Wildlife Diseases and the Potential for Human Infections

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Diseases in Wildlife – Why care?

Globally:

• Diseases spread between animals and people are ‘zoonotic diseases’ or ‘zoonoses’

• >60 % of diseases in people are zoonoses
Diseases in Wildlife – Why care?

Locally:

- Those who handle wildlife are at increased risk
- Important to have a professional remove wildlife from homes
Today’s Presentation: Zoonotic Diseases in Pest Species

Native:
- Mesocarnivores: raccoons, canids, skunks
- Rodents: squirrels, beavers, etc
- Bats

Nonnative:
- Opossums
- Nutria
- Birds: pigeons, starlings, etc
Zoonotic Diseases in Native Oregon Wildlife
1) **Rabies:**
- Virus with different variants (types) in the US
  - Raccoon, coyote, skunk, etc
  - Bat variant throughout US
- Transmitted from saliva to open wounds or mucous membranes
1) Rabies:

- **Dumb form:**
  - Difficulty walking, confused
  - Out in the day time, no fear
  - Foaming at the mouth
  - Abnormal vocalizations

- **Furious form:**
  - Aggressive, attacking imaginary or stationary objects
Canine Distemper Virus:

Nervous system:
- Aggression, lack of fear, convulsive movements
- Disorientation, lack of alertness, and aimless wandering
- Weakness

Respiratory system:
- Discharge around the eyes and nose
- Coughing

Non-Zoonotic Disease that Mimics Rabies
2) Leptospirosis:
- Bacteria transmitted in animal urine

Symptoms in mesocarnivores:
- Usually do not appear sick

Symptoms in humans:
- Flu-like: fever, chills, headache, muscle aches
- Vomiting, diarrhea
- Jaundice (yellowing of skin)
3) Raccoon Roundworm:
- Transmitted in raccoon scat
- Takes 1-2 weeks to hatch in soil

Symptoms in raccoons:
- Do not appear sick

Symptoms in humans:
- Nausea, tiredness
- Loss of alertness and muscle control
- Blindness, coma, death
1) Rabies - RARELY:
- Prey species often do not survive the attack from a rabid predator
- Less likely to transmit the disease
Zoonotic Diseases in Rodents: Beavers, Squirrels, Mice

2) Leptospirosis:
• Bacteria transmitted in animal urine

Symptoms in rodents:
• Usually do not appear sick

Symptoms in humans:
• Flu-like: fever, chills, headache, muscle aches
• Vomiting, diarrhea
• Jaundice (yellowing of skin)
Zoonotic Diseases in Rodents: Beavers, Squirrels, Mice

3) Hantavirus:
• Virus transmitted in rodent urine, scat, saliva
• More common in SW but still present in the PNW

Symptoms in rodents:
• Do not appear sick
• Working with rodent nests vs live animal

Symptoms in humans:
• Flu-like: fever, chills, headache, muscle aches
• Vomiting, diarrhea
• Coughing, respiratory signs, death
Zoonotic Diseases in Rodents: Beavers, Squirrels, Mice

4) Bubonic Plague, *Yersinia Pestis*:
• Bacteria transmitted by rodent fleas
• Cause of the ‘Black Death’ in the middle ages

Symptoms in rodents:
• Do not appear sick
• Working with rodent nests (fleas) vs live animal

Symptoms in humans:
• Flu-like: fever, chills, headache, muscle aches
• Vomiting, nausea
• Big lymph nodes, buboes, death if untreated
5) Tularemia aka ‘Rabbit Fever’:
- Bacteria transmitted by handling dead animals, by fly bites, ticks, or in contaminated soil or water

Symptoms in rodents:
- Dehydration, eye infections, mouth ulcers
- Likely will just find animal dead

Symptoms in humans:
- Skin: ulcers at the site of the insect bite
- Eyes: inflammation, enlarged LN’s on neck
- Lungs: cough, chest pain, difficulty breathing
Zoonotic Diseases in Bats:

1) Rabies:

Dumb Form:
• Activity during daylight hours
• No fear of human activity or sounds
• Inability to fly, weak

Furious Form - RARELY:
• Aggressive behavior

...bats feeding on insects over people’s heads at dusk often confused with ‘attacking’
Non-Zoonotic Disease that Mimics Rabies:

**White Nose Syndrome:**
- Found in bats in WA, not yet reported in OR

**Symptoms in bats:**
- Bats out of hibernaculum early (searching for food)
- Dead or dying bats on the ground
- White fungus: nose, wings, ears or tail
  - Not always visually evident

*Only handle sick bats with gloves, report the bat, and submit the bat for testing*
Zoonotic Diseases in Nonnative Oregon Wildlife
Zoonotic Diseases in Opossums:

1) **Rabies – RARELY:**

- Naturally low body temperature
  - Less hospitable host for the virus
- Still a mammal, infection is possible but very rare
- Still take note of abnormal behavior
  - Out in the daytime, etc
Zoonotic Diseases in Opossums:

2) Leptospirosis:

Symptoms in opossums:
• Usually do not appear sick
Zoonotic Diseases in Nutria:

1) Rabies:
   • Low risk – not likely to survive attack

2) Leptospirosis:

3) Tularemia:
1) Avian Influenza:
- More common in water fowl, droppings
- Biggest concern is the effect on poultry industry
- Potential to mutate and infect humans
  - Low pathogenic bird flu → high pathogenic bird flu

Symptoms in wild birds:
- Usually do not appear sick

Symptoms in humans:
- Flu! fever, chills, headache, muscle aches
- Vomiting, nausea
Zoonotic Diseases in Birds: Pigeons, Starlings, etc

1) Psittacosis aka ‘Parrot Fever’:
- Bacteria spread through droppings and nasal discharge of birds
  - parrots, pigeons, sparrows, ducks, hens, gulls, etc

Symptoms in wild birds:
- Inflamed eyes, difficulty breathing, watery green droppings

Symptoms in humans:
- Flu-like: fever, chills, headache, muscle aches
- Vomiting, nausea
- Eye irritation, pneumonia
Moral of the Zoonotic Disease Story

- Protect yourself!
  - Heavy leather gloves with live animals
  - Rubber gloves when handling dead animals
  - Facial masks
  - Disinfect properly afterwards
    - Bleach, rubbing alcohol
Moral of the Zoonotic Disease Story

- Scat, urine, and nesting areas
  - Just as dangerous as live animals

- Seek medical attention when ill
  - Inform physician of your line of work
To report sick or dead wildlife, call your local ODFW office or the Wildlife Health Lab toll free number (866-968-2600)
Thank you for your attention!

The One Health Triad

Healthy People

Healthy Environments

Healthy Animals