Use of Gallagher® 2-Layer Deer-Exclusion Fencing to Temporarily Deter White-Tailed Deer Browsing in Food Plots

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Warm-season food plots provide supplemental nutrition to white-tailed deer (*Odocoileus virginianus*). Large-seeded legumes such as soybeans, lablab, cowpeas, and others are a common component of warm-season food plots that deer prefer to browse early in development, preventing the food plot from reaching the highest possible nutritional value. We tested a Gallagher® Animal Management Systems 2-layer deer-exclusion fence design at two 400 m^2 warm-season food plots in Madison County, Georgia. Each food plot contained a mixture of cowpeas and Lablab Plus, marketed by Tecomate® Wildlife Systems. We enclosed a 125 m^2 (31%) portion of each food plot with Gallagher's 2-layer fence design and randomly established 9 1 m^2, sample plots within each food plot which included 3 that received no protection, 3 protected by the Gallagher fencing, and 3 control sample plots enclosed in wire fencing. We measured browse percentage and maximum plant height over a 6-week period and tested the effectiveness of fence treatment over time. Unprotected sample plots received more browse pressure (range 19%–72%) than did sample plots protected by the Gallagher 2-layer deer-exclusion fencing (all values < 7%). Fenced sample plots attained plant heights greater, at the 6th week of measurement, (mean= 31.5cm) than did unprotected sample plots (mean= 22.7cm). Our data indicated that Gallagher 2-layer deer-exclusion fencing could reduce unwanted deer browsing and allow plots of these species to establish and tolerate deer browsing pressure.

Retrospective Barrier Placements for a Skunk Rabies Epizootic in NW Wyoming

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Striped skunks (*Mephitis mephitis*) are the most important reservoir of rabies on the Great Plains. In August, 1988 a skunk rabies epizootic proceeded from the "index case" west of Cowley, WY. By 1991, epizootic had reached nearly all areas in the Shoshone River Basin (SRB), and it ended in 1993. This area and the remainder of the SRB had been previously considered rabies-free. The USDA's Wildlife Services (WS) cooperated with state and local officials in a rabies monitoring and control program starting in 1990. Using information from the literature, signs, tracks, and radio-telemetry of normal and rabid skunks, WS decided to trap mainly riparian and irrigated agricultural habitats in the valley's floor. Here, a mosaic of irrigation ditches (e.g., Buffalo Bill Cody's circa 1908) was shown to be travel corridors for skunks. Trapped species (>1,000 skunks) were sent to the Wyoming State Veterinary Laboratory for rabies testing using immuno-fluorescent of brain tissues. The study area extended from the Bighorn Canyon and Lake on the east up river to Buffalo Bill Reservoir on the west. The study area and subsequent epizootic encompassed a portion of the Shoshone River ~90 km in length and an area of ~85,000 ha (54

mi^2). Traditional surveillance data composed <10% of the sample – public referrals of suspiciously acting wildlife and road kills. We analyzed 215 rabid skunk locations and dates together with GIS hydrology and land use information. Hypothetical barriers were modeled using potential synergisms formed among restricted habitat, depopulation, and vaccine (if one had been available), combined with the natural epizootiology of this rabies strain with high virulence. Two dates for barrier locations were identified that may have halted the spreading epizootic: 1) before April 1989, when the rabies epizootic might have been limited to Polecat and Sage Creeks, and 2) June 1989, when the epizootic may have been stopped before it entered the majority of SRB including the larger population centers of Byron, Powell, and Cody.

Hair Identification: The Mammalian Fingerprint

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Microscopic hair identification has been used as an analysis tool in a broad range of biological studies and has diverse applications in the fields of wildlife biology, anthropology, forensics, and natural resource management. Examining differences in cortex patterns, medulla characteristics, cuticular scale anatomy, shape, size, and color can be used to reliably identify mammalian guard hairs. Microscopic hair identification provides a diagnostic tool for identifying mammalian hair and has broad applications in the field of wildlife damage management. Hair collected from scent stations can provide presence confirmation and population density estimates on carnivores and ungulates, while hairs extracted from scats and owl pellets can be used to determine prey composition and consumption of terrestrial predators and raptors, and material collected from the site of a depredation event can be used to identify the culprit of livestock attacks. Hair identification is an inexpensive, non-intrusive method of collecting data and can be utilized by virtually anyone. The purpose of this project is to give a brief history of the field of mammalian hair identification, outline some of the basic techniques in examining individual hairs, provide a case study on a current food habits project involving hair identification, and discuss the benefits and drawbacks of utilizing this technique.

Investigations into Earthworm Control on Airports

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Earthworms, though generally considered beneficial for soil conditioning, can become a hazard at airports. When found in large numbers on runways or taxiways after heavy rainfall, they create slippery conditions for aircraft rolling over them. Additionally, earthworms attract birds, especially gulls, thereby increasing the risk of bird strikes to aircraft that are landing or taking off. For example, during a 35-minute period on 3 September 2004 at Calgary International Airport (YYC), a B737 of Westjet and an A319 of Air Canada aborted takeoffs after multiple strikes with gulls attracted to the runways to feed on earthworms. The B737 had strikes and damage to both engines and the A319 had damage (apparently an uncontained failure) to one engine. In the Netherlands, they build concrete moats to keep worms off of runways. There are