

## **WILDLIFE HEALTH FACT SHEET**

### **“MANGE” IN CALIFORNIA BIGHORN SHEEP**

This fact sheet gives an overview of a newly recognized health issue of wild sheep in the Similkameen Valley of southern British Columbia. The condition is known as Psoroptic mange, Psoroptic scabies or *Psoroptes* infestation. Since it was only recently diagnosed there is very little known about the disease in BC. We are hoping to fill in some of these blanks over the next few months and years.

Mange is a general term for a skin disease caused by tiny mites. Mites called *Psoroptes* ("sore-op-tees) live in the ears and on the bodies of a variety of animals. In some locations and in some animals a severe disease occurs where animals develop heavy crusts in and around their ears and over their bodies, lose hair and body condition and may die. The disease is considered an animal welfare issue due to the intense pain and irritation caused by the mites.

*Psoroptes* mites occur worldwide but are considered uncommon in domestic sheep and cattle since it is easily controlled with injectable wormers. Psoroptic mange was eradicated from Canadian domestic sheep in 1924. The skin disease in bighorn sheep is believed to be at least partly responsible for historic declines in bighorns in the western US in the late 1800's and early 1900's. It is still present, to varying degrees, in some US bighorn populations but has never been reported in Canada before.

The *Psoroptes* mite:

- *Psoroptes* mites live and feed on the skin surface and are highly contagious.
- All stages - eggs, larvae, nymphs and adults are on a single animal.
- Under favourable environmental conditions, the life cycle - from the egg to adult stage - is 11 - 19 days. A single female can start an infestation.
- Mites are transmitted by contact between animals or with materials with mites on them, such as fencing or feeders. They can survive in the environment for a month, or longer if it is cool.
- After contact, infested animals usually show symptoms within a month, however, some animals carry them in their ears with no obvious signs.
- Mite populations are generally lower in the spring and summer with increases in the fall/winter.
- The source of the mites cannot be determined from examining mites alone as they are not host specific - mites from rabbits, mule deer and bighorns all look the same. All types of these mites should be assumed to be infectious to most wild and domestic ungulates.

In individual sheep:

- Mild cases or early stages of the disease are usually seen on the ears/shoulders/neck with yellowish, scaly crusts that may spread with time to more of the body. The hair falls out and the skin thickens and darkens.
- The animal is very itchy and will damage its skin by scratching, rubbing and biting, often causing secondary bacterial infections.
- Decreased appetite, weight loss, anemia and emaciation can occur in animals with severe skin lesions. It isn't known why some animals develop severe disease but it may be a result of poor immune systems or the presence of other health issues.
- Adult sheep can regrow hair and recover with time, but may continue to carry mites in their ears. Such "carrier" animals may or may not show signs associated with the mites such as ear rubbing or head shaking.

In the herd:

- The reaction to mites in a bighorn herd can vary from no signs at all (a few mites in the ears) to massive fatal infections, although most animals in a herd are likely infested.
- A number of US herds have infestations with occasional animals exhibiting moderate to severe ear infections. This has not been seen before in Canadian bighorns.

Other skin diseases reported in bighorn sheep include mange caused by other mites, lice or tick infestations, toxicities, viral diseases or even trauma. Photographs of affected animals and samples collected in alcohol from live or dead animals with confirmation by a laboratory experienced with mite identification is necessary for proof of *Psoroptes* mites. *Psoroptes* mites were confirmed in one ram near Ollala, BC in February, 2011(see photo).

Captive or domestic animals are quarantined and treated with specific doses of injectable drugs. However, all animals must be treated, in some cases more than once, to eliminate the mites. If not, the untreated sheep will reinfest the herd. Attempts to eliminate the mites from wild sheep populations have not been successful to date. One herd of desert bighorns in New Mexico declined from over 200 to one affected ewe, at least partly due to mange in the 1990's. A number of bighorn populations in the US "live" with the condition and may have ongoing health problems with poor haircoats and potential poor hearing from ear crusts.

Psoroptes mites can spread to other bighorn herds and potentially to other wild and domestic ungulates (hoofed animals) that are in close contact. We do not understand the exact risk in a BC setting, however, do know that the mites are not contagious to humans.

We do not know how this disease came to the south Okanagan bighorns and hope to learn this and other facts by starting a research project. The experience and expertise of others will be called on for discussions about Psoroptic mange so that this information and related research can help determine what management actions should or can be considered.

We appreciate the Ollala and area outdoorsmen for reporting this ram's condition and assisting with sampling. Residents of the south Okanagan and Similkameen should continue to report any sightings of abnormalities in wildlife and the location of the sighting to the Ministry Wildlife Veterinarian or Regional Wildlife Biologists.

