Zoonoses Associated with Wild Carnivores

This document provides information on various diseases that can be passed from wild canids (wolves, coyotes), wild felids (bobcat, lynx and cougar), bears and other carnivorous species to humans. Often these diseases do not make the animal appear sick but can cause serious illness in humans. Persons with specific medical conditions such as a chronic illness, immunodeficiency and pregnancy may be at higher risk of developing disease or complications from a zoonotic disease and should consult with their physician before working with animals. The diseases associated with wild carnivores include rabies, ringworm and external parasites, tularemia, brucellosis, leptospirosis, yersiniosis, campylobacterosis, salmonellosis, cryptosporidiosis, giardiasis, infections with pathogenic *E. coli*, toxoplasmosis, echinococcosis, and cutaneous and visceral larval migrans.

Diseases associated with direct contact or bites:

Rabies is a fatal viral infection that can be transmitted by bites, scratches and mucus membrane exposure from an infected animal. Captive animals can be infected from contact with wildlife such as bats, skunks, and raccoons. Infected animals often exhibit neurological symptoms and unusual behavior. There is an effective vaccine available for people and most domestic animals including dogs but there is no rabies vaccine for wildlife or wildlife/domestic hybrids. Animals with undiagnosed neurological disease should be treated with caution to avoid bites and scratches. If a person is bitten or scratched by a suspect animal, the animal should be tested for rabies. If exposed, persons should seek post-exposure rabies prophylaxis from a medical professional. Persons who routinely work in high risk activities should be vaccinated against rabies.

Dermatophytosis is a fungal skin infection commonly known as “ringworm” and is seen in both animals and people as scaly round areas of hair loss. Transmission of ringworm is by direct skin-to-skin contact with an infected animal.

Diseases associated with vectors or contaminated materials:

External parasites such as fleas, ticks, lice and mites are occasionally transmitted by close contact with an infested animal or handling infested bedding. Animals and animal housing areas should be routinely treated for external parasites.

Tularemia and Leptospirosis are bacterial infections of wild rodents and rabbits that occasionally infect wild carnivores that hunt or drink contaminated water. People can be infected by contact with infected body fluids and tissues, oral ingestion and inhalation of contaminated water or materials and tick bites.

Salmonellosis, campylobacterosis, cryptosporidiosis, yersiniosis, giardiasis, toxoplasmosis and infections with pathogenic *E. coli* are acquired by contact and oral ingestion of fecal material from infected animals.

Tapeworms (*Echinococcus, Taenia*) and roundworms (*Toxocara, Toxocaris, Baylisascaris*) are parasites in wild canids, felids and bears which are also transmitted to humans by ingestion of infected fecal material. Cutaneous larval migrans (hookworm) occurs when parasitic larva penetrate bare skin and cause a local skin reaction. This primarily occurs from walking barefoot in areas contaminated with animal

feces. Animals infected with these bacterial, protozoal and parasitic diseases typically have diarrhea but some animals may show no symptoms of disease.

Avoid direct contact with feces and urine and use gloves and hand-washing to avoid accidental oral ingestion of animal waste. Any animal with diarrhea should be suspect of having a zoonotic disease.

Individuals with exposure to animals and animal environments may develop allergic reactions to animal proteins (allergens). Approximately 20-30 percent of individuals working with laboratory animals will develop an allergic reaction to animal proteins and 5-10 percent of individuals will develop asthma. Personnel may be exposed to allergens through inhalation and contact with skin, eyes and mucous membranes. Animal allergens may be present in animal dander, hair, skin, urine, saliva, serum and any contaminated feed or bedding materials. Risk factors for developing an allergic reaction include history of previous allergies to animals. The signs and symptoms of an allergic reaction are nasal discharge and congestion, conjunctivitis, tearing and eye itching, skin redness, rash or hives and lower airway symptoms (coughing, wheezing and shortness of breath). Individuals with symptoms suggestive of an allergic reaction related to a workplace allergen should report their concerns to their supervisor and consult a physician.

Transmission of zoonotic diseases from animals is primarily by direct contact, ingestion, indirect contact with insect vectors and contaminated inanimate objects, or inhalation of aerosolized materials. We can protect ourselves from most diseases by using the following procedures:

- Handle animals appropriately and safely to avoid bites and scratches.
- Thoroughly wash any bite or scratch wounds and report injuries.
- Do not eat, drink, apply makeup or use tobacco products while handling animals or in animal housing areas.
- Wear gloves when handling animals, animal tissues, body fluids and waste and wash hands after contact.
- Wear dedicated protective clothing such as a lab coat or coveralls when handling animals. Launder the soiled clothing separate from your personal clothes and preferably at the animal facility.
- Wear respiratory protection when appropriate.
- Keep animal areas clean and disinfect equipment after using it on animals or in animal areas.

Most importantly, familiarize yourself about the animals that you will be working with and the potential zoonotic diseases associated with each species. If at any time, you suspect that you have acquired a zoonotic disease, inform your supervisor and seek medical care.

If you have further questions, contact:

Office of Research Assurances	208-885-6162	Email: IACUC@uidaho.edu
Environmental Health and Safety	208-885-6524	Email: safety@uidaho.edu
Biosafety Officer	208-885-4054	Email: biosafety@uidaho.edu
Campus Veterinarian	208-885-8958	Email: campusvet@uidaho.edu