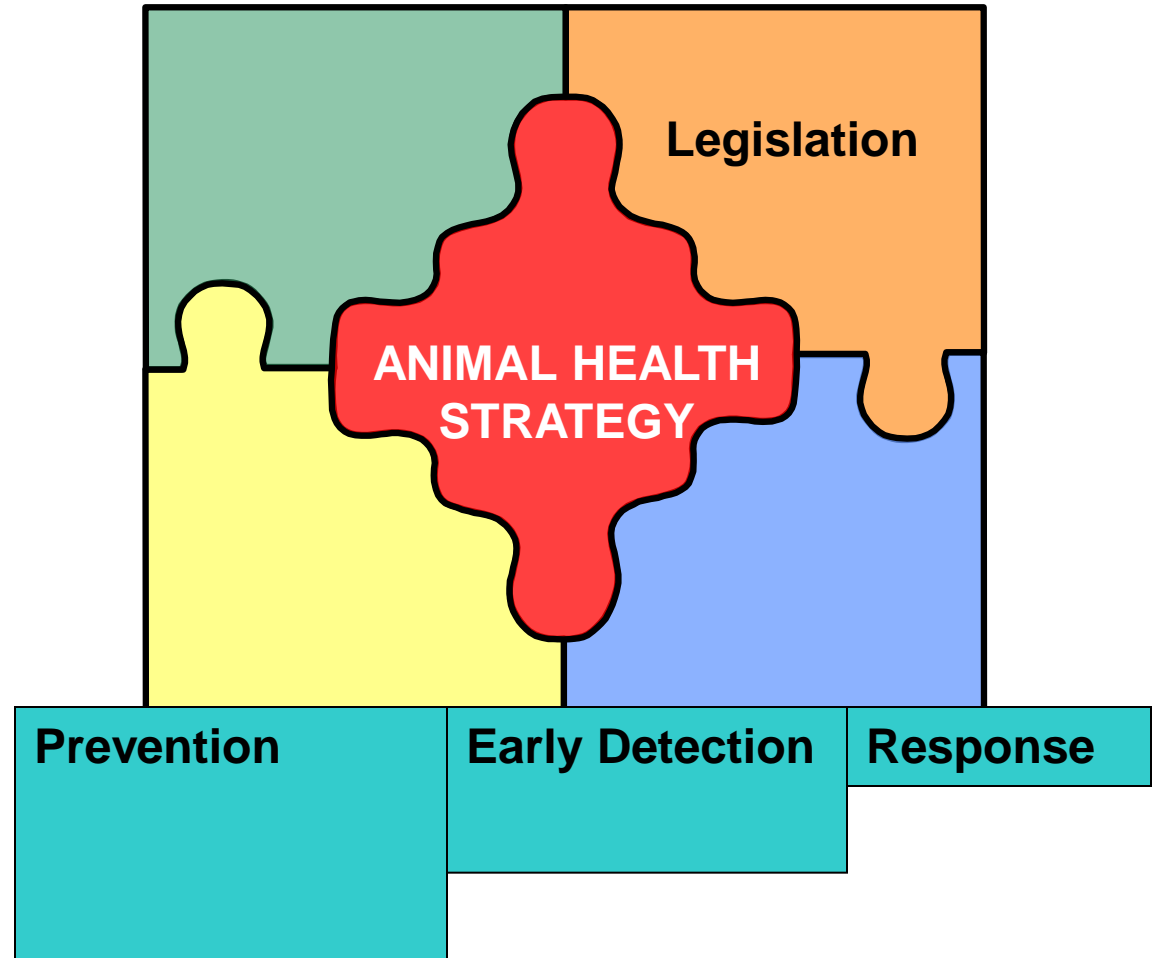
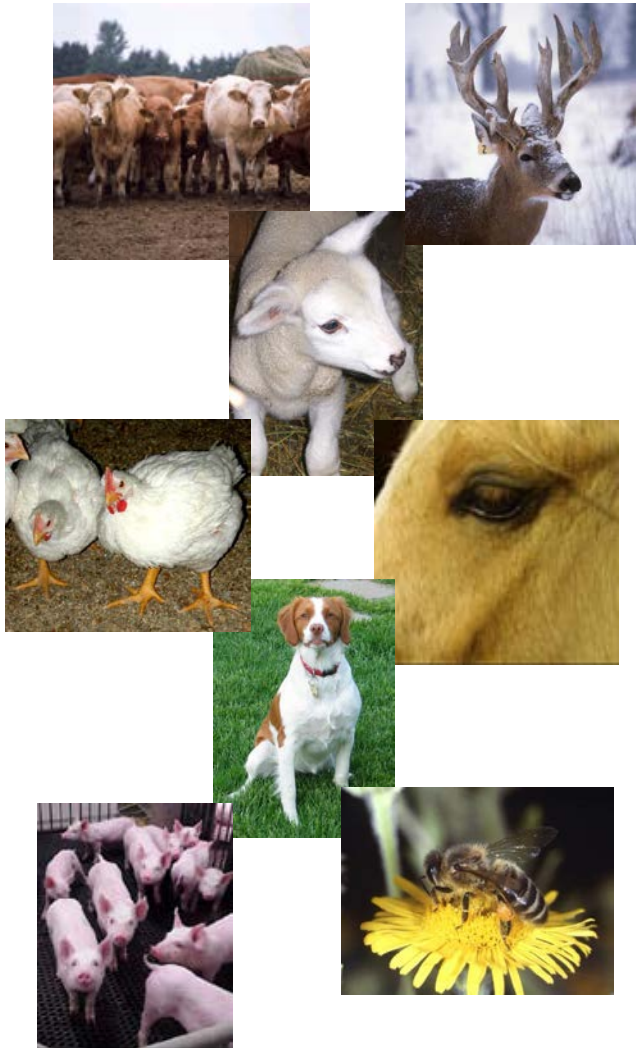
Working in public health, animal health and welfare..., When we do a good job – nothing much happens.



# New Threats Demand New Partnerships







# OMAFRA Animal Health Strategy – fitting it all together

Prevention and Preparedness  
and Planning

Early Detection

Response

C

Growing Forward – Biosecurity  
Stakeholder Partners  
Veterinary extension work  
Simulations with partners  
Training

Animal Health Laboratory – U of G  
Animal Health Strategic Investment  
**Animal Health Act**  
Veterinarians  
“Soft” regulatory approaches

Partnership, collaboration, stakeholder engagement,  
policy development, infrastructure  
risk assessment, continuous improvement

# Animal Health Act - Context

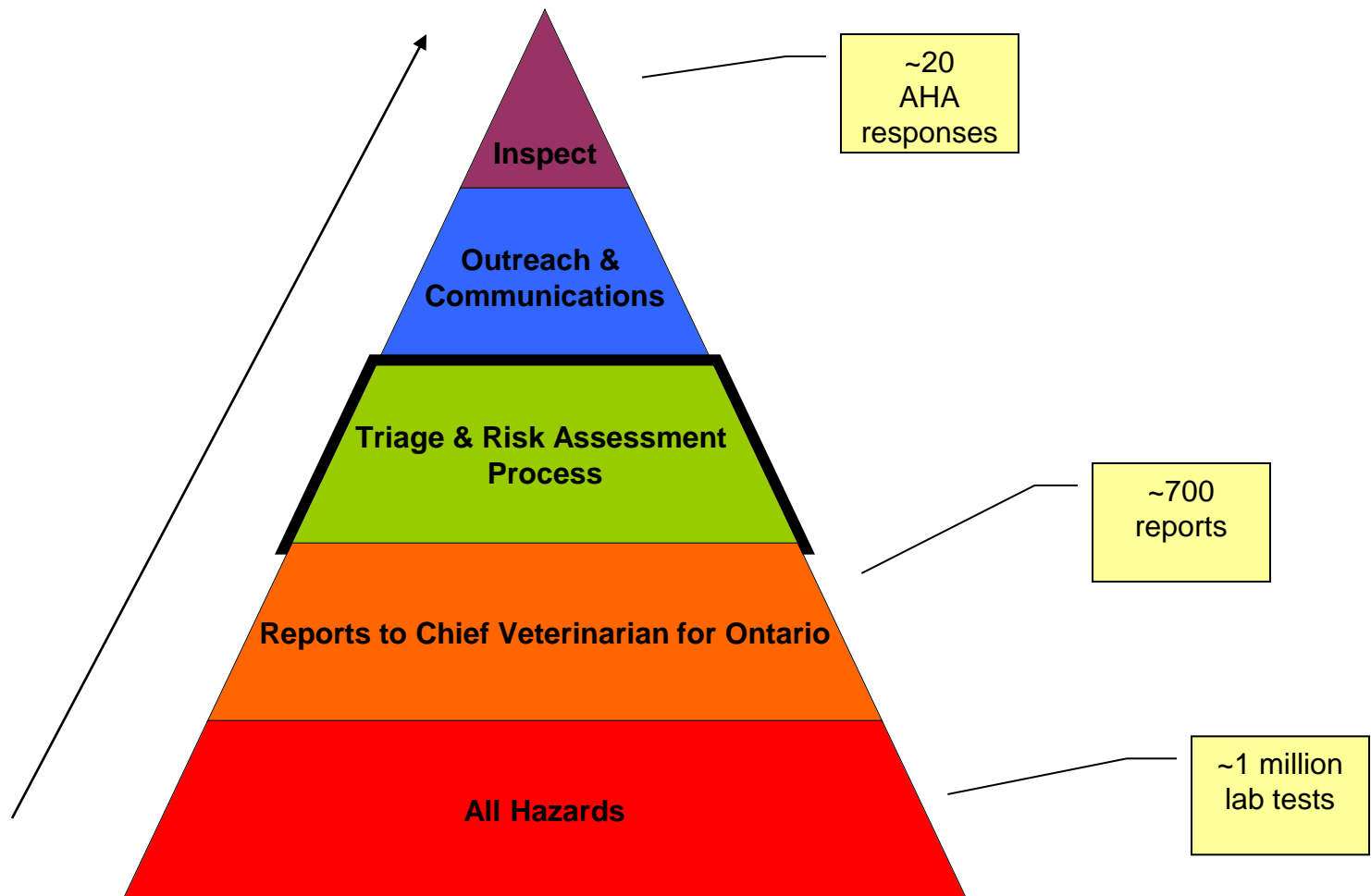
- In 2010 the Animal Health Act came into force.
- And two regulations are listed and will come into effect January 2013:
  - a regulation for the reporting of hazards (labs and vets)
  - a regulation for compensation – (producers)
- OMAFRA can better respond to animal health events and emergencies and support the economic viability of the livestock and poultry industry.



# Animal Health Act – more context

- All animal species – non human
- Over 118 hazards and diseases notifiable by laboratories
- Veterinary reporting of unusual findings
- Chief Veterinarian for Ontario directs responses
- All reports are triaged by veterinarians
- Responses guided by risk assessment
- Responses usually “soft” regulatory approach coordinated by Incident Command concept

# Risk Assessment Process to Determine Appropriate Response



# Reporting by Veterinarians

- Innovative part of the reporting regulation.
- Unusual findings reported by veterinarians while engaged in the practice of veterinary medicine.
- Detection of potentially serious animal, human or food safety risks.
- Hopefully also capture new and emerging diseases of public interest.



## Office of the Chief Veterinarian (Dr. Greg Douglas)

### ➤ *Veterinary Science and Policy Unit*

- Janet Chlebus ASR
- Bruce McNab DVM PhD
- Tim Blackwell DVM PhD
- Ann Godkin DVM DVSc
- Jocelyn Jansen DVM DVSc
- Neil Anderson DVM MSc
- (Janet Alsop DVM MPH)
- Paul Innes DVM MSc
- Tim Pasma DVM MSc
- Csaba Varga DVM MPH (Public Health)
- Tania Sendel MSc (Ecology)
- Jennifer Van Gerwen MSc (Criminology)
- Katherine Hoffman Honours BSc (Animal Science)
- David Colling MSc (Immunology)
- Kathy Zurbrigg RVT MSc (Epidemiology/Animal Welfare)
- 4 Public Representatives at the College of Veterinarians of Ontario
- David Alves DVM PhD - Manager



# Definitely the end...Questions?

