



Chronic Wasting Disease

Although Chronic Wasting Disease (CWD) is not a recent discovery, it has become quite a concern for the Arizona Department of Game and Fish. CWD has been found in Colorado, Utah, and New Mexico but, although it's spreading fast, has not yet been found in Arizona.

So what is CWD? It is a member of a family of diseases known as Prion diseases, which include: mad-cow disease, scrapie, which occurs in domestic sheep and goats, and Creutzfeldt-Jakob Disease (CJD), which occurs in humans. CWD affects the brain and nervous system of members of the *cervidae* family, which includes deer and elk. Currently, only three species in the *cervidae* family are known to be effected: the mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), and the Rocky Mountain elk (*Cervus elaphus nelsoni*).

Early symptoms of CWD may include low weight, poor hair condition, visible salivation, excessive drinking, loss of fear of humans, and stumbling gait. Ultimately, the animal quits eating and slowly starves to death.

The origin of chronic wasting disease is not known for certain. However the disease originated, a more immediate concern is how we can eliminate the spread of this disease.

The first signs of CWD were recorded in 1967, in animals that were contained with in a captive wildlife research facility near Ft. Collins, Colorado. In 1980, further signs of CWD were reported from a similar research unit located in southeastern Wyoming. Because these two facilities were known to have exchanged individuals for breeding purposes, researchers quickly realized that this disease was infectious—and not limited to deer, as the first signs in elk were reported as well.

By 1985, CWD was found in free-range populations of deer and elk near both facilities. It is not known if the disease started in the captive or wild populations but, because there were many opportunities for interaction between the two populations due to open fencing and common feeding grounds, this issue seemed to quickly

become irrelevant. The disease soon gained the label of an epidemic.

The thousands of game farms within the United States and Canada are thought to be a major source for the spread of CWD. At some point, each of these facilities had to obtain a breeding pair or population, which may have been infected. The high rate of trade of the meat and antlers from these facilities also gave the disease many opportunities to easily spread. Until relatively recently, trade regulations of animals between states were not strictly enforced or were simply not present.

Not much is known about exactly how CWD is spread because of lack of research on the disease. According to information found on the Arizona Antelope Foundation web page, the most common form of transmission of CWD is thought to be from animal-animal contact, through saliva, urine, and feces. It is also thought that CWD can be spread from infected surfaces, including soil.

Since the first signs of CWD, people have taken great efforts to control its distribution, including killing entire deer and elk populations. More recently, restrictions have been placed on the transportation of deer and elk, not only from state to state but within states as well, efforts have been made to increase hunter awareness, and known infected environments have been treated with chemicals—with what seems to be little success.

Despite the traumatic effects this disease can have on our deer and elk populations, a major concern to humans is the spread of this disease to us. Although CWD and CJD belong to the same family, the research that has been done has shown that humans are not in direct danger of infection. Chronic Wasting Disease has not been shown to lead to Creutzfeldt-Jakob Disease in humans. This, however, does not suggest that it is safe to harvest infected animals.

Chronic Wasting Disease has not yet appeared in populations of deer and elk within the state of Arizona and great efforts are being made to keep it this way. In May 2002, restrictions on the importation of certain members of the *cervidae* family into the state of Arizona became law. Efforts are also being made to educate Arizona hunters to recognize the signs exhibited by infected animals and to not harvest those individuals, but report them immediately to the Arizona Department of Game & Fish.

One of the difficulties in dealing with CWD is that there is currently no testing available for live animals, so sampling existing populations for presence of the disease is not possible. To help deal with this problem, the Arizona Department of Game and Fish started a survey program in 1998. According to the data on their web page, as of February 16, 2005 the department has found no evidence of CWD in animals from Arizona after sampling 3,511 deceased deer and elk.

It seems that our best current defense against Chronic Wasting Disease is awareness. Public awareness is always a good foundation in the prevention of disease. However, much research has yet to be done on Prion diseases, specifically Chronic Wasting Disease, to help eliminate the threat.

Further information about Prion diseases and their threats to humans and animals can be found both online and in a library. Online sources include: The Arizona Game and Fish Department (www.azgfd.gov), The Arizona Antelope Foundation (www.azantelope.org), the Center for Disease Control (www.cdc.gov) and the Chronic Wasting Disease Alliance (www.cwd-info.org). If you see a deer or elk with the symptoms of CWD, please call the Arizona Department of Game and Fish department at 1-800-352-0700.