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For Immediate Release

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March 18, 2004

GRIM INVESTIGATION CONTINUES INTO MASSIVE ELK DEATHS

The number of dead elk being found in a 50-square-mile area southwest of Rawlins has slowed, but the grim investigation into the mysterious, sudden die-off of some 295 animals is a still a top priority for University of Wyoming and Wyoming Game and Fish Department researchers.

“The list of things we have proved it isn’t is growing all the time,” says UW Toxicology Professor Merl Raisbeck, who is working nearly full time on the elk case. “I am coming to believe that we are dealing with something that no one has seen before.”

Game and Fish Veterinarian Walt Cook, who is serving as a liaison between his agency and the Wyoming State Veterinary Laboratory, agrees. “It may be something unknown or very rare. We may never have an absolute answer.”

Raisbeck notes that “the pattern or hallmark” of the macabre malady would suggest that it is poisonous. “However, until we actually isolate something toxic or prove some other etiology,

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we just don't know. If there is a poison involved, the elk must have been eating something that the other animals in the same area didn't eat."

Since the mostly adult female elk were first discovered crippled and with muscle degeneration in early February, Raisbeck, Professor Elizabeth Williams, and other researchers in the College of Agriculture's Department of Veterinary Sciences have studied tissue, waste, plant, soil, and water samples and have ruled out common bacterial and viral infections as well as nitrates, cyanide, food additives, pesticides, nerve gas, a variety of metals, salt poisoning, coalbed methane water, oxalates, selenium, abuse drugs, poison hemlock, nightshade plants, predator control agents, a number of different mycotoxins, domoic acid (which causes similar symptoms in shellfish), botulism, chronic wasting disease, brucellosis, parasites, and some biotoxins.

Cook says people from throughout the nation have offered suggestions, and he would like to let them know that the noxious weed *Halogeton glomeratus* has been eliminated as a possibility along with calcium and magnesium deficiencies.

Whether the elk overexerted themselves by running, Cook adds, is just a hypothesis. "There's no indication that they experienced any kind of stress," he says. "There were a couple of wolves close by, but none of them preyed on the animals when they were down."

The game and fish veterinarian says tests are being done to determine whether lichen found in the rumen contents of some of the first elk to die might be a factor in the mortalities. Research conducted in the 1950s maintained that lichen could cause a similar syndrome in cattle and sheep. The fungus is currently being fed to healthy elk and mice to see if any symptoms are reproduced.

Tick paralysis is also being investigated in collaboration with the USDA's Arthropod-Borne Disease Research Laboratory (ABADRL) in tests involving sheep, but both Raisbeck and Cook doubt that it would have been possible for hundreds of elk to die at the same time during the winter as the result of tick bites.

All four of the ailing elk brought to the state veterinary laboratory to be nursed after the initial discovery of the dead and immobile animals have also died. Cook says he regrets having to euthanize the last of the elk on Wednesday. "She had been eating and drinking, but she had a bad night and was starting to look the way the other ones did before they died. We didn't want her to suffer."

Afflicted elk in the field along the southern edge of the Red Desert who died or were euthanized have been left to decompose. "We're interested in whether scavengers might pick up on this and have similar problems, but that doesn't seem to be appearing," Cook says.

It is possible that more felled animals could still be found. "They have moved into a more remote area where it's more difficult to keep track of them. We're finding fewer than we did before, but that could be due to the visibility problem," Cook reports. Vehicle searches are still being conducted, and Raisbeck says it is important to thoroughly examine the environment that the elk are in and have migrated through.

Meanwhile, Cook praises "the fantastic collaboration" that is enabling veterinarians and scientists to do their work. In addition to the field investigations being conducted by his agency and ABADRL and the diagnostic efforts of the Wyoming State Veterinary Laboratory, help is being given by the Wyoming Livestock Board and State Veterinarian Jim Logan.

"What I foresee happening in the next month or so is that the experts will get together and decide what they think the cause most probably is and how far they want to go to find a

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definitive answer,” Cook says. “We will keep a close eye on other elk herds and animals that are out there, hoping we don’t have a repeat scenario next year.”

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