



Credit: The Wildlife Society

Lead on the Loose

Hunters have been banned from using lead ammunition when shooting waterfowl. But a study by Jonathan Pauli and Steven Buskirk of the University of Wyoming in *The Journal of Wildlife Management* (vol. 71/1) confirms that lead still sneaks into the environment by way of recreational hunting. Recreational hunters may kill scores of prairie dogs without retrieving or burying the carcasses. As recreational hunters tend to use expanding bullets, which fragment on impact, the authors hypothesized that the carcasses may contain enough lead to poison animals that feed on the remains. To test their theory, researchers shot prairie dogs with both expanding and non-expanding bullets, and found that expanding bullets left behind as much as 150 times more lead. Many of the lead fragments were small enough to be ingested by scavenging animals yet large enough to have toxic effects to wildlife such as raptors. The authors suggest wildlife agencies should ban expanding lead bullets for recreational use.



Credit: SpringerLink

No Fire for these Fliers

In recent years the use of fire in grassland management has gained traction, with benefits that include rejuvenating vegetation and keeping ecosystems in balance. Those benefits, however, don't extend to rare butterflies, according to a study in the *Journal of Insect Conservation* (11/3).

Wife-husband research team Ann and Scott Swengel compiled data they had gathered over 15 years of conducting butterfly population surveys. Most of the sites they surveyed incorporated burning into their management schemes, but three sites were kept unburned for many years of the surveys. Looking specifically at three butterfly species that were locally threatened or endangered, the team found that specialist butterfly species thrived in these unburned sites. The rare species invariably fared worse in the burned sites. The Swengels also discovered burned sites took between six and eight years to recover sufficiently to allow the specialist butterfly numbers to grow again. Their results raise a concern about how rare species, especially those that rely on specific habitats and diets, may respond to burning.



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Stressed Out Elk

Wolves exercise a clear and direct effect on elk populations, by killing and eating them. But according to a study in *Science* (vol. 315/5814), wolves have a hand in controlling elk populations in another way. Led by Scott Creel, a team of ecologists and biologists from Montana State University measured the physiological responses of elk in the Greater Yellowstone Ecosystem when wolves were present in high densities. Wolf populations in Yellowstone rose significantly after reintroduction efforts in 1995 and 1996. The researchers found that in areas where wolf numbers were high relative to elk numbers, female elk had lower levels of the reproductive hormone progesterone than in areas with fewer wolves. Accordingly, elk in heavily preyed upon populations had fewer offspring than elk in populations that were more secure. The authors suggest that wolf predation exerts an indirect effect on elk populations: Threatened elk increase their anti-predator behavior, costing them energy that could have been devoted to reproduction.