

Diseases

You Can Get From

Wildlife



A Field-guide for Hunters, Trappers,
Anglers and Biologists

General contacts:

Public Health Agency of Canada

<https://www.canada.ca/en/public-health.html>

Canadian Food Inspection Agency (CFIA)

www.inspection.gc.ca

Canadian Wildlife Service

<https://www.canada.ca/en/services/environment/wildlife-plants-species.html>

Canadian Wildlife Health Cooperative

<http://www.cwhc-rcsf.ca/>

Provincial and Territorial (British Columbia, Alberta, Saskatchewan, Manitoba, Yukon, Northwest Territories) contacts can be found at the back of this book

A note on filter masks:

- Appropriate well-fitting masks for respiratory (breathing) protection against airborne bacteria and viruses include NIOSH-approved certified filters (e.g. N95 masks)
- *Note: dust masks for insulating or painting DO NOT protect against most airborne bacteria and viruses*
- Appropriate filter masks can be bought at most safety supply stores and some hardware & home building outlets
- For more information on special precautions and proper use, see your local public health unit or Workers Compensation Board (WCB)



Diseases

You Can Get From

Wildlife:

Western Canada

WILD GAME AND FISH MAY CARRY DISEASES
THAT CAN BE TRANSMITTED TO PEOPLE

DISEASE TRANSMISSION TO PEOPLE CAN BE PREVENTED
BY FOLLOWING THE GUIDELINES PROVIDED IN THIS PAMPHLET

WITH THE USE OF PROPER PRECAUTIONS,
YOUR CHANCE OF INFECTION IS VERY LOW

IF YOU HAVE ANY QUESTIONS OR ISSUES WITH AN
ANIMAL YOU HAVE HARVESTED,
OR HAVE FOUND DEAD, SICK OR INJURED,
CONTACT THE LOCAL OFFICE OF THE:

- BRITISH COLUMBIA WILDLIFE HEALTH PROGRAM
 - ALBERTA FISH & WILDLIFE DIVISION
- SASKATCHEWAN MINISTRY OF ENVIRONMENT
 - MANITOBA FISH AND WILDLIFE
- YUKON DEPARTMENT OF ENVIRONMENT
- NORTHWEST TERRITORIES ENVIRONMENT
AND NATURAL RESOURCES

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	• Raccoon Roundworm

Specific Diseases

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Anisakiasis	Papillomas (warts)
Anthrax	Plague
Chronic Wasting Disease	Rabies
Diphyllobothriasis	Ringworm
Giant Liver Fluke	Sarcocystis
Hydatid Disease	Sarcoptic Mange
Leptospirosis	Seroma (hydrocyst)
Moose Measles	Trichinellosis
Orf	Tuberculosis
	Tularemia

Legend

Can I still use the animal?



Yes - Doesn't look nice

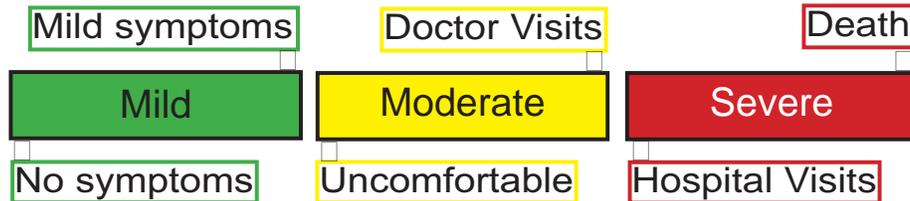


Yes - Take safety precautions



No - Contact the local wildlife agency office

How bad can it get?



Safety Symbols

Wash Hands



Wear Gloves



Wear Mask



Safe to Eat:

Yes



No



Food Preparation:

Cook



Freeze



Safe for Pets:

Yes



Caution



Top 10 Tips ~

Recommended Internal Temperatures: GAME (74° C), FISH (63° C), WILD FOWL (74° C)

1) **Cook all Meat**

- Thoroughly cook game meat & fish to recommended temperatures
- Never eat raw or undercooked meat
- *Caution: Freezing, microwaving or smoking MAY NOT KILL all the bacteria, viruses or parasites*

2) **Wash Your Hands**

- Use soap and water:
 - After handling game & fish
 - After using the bathroom
 - Before eating or handling food

3) **Drink Safe Water**

- Pack it in, OR
- Boil it first, OR
- Use an approved water purifier or filter

4) **Safe Field Dressing**

- Keep it **CLEAN, COOL & SAFE** (pg 6)
 - Protect meat from intestinal contents
 - Follow safe meat-handling practises (pg 7)

5) **Bush Bathroom**

- Bury your wastes away from water
- Don't touch animal waste

6) Not Your Kill? Leave it Alone!

- Stay away from sick or dead animals & contact the local wildlife agency office
- Avoid rodents where possible & use caution if trapping beaver / muskrat

7) Keep Bugs Off

- Wear long pants & long-sleeved shirts
- Wear light coloured clothing
- Use insect repellents (with DEET)

8) First Aid

- Clean cuts / wounds with soap & water
- Consult your doctor, and explain that you had contact with wildlife

9) Play it Safe

- Wear reflective clothing
- Don't mix guns and alcohol
- Drive safely
- Use sunscreen

10) Not Feeling Well?

- Consult your doctor if you are ill and have recently eaten, or had contact with, wild animals or fish
- Tell your doctor about your recent activities with wildlife

Safe Field Dressing ~

▶ **Things that spoil meat**

- Poor shot / arrow placement
- Improper field-dressing or careless butchering
- Dragging a dressed carcass
- Hanging or aging the carcass for too long
- High temperatures during aging

▶ **Why prevent meat spoilage?**

- To reduce the risk of illness
- Properly dressed & aged meat tastes better

▶ **Keep it CLEAN**

Prevent bacterial contamination

- Water, mud, soil and leaves carry bacteria
 - Butcher animal in cleanest area possible
 - Keep carcass covered when transporting
- Prevent bacterial-related spoilage:
 - Wash your hands
 - Always use clean equipment and knives
 - Avoid contact between clothes & carcass
 - Clothes can carry bacteria
 - Wash clothes when you get home
 - Wear disposable gloves

Wash equipment that cuts into intestines

- Before you butcher the carcass, clean off hair, dirt and other debris

~ Prevent Meat Spoilage

Keep it COOL

Prevent bacterial growth

- Spoilage results from bacterial growth
- Spoilage and disease are affected by **TIME & TEMPERATURE**
- Field dress & skin the animal as soon as possible - fur may protect the carcass, but can also prevent proper cooling!

*The warmer the temperature,
the faster the spoilage*

Keep it SAFE

- Protect meat from intestinal contents; they contain bacteria & parasites
 - Wash knives frequently
 - Trim contaminated meat
 - Cook well
- Label meat packages with the date to:
 - Select specific cuts for cooking
 - Freeze for up to 12 months for best quality
- When in the kitchen or campsite:
 - Clean hands, cooking utensils and surfaces
 - Separate raw meat from ready-to-eat foods
 - Cook to recommended temperatures *to kill bacteria, viruses and parasites*
 - Refrigerate promptly *to slow bacterial growth*

Food-Borne Diseases ~

▶ **Fecal contamination**

- Bacteria, viruses and parasites live and grow in the intestines of animals
- They can contaminate hands, meat & utensils and can cause illness if eaten
- This is sometimes called **FOOD POISONING**

▶ **Examples**

- *Salmonella* • *E. coli* • Toxoplasmosis

▶ **How can I get sick?**

- Eating raw or undercooked meat
- Improper food **PREPARATION & COOKING**
- Contaminating cooked food with:
 - Raw or undercooked meat
 - Dirty hands & utensils
 - Dirty food preparation surfaces

Beware: Some food-borne diseases can be transmitted from person to person

▶ **How can I protect myself?**

- Cook meat to recommended temperatures

Beware: Freezing may not kill all harmful bacteria, viruses or parasites



~ Make Your Food Safe to Eat

- Wash your hands with soap and water
 - After using the bathroom
 - After handling carcasses, live animals or their feces
 - Before eating or handling food



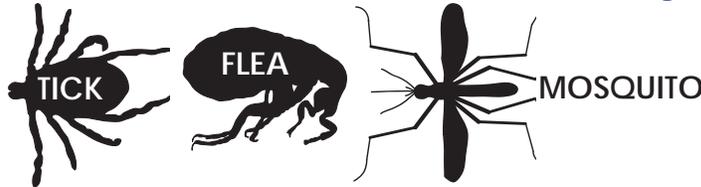
- Properly store meat
 - Refrigerate
 - Freeze when storage for more than 2 days is required
 - Thaw meat in the fridge and not on the counter
- Cook in a clean area
 - Scrub surfaces, utensils and cooking equipment with soap and water before and after food preparation

Not feeling well?

- Recognize common symptoms of food-borne disease:
 - Diarrhea
 - Nausea
 - Vomiting
 - Fever
 - Weakness
 - Stomach pain
- Contact your doctor if you become ill after eating raw or undercooked meat
- Tell your doctor what you hunted & ate

Insect-Borne Diseases ~

▶ Ticks/Insects that can carry disease



▶ Examples

- Lyme Disease
- Ehrlichiosis
- Babesiosis
- Rocky Mountain Spotted Fever
- West Nile Virus (WNV)

▶ How can I get sick?

- You get bitten by an infected tick, flea or mosquito

▶ How bad can it get?

- Symptoms can range from mild illness ➔ hospitalization ➔ death

▶ How can I protect myself?

- Prevent TICK bites
 - Walk on cleared trails
 - Wear a hat, long sleeves & pants, and light coloured clothing
 - Tuck pant legs into socks or boots
 - Use insect repellents (with DEET) on clothing and exposed skin

*Inspect clothes, skin and pets for ticks
Remove whole tick by grasping as close
to the tick's head as possible
Slowly pull tick straight out*

~ *Prevent Insects from Biting You*

*Try not to squeeze the tick as you remove it
Keep the tick, show it to your doctor*

- Prevent MOSQUITO bites
 - Wear light coloured, long-sleeved clothing
 - Use insect repellents (with DEET)

*Beware: Mosquitoes are most active at
dusk and dawn - take precautions!*

Not feeling well?

- Initial symptoms may be mild & include:
 - Fever
 - Chills
 - Nausea
 - Sweats
 - Vomiting
 - Sore throat
 - Headache
 - Cough
 - Muscle pains
 - Rash
 - Fatigue
- More serious conditions can develop, and include the sudden onset of:
 - Chest pain
 - Muscle pain
 - Stomach pain
 - Loss of appetite and / or weight
- Consult your doctor if you have any of these symptoms up to 2 months after exposure to ticks, fleas or mosquitoes

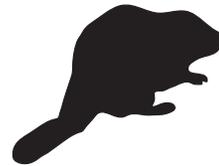
Water-Borne Diseases ~

▶ **Background**

- Water (especially from streams, rivers, ponds and lakes) can contain harmful bacteria, viruses and parasites
- You may become ill after drinking water from these sources

▶ **Examples**

- Beaver Fever (Giardiasis)
- Cryptosporidiosis



▶ **How can I get sick?**

- Drinking water contaminated with animal or human feces

▶ **How can I protect myself?**

- Bring safe or bottled water
- Boil all stream, river and lake water at a rolling boil for at least three minutes before using it for:
 - Drinking
 - Preparing food
 - Brushing your teeth



Beware: Chemical disinfection & filters may not kill all bacteria, viruses or parasites

- Avoid swallowing the water when swimming in streams, rivers and lakes

~ Make Your Drinking Water Safe

- Protect water sources:
 - Bury your wastes far away from any water

Not feeling well?

- Recognize common symptoms of water-borne disease:
 - Diarrhea
 - Nausea
 - Fatigue
 - Chills
 - Stomach cramps
 - Bloating
 - Weight loss
 - Fever
- If you develop symptoms:
 - Drink plenty of safe water
 - Use oral rehydration salts
 - Contact your doctor as soon as possible
 - Tell your doctor that you may have swallowed contaminated water

Beware: Some water-borne diseases can be transmitted from person to person

Additional Diseases ~

▶ **Abscesses**

- Pus & bacteria-filled lumps found within animal tissues, usually during butchering
 - Most animals appear to be healthy
- If there is only one abscess, trim away and discard the affected meat
- If multiple abscesses are found, it is safer not to eat the animal

NEVER cut into abscesses or eat meat containing abscesses

▶ **Hantavirus**

- A rare & potentially fatal virus in wild mice
- You may contract it by breathing virus carried on dust particles from mouse feces, dried urine or nesting materials
 - Rodent-proof your home / cabin
 - Avoid contact with rodents & their feces
 - Wear a protective mask when you work in enclosed spaces where rodents live

For additional details on safe clean-up, see 'Diseases & Conditions' at www.bccdc.ca

▶ **Bird Flu (Avian Influenza)**

- Some forms of bird flu can be transmitted to people
- Contact local health services in your province for public health updates

~ That you Should Know About

- Wild birds can carry bird flu but rarely get sick
- Practise proper hygiene when butchering birds - wear gloves & wash hands

Avoid handling sick or already dead wild birds

Filarial Worms (Dirofilaria)

- Long, white & slender roundworms found under the skin of black bears
- Black flies spread these worms to new hosts
- Although rare, people bitten by an infected black fly can become ill
- Worms in bears *DO NOT* infect people

Filarial worms may be seen during the butchering of bears. Always cook bear meat

Raccoon Roundworm (Baylisascaris)

- Found in raccoon intestines
- People can be exposed by ingesting roundworm eggs - take precautions
- Practise proper hygiene and wear protective clothing (gloves and coveralls) when skinning raccoons
- Disinfect your work space
- Health effects in people may include:
 - Skin irritation
 - Brain damage
 - Eye damage
 - Death is rare

Avoid contact with raccoons & their feces

Anisakiasis

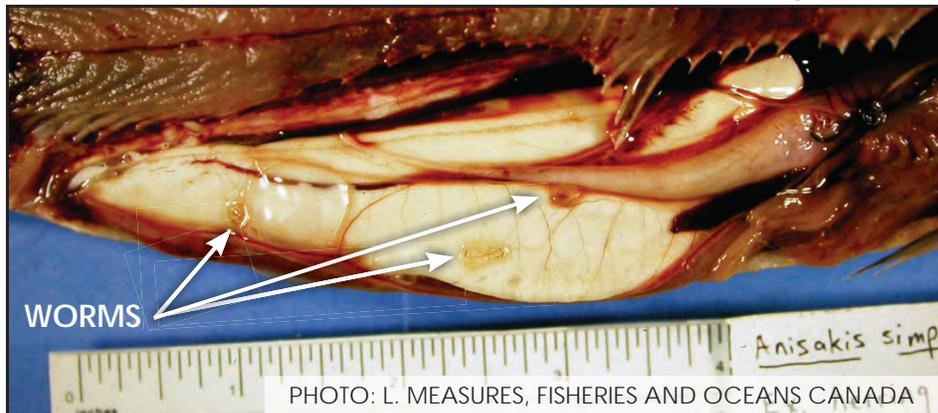
Caution

Commonly infected wildlife



Is this animal infected?

- Affected marine fish have worms that are:
 - Often free in the fish's body cavity
 - 1.8 to 3.6 cm long, and < 1 cm wide
 - White in colour
 - Often in the shape of a “watch-spring” coil



Can I get it?

- Yes
 - By consuming raw or undercooked fish
 - *Caution: some people may develop allergic reactions after eating these worms*

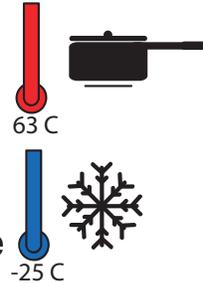
How bad can it get?



Beware: May require medical attention

Protect myself and others

- Gut & process the fish immediately to stop worms moving into the muscle
- Kill worms in the muscle:
 - Cook fish to 63°C for 10 min.
- OR
- Freeze at -25°C for 7 days, especially when the fish will be prepared for sushi



Symptoms in people

- Occur within hours of eating infected fish
 - Severe stomach pain
 - Nausea and vomiting
- Worms may enter the intestine 1-2 weeks after infection
 - Surgical removal may be necessary if worms burrow into the intestinal wall
 - Worms are occasionally coughed up
- Seek medical advice if you become ill after eating raw or undercooked fish

Safe for pets?

- Yes, if the fish is well cooked
- Worms cannot survive in pets for very long



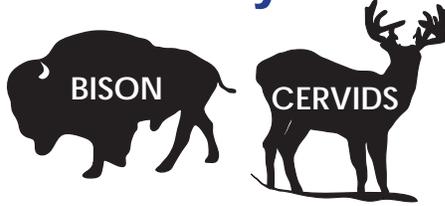
What causes it?

- A roundworm called *Anisakis simplex*
- Commonly known as herring worm

Anthrax



Commonly infected wildlife



Is this animal infected?

- Living animals may be slow, weak, disoriented & dead within hours to days
- Dead animals bloat and decompose quickly
- There may be a bloody discharge from the mouth, nose & anus



Can I get it?

- **YES!**
 - Through cuts, open sores and scratches
 - Inhaling spores from contaminated materials, such as dust and grass
 - Eating undercooked meat

How bad can it get?



18 Inhaled anthrax is fatal; avoid dead animals

Spread by Cuts, Eating It, or Breathing It In

Protect myself and others

- Animals suspected of having anthrax:
 - DO NOT TOUCH or EAT!
 - Wear a proper filter mask
 - Contact the local wildlife agency, Public Health Unit or CFIA



Symptoms in people

- Cutaneous (skin) anthrax:
 - Most common type of anthrax infection in people
 - Small painless sore ➔ blister
 - ➔ ulcer with a black centre
 - Identify early
 - Treat with antibiotics
- Inhalation (lungs) anthrax:
 - Fever, sore throat, general ill-feeling
 - Cough, shortness of breath, chest pain
 - Breathing difficulties ➔ death
- Gastrointestinal (digestive) anthrax:
 - Fever, loss of appetite, vomiting, diarrhea, stomach pain

Safe for pets?

- **NO!** Carcasses should not be opened or cut into



What causes it?

- Toxins from the bacteria *Bacillus anthracis*
- Anthrax has been reported in wood bison in the Northwest Territories and Alberta and plains bison from the Prairies

CWD *(Chronic Wasting Disease)*

?

Commonly infected wildlife



Is this animal infected?

- CWD is a slowly progressing disease
- Animals can appear healthy for many years before they show symptoms:
 - Lack of coordination & paralysis
 - Excess salivation, difficulty swallowing, unusual behaviour & weight loss



PHOTO: WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Can I get it?

- No evidence at the present time that people can get CWD

How bad can it get?



As of 2011, CWD has not been found to infect people

It Can be Passed From Animal to Animal

Protect myself and others

- Animals that have CWD should not be eaten
- Avoid eating brain and spinal cord from any cervid that has not been tested for CWD
- CWD has been found in eastern Alberta and Saskatchewan, but not in British Columbia, Manitoba or the Yukon
- All emaciated deer, moose, elk & caribou should be tested for CWD
 - Contact the closest local wildlife agency

Symptoms in people

- CWD is not known to infect people

Safe for pets?

- Animals that have CWD should not be fed to pets



What causes it?

- An abnormal protein called a prion
- Other prion diseases include:
 - BSE (or Mad Cow Disease) in cattle
 - CJD (Creutzfeldt-Jakob Disease) in people
 - Scrapie in sheep

Diphyllobothriasis

Caution

Commonly infected wildlife



Is this animal infected?

- Many species of fresh water fish and salmon can be infected
- Affected animals have worms that may be coiled in the muscles, or in cysts within the internal organs
- Worms vary in length (from a few mm to cm)

PHOTO: CRAIG BANNER, OREGON DEPARTMENT OF FISH AND WILDLIFE



Can I get it?

- Yes
 - By consuming raw or undercooked fish
 - People can develop mature tapeworms in their intestines

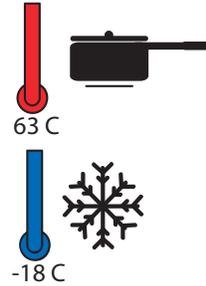
How bad can it get?



Medications can kill & remove the worms

Protect myself and others

- Kill the worms!
 - Cook fish to 63°C for 5 min.
- OR
- Freeze at -18°C for 24 hr.
(at -18°C, ice cream is frozen solid)



Symptoms in people

- Most people have no or mild symptoms:
 - Fatigue
 - Diarrhea
 - Dizziness
 - Weight loss
 - Vomiting
 - Itchy anus
- Massive infection may cause:
 - Numbness of extremities
- Additional symptoms may include:
 - Loss of appetite
 - Paleness
 - Shortness of breath
 - Weakness
 - Confusion

Safe for pets?

- **NOT RAW!** Cook or freeze it first
 - These worms can survive and grow in dog intestines



What causes it?

- A tapeworm called *Diphyllobothrium*
- Commonly known as broad fish tapeworm
- It can grow to 9 m (30 feet) in length in people's intestines

Giant Liver Fluke



Commonly infected wildlife



Is this animal infected?

- Animals rarely show external signs
- Livers may be swollen & lumpy (see photo)
- Purple-gray, flat, oval shaped worms (flake) may be seen in the liver
- Worms vary in size from 1.5 to 3 cm wide and 3 to 8 cm long
 - Some reports claim up to 10 cm long!



Can I get it?

- No
 - Liver flukes do NOT affect the meat

How bad can it get?



No risk to people

Protect myself and others

- The meat of infected animals can be eaten
 - BUT
 - Discard the infected liver
 - Infected liver is unappetizing



Symptoms in people

- None - people are not at risk

Safe for pets?

- Yes



What causes it?

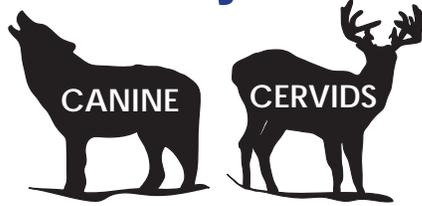
- A flatworm (fluke) called *Fascioloides magna*

Discard the Infected Liver

Hydatid Disease

Caution

Commonly infected wildlife



Is this animal infected?

- Adult worms live and grow in infected dog and wild canine (**wolf & coyote**) intestines
- Affected cervids often have large fluid-filled cysts in the lungs or liver - *these cysts are NOT infectious to people*



Can I get it?

- **YES!** Dogs and wild canines eat cysts in cervid lungs & liver, and worms mature
- The worms release eggs in the dog & wild canine feces, and eggs stick to their fur
- The shed eggs can infect people

How bad can it get?



26 Gets worse with time and depends on organ affected

Protect myself and others

- When handling live canines, their feces, pelts or carcasses:
 - Wear disposable gloves
 - Practise good hygiene
 - WASH YOUR HANDS!
 - Disinfect your work space



Symptoms in people

- Severity of symptoms depends on if and where the juvenile worms form cysts:
 - Brain → Death
 - Lungs → Breathing difficulties
 - Abdomen → Liver damage
- Consult your doctor if you have health concerns after handling wolf or coyote carcasses

Safe for pets?

- **NO!**
 - Cysts found in cervids can infect pet dogs
 - Once infected, pet dogs can be a source of infection to you and your family
 - *DO NOT ALLOW dogs access to lungs and liver from cervids*



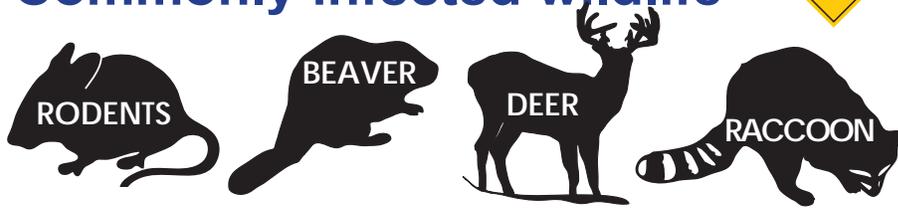
What causes it?

- The tapeworms *Echinococcus granulosus* and *Echinococcus multilocularis* cause hydatid disease

Leptospirosis

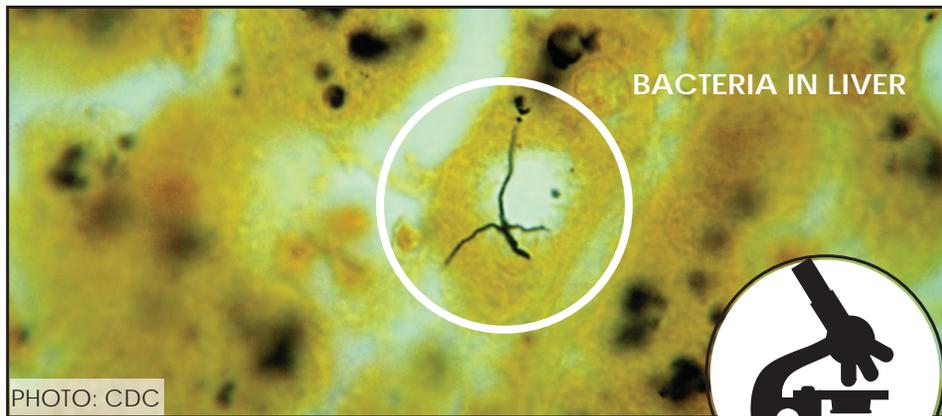
Caution

Commonly infected wildlife



Is this animal infected?

- Infection is believed to be uncommon
- Most infected animals have no symptoms



Can I get it?

- **YES!**
 - Contact with:
 - Urine or tissues of infected animals
 - Water, soil or vegetation contaminated by infected urine
 - Consumption of:
 - Food or drinking water contaminated by infected urine

How bad can it get?



Can be fatal if not treated immediately

Spread in Contaminated Urine

Protect myself and others

- When handling rodents (including beavers) & raccoons:
 - Wear disposable gloves
 - Wash your hands afterwards
- Clean cuts or wounds with soap and water
- Wear boots when wading in water



Symptoms in people

- Most people will not have symptoms
- If symptoms do occur, they can include:
 - High fever, severe headache, chills, muscle aches, and vomiting
- Other symptoms can include:
 - Jaundice (yellow skin and eyes)
 - Red eyes
 - Abdominal pain, diarrhea, rash
- If untreated, symptoms can include:
 - Kidney damage, liver failure, breathing problems, headache, stiff neck
- Fatalities are rare

Safe for pets?

- In severe cases, pets can die from leptospirosis
- Pets can also transfer the bacteria to you
- Talk to your veterinarian about vaccines



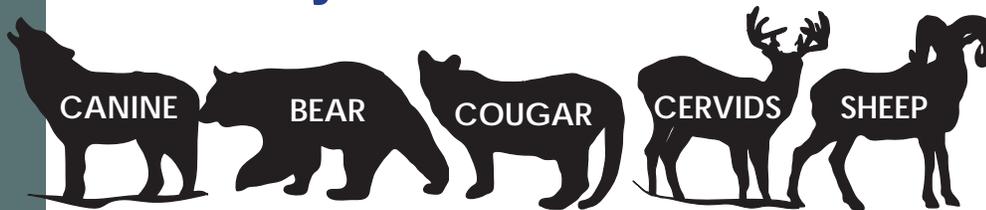
What causes it?

- Bacteria called *Leptospira*

Moose Measles

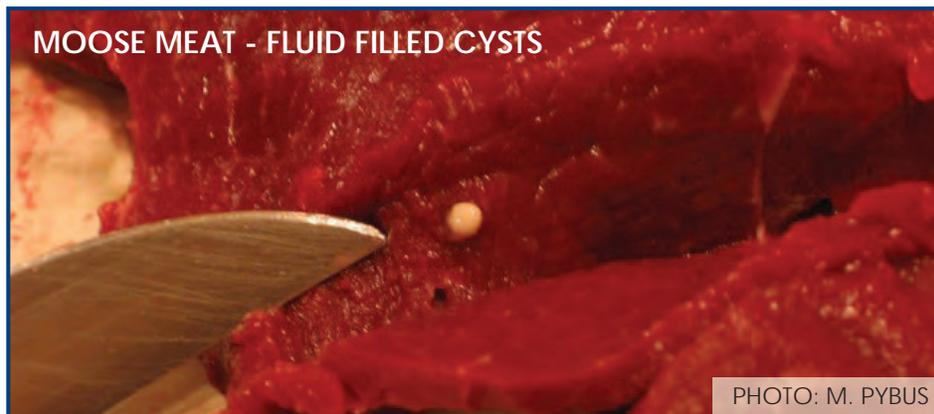


Commonly infected wildlife



Is this animal infected?

- Adult worms live & grow in the intestines of infected carnivores
- Affected herbivores will have small white cysts, usually in muscle and connective tissue
 - Animal may have few or many cysts



Can I get it?

- No
 - The cysts contain juvenile worms that do NOT infect people

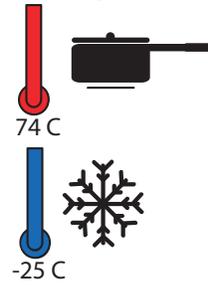
How bad can it get?



30 No risk to people

Protect myself and others

- The meat of infected animals can be eaten
- Cysts can be trimmed out or killed by:
 - Normal cooking temperatures
- OR
- Freezing
- Cysts can look unappetizing
 - Affected meat may be more acceptable if processed as ground meat



Symptoms in people

- None - people are not at risk

Safe for pets?

- Not raw
 - Cysts in fresh, unfrozen meat can infect pet dogs
 - Freeze the meat to kill the cysts



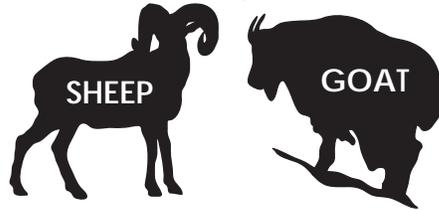
What causes it?

- The tapeworm *Taenia ovis krabbei*

Orf (Contagious Ecthyma)

Caution

Commonly infected wildlife



Is this animal infected?

- Infected animals have obvious single or multiple crusty lumps, usually on their lips
- Young animals are more likely to be affected & may have difficulty nursing
- Lesions can also occur on the:
 - Face
 - Inside the mouth
 - Udder
 - Above the hooves

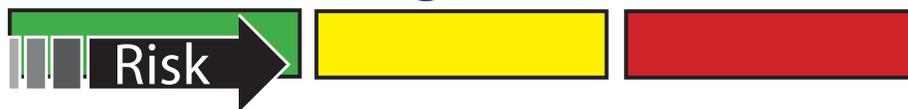


PHOTO: H. SCHWANTJE

Can I get it?

- Yes, by contacting affected skin
 - Especially if you have cuts on your skin

How bad can it get?



May require medical attention & treatment

Protect myself and others

- Wear disposable gloves
- Practise good hygiene
 - Wash your hands
 - Wash your clothes
- Trim away affected tissue
- Avoid contact between affected tissue and edible meat



Symptoms in people

- Red skin lesion(s) on the hand, arm or face
- Swollen, painful lymph nodes
- Mild fever
- Consult with your doctor for proper diagnosis and treatment
- Skin lesions usually go away within 6 weeks without scarring

Safe for pets?

- Yes



What causes it?

- A parapox-virus that infects both wild and domestic sheep and goats

Papillomas (Warts)



Commonly infected wildlife



Is this animal infected?

- Affected animals have hairless growths on their skin
- These growths are:
 - Variable in color, texture, number & size (from dime to baseball)
 - Often found around the eyes & neck, but may also be on the body or legs



PHOTO: KEVIN GILES, B.C. MINISTRY OF ENVIRONMENT

Can I get it?

- No
 - People cannot get this type of wart

How bad can it get?



No risk to people

Protect myself and others

- Trim away affected tissue - it is unappetizing and should not be eaten
- Once affected tissue has been trimmed away, the meat can be cooked and eaten



Symptoms in people

- None - people are not at risk

Safe for pets?

- Yes
- After trimming away affected tissue



What causes it?

- A virus in the Papillomavirus group

Plague



Commonly infected wildlife



Is this animal infected?

- Disease outbreaks in wildlife are rare
- Signs during outbreaks in rodents include:
 - Swollen and / or rotting lymph nodes
 - Multiple red spots on skin / organs (see photo below)



Can I get it?

- **YES!**
 - Being bitten by an infected rodent flea
 - Contact with abscesses on infected animals
 - Through bites and scratches
 - Inhaling infectious airborne droplets (rare)

How bad can it get?



Protect myself and others

- Avoid rodents
- Prevent flea bites by wearing:
 - Long sleeved clothing & disposable gloves
- Do not consume infected animals
- Wear a proper filter mask
- Wash puncture wounds and scratches with soap and water



Symptoms in people

- Bubonic form (flea bite)
 - Fever and general illness
 - Swollen / painful / hot lymph nodes
 - Tissue swelling around the flea bite
- Septicemic (in blood) or pneumonic (in lungs) form
 - Fever & signs of shock
 - Breathing problems, including cough
 - Excessive bleeding
 - Death

Safe for pets?

- **NO!**
 - Carnivores may be infected when they eat infected tissues
 - Once infected, pets can potentially cause illness to you or your family



What causes it?

- Bacteria called *Yersinia pestis*
- It is primarily a flea-transmitted disease

Rabies



Commonly infected wildlife



Is this animal infected?

- Rabies can occur in any mammal
 - e.g. bats (western Canada) and skunks (prairies)
- Affected animals may be found dead, be weak, or show unusual behaviour
 - Behaviour changes are not always obvious



Spread by Infected Saliva

Can I get it?

- **YES!**
 - From the bite or scratch of an infected animal
 - From saliva of infected animals that touches your eyes, nose, mouth, or skin wounds

How bad can it get?



Rabies is serious. Seek treatment as soon as possible if bitten by a wild animal

Protect myself and others

- Any animal that shows unusual behaviour should not be approached
- DO NOT TOUCH!
- Contact the local wildlife agency or Public Health Unit



Symptoms in people

- **RABIES IS FATAL** once symptoms appear
- Rabies can be prevented if treatment is given before symptoms appear
- Symptoms can take a long time to develop and may include:
 - Pain, tingling or itching near exposure site

If bitten or scratched by a wild animal:

- Clean & flush wound with soap and water
- Seek medical attention immediately
- Report bites according to provincial and territorial guidelines

Safe for pets?

- **NO!**
- Talk to your veterinarian about vaccines



What causes it?

- A virus of the family Rhabdoviridae
- Rabies testing requires brain tissue - avoid head shots to kill suspect animals

Ringworm

Caution

Commonly infected wildlife



Is this animal infected?

- Affected animals have areas of thickened skin with hair loss over the head or legs
- Skin may be red
- Hair easily breaks away
- Lesions can be itchy



Can I get it?

- Yes, by touching the skin & hair of infected animals
 - Note: some types of ringworm may be less contagious than others

How bad can it get?



Beware: May require medical attention

Protect myself and others

- Wear disposable gloves
- Wash your hands
- Disinfect your work space
- Avoid contact between affected skin / hair and edible meat
- WARNING:
 - Once infected, you can transmit ringworm to your family



Symptoms in people

- Skin lesions are:
 - Red, circular, and spread outwards
 - Vary from dry and scaly to moist and crusty
 - Often have a central healed area surrounded by a “ring” of infection
- Can be itchy

Safe for pets?

- No
 - Once infected, pets can be a source of infection to you and your family



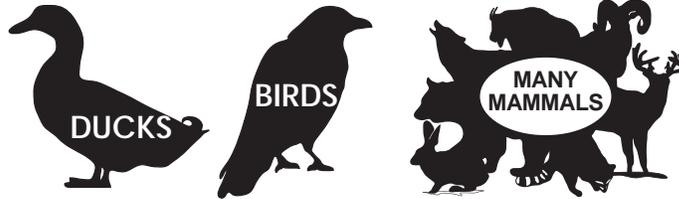
What causes it?

- Fungi that grow in the soil, on people and on animals (e.g., *Microsporum canis*, *Trichophyton verrucosum*)

Sarcocystis



Commonly infected wildlife



Is this animal infected?

- Affected birds have cream-colored cysts that are longer than they are wide in breast, heart and leg muscle
 - Cysts resemble rice grains, and can be several mm (1/4 inch) long
 - Cysts feel gritty when cut with a knife

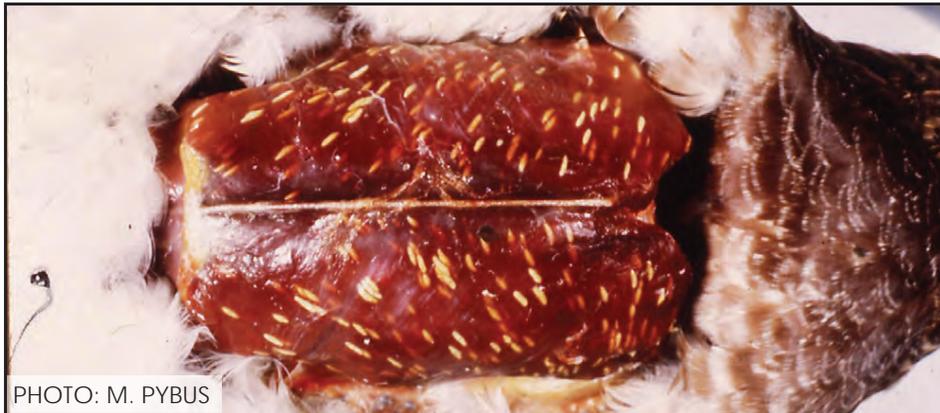


PHOTO: M. PYBUS

Can I get it?

- No

How bad can it get?

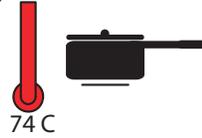


No known risk to people

No Known Risk to People

Protect myself and others

- Scientists recommend that people and pets do not eat heavily infected meat
- Heavily infected carcasses are unappetizing
- The parasite can be killed by cooking



Symptoms in people

- No known risk to people

Safe for pets?

- Not raw
 - Carnivores shed eggs in their feces, which then become infectious to birds
 - Pets may play a role in transmission of sarcocystis to birds



What causes it?

- Protozoan parasite called *Sarcocystis rileyi*
- Sarcocystis is found around the world in many types of animals, including deer, moose, caribou, elk, seals and domestic livestock

Sarcoptic Mange



Commonly infected wildlife



Is the animal infected?

- Affected animals show varying degrees of hairloss, usually on the legs & tail but over most of the body in severe cases
- Some animals may have thickened skin
- Badly affected animals are in poor body condition
 - Animal may be weak & fearless of people



Can I get it?

- Yes, but the risk appears to be low
 - Infections are rare and short-lived

How bad can it get?



Itchy, but rare and short lived; can be treated

Protect myself and others

- Wear disposable gloves
- Disinfect the work space after skinning / handling infected animals
- Wash your hands
- Wear long-sleeved clothing
- Shower and wash your clothing after handling wildlife



Symptoms in people

- Skin redness & rashes may be extremely irritating
- It can be treated - seek medical attention to:
 - Ensure it is not human mange (which can be more difficult to treat)
 - Treat the infection so you don't transmit it to your pets

Safe for pets?

- No
 - This is a skin disease of pet dogs and wild canines
 - Mange can be transferred to pets from infected animals by direct contact



What causes it?

- Parasitic mites called *Sarcoptes scabiei*
- Mites are related to spiders and ticks

Seroma (Hydrocyst)



Commonly infected wildlife



Is the animal infected?

- Yellow or reddish clear fluid under the skin or within muscle
- Can be very large (football-sized), and contain more than a gallon of fluid
 - Often present between the front legs
 - Can cause animal difficulty in moving
 - Affected individuals may be easier prey



Can I get it?

- **NO!** Seromas are *NOT* infectious

How bad can it get?

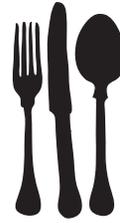


No risk to people

You Can't Get It

Protect myself and others

- Trim away affected tissue - it is unappetizing and should not be eaten
 - Once affected tissue has been trimmed away, the meat can be cooked and eaten
 - Any meat surrounding a seroma is safe to eat
- *Always* practice good hygiene by washing your hands after handling any wild animal



Symptoms in people

- None - people are not at risk
- The fluid inside a seroma is not dangerous to human health

Safe for pets?

- Yes
 - After trimming away affected tissue



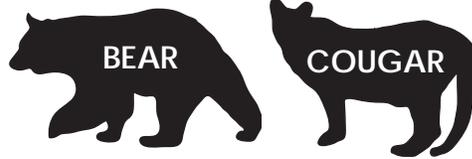
What causes it?

- Localized soft-tissue injury
 - They are not caused by an infection
 - They do not contain “pus”
- Fluid (blood serum) seeps from tiny ruptured blood vessels in injured areas
 - Fluid accumulates, often under the skin, and drains away after some time

Trichinellosis

Caution

Commonly infected wildlife



Is this animal infected?

- Wild animals rarely show signs of disease
- Always assume bear and cougar meat is infected



PHOTO: BCCDC LABORATORY SERVICES

Can I get it?

- **YES!**
 - By eating undercooked bear or cougar meat infected with the *Trichinella* worm
- You cannot get it from an infected person

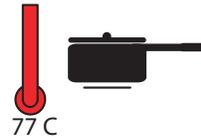
How bad can it get?



No or mild symptoms most common; can be fatal

Protect myself and others

- DO NOT EAT RAW MEAT
- Kill the worms!
 - Cook meat thoroughly
 - **Heat to at least 77° C**
- Worms are **not** killed by
 - Smoking
 - Curing
 - Microwaving
 - Drying
 - Freezing



Symptoms in people

- Variable, but may include:
 - Nausea / Vomiting
 - Fatigue
 - Diarrhea
 - Aching Joints
 - Fever
 - Eye Swelling
 - Stomach Pain
 - Muscle Pain
- May be FATAL if the worms interfere with the heart, diaphragm, lungs or brain
- Consult with your doctor if you have any of the above symptoms for up to 8 weeks after eating wild bear or cougar meat

Safe for pets?

- **NOT RAW!** Cook it first



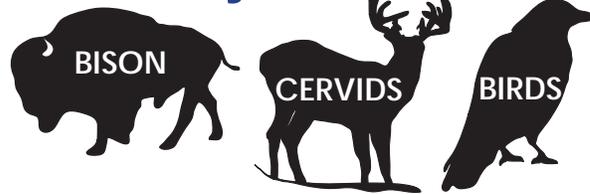
What causes it?

- A roundworm called *Trichinella*, found in the muscles of infected animals

Tuberculosis

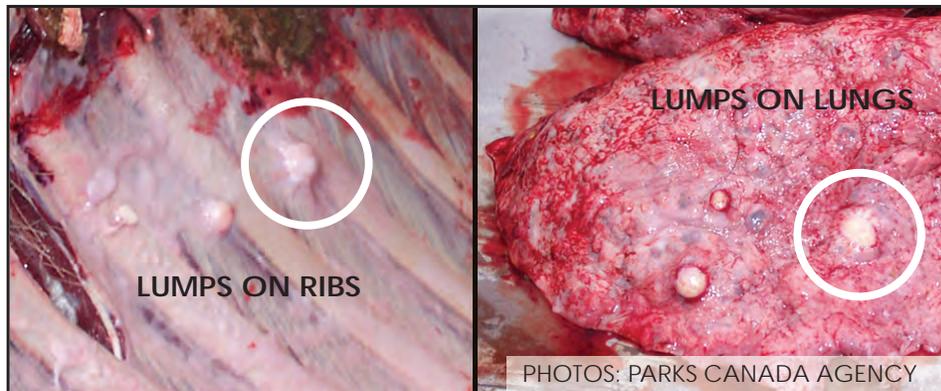
Caution

Commonly infected wildlife



Is this animal infected?

- This is a rare, slowly worsening disease
- Affected animals may have no signs or be in poor body condition
- Small, multiple, round gritty lumps in lymph nodes and on lungs & rib cage are typical



Can I get it?

- **YES!**
 - Inhaling bacteria from: open wounds, fluids from the mouth and nose, or feces of an infected animal
 - Directly through breaks in the skin (rare)

How bad can it get?



50 Gets worse with time; fatal if untreated

Protect myself and others

- If you see multiple pale (tan or yellow) rounded lumps on lungs, rib cage or internal organs in bison or cervids:
 - STOP HANDLING THE ANIMAL
 - Wash your hands
 - Wear a proper filter mask
 - Contact the local wildlife agency or Public Health Unit



Symptoms in people

- Dependent on where lesions are located
- Lungs
 - Prolonged illness with fever, cough, night sweats, weight loss
 - Occasionally will cough up blood
- Intestines
 - Stomach pain
 - Diarrhea
- Symptoms get worse with time
- Untreated disease can be FATAL
- Immunosuppressed people are at a higher risk

Safe for pets?

- NO!



What causes it?

- Bacteria called *Mycobacterium bovis* in wood bison and *Mycobacterium avium* in birds

Tularemia

Caution

Commonly infected wildlife



Is this animal infected?

- Affected animals may be very sick or dead & in good body condition
- An enlarged liver or spleen is common
- Tiny pale spots & thin white strands of material may be seen on the organs



Can I get it?

- **YES!**
 - Bites or scratches from infected wildlife
 - Contact with meat, water, feces, urine or body parts of infected animals
 - Breathing in dust from pelts and paws

How bad can it get?



Spread by Insect Bites, Eating It or Breathing It In

52 Fever-like symptoms; early treatment reduces severity

Protect myself and others

- Take precautions, avoid tick bites!
 - Wear long sleeved clothing
 - Use insect repellents
 - Inspect yourself for, and remove, all ticks
- Handle animals found dead near human water sources with caution and report to the local wildlife agency
- When handling, dressing or skinning any wild animal
 - Wear disposable gloves
 - Wash hands well afterwards
- Cook beaver, hare & rabbit meat before eating it



Symptoms in people

- Symptoms appear up to 14 days after infection:
 - Fever
 - Headache
 - Muscle pain
 - Chills
 - Swollen, painful lymph nodes
 - Ulcer at the site of tick bite or animal contact
 - Other symptoms can occur but are rare

Safe for pets?

- **NOT RAW!**
 - Dogs and cats can die from tularemia



What causes it?

- Bacteria called *Francisella tularensis*

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In British Columbia, contact:

Provincial Wildlife Veterinarian

250 361-7619

BC Wildlife Health Program

www.gov.bc.ca/wildlifehealth

BC Centre for Disease Control

www.bccdc.ca

Public Health

<http://www2.gov.bc.ca/gov/content/health>

In Alberta, contact:

Provincial Wildlife Disease Specialist

780 427-3462

Fish and Wildlife Division

<https://www.alberta.ca/fish-wildlife.aspx>

Wildlife Diseases

<https://www.alberta.ca/wildlife-diseases.aspx>

Alberta MyHealth

<https://myhealth.alberta.ca/>

In Saskatchewan, contact:

Saskatchewan Wildlife

www.saskatchewan.ca/business/environmental-protection-and-sustainability/wildlife-and-conservation

Public Health

www.saskatchewan.ca/residents/health

Wildlife Diseases

www.saskatchewan.ca/residents/environment-public-health-and-safety/wildlife-issues/fish-and-wildlife-diseases

In Manitoba, contact:

Health Links-Info Santé

1 888 315-9257

Environmental Health

www.gov.mb.ca/health/publichealth/environmentalhealth

Public Health Offices

www.gov.mb.ca/health/publichealth/offices

Manitoba Conservation and Climate

www.gov.mb.ca/sd

In Yukon, contact:

Animal Health Unit

867 667-5600

Yukon Environment

<https://yukon.ca/en/department-environment>

Yukon Department of Health and Social Services

<https://yukon.ca/en/department-health-social-services>

In Northwest Territories, contact:

NWT Wildlife Health

www.enr.gov.nt.ca/en/services/wildlife-diseases

NWT Environment and Natural Resources

www.enr.gov.nt.ca/en

Public Health

www.hss.gov.nt.ca/en