

# Science for Environment Policy

## Reducing chemical pest control to prevent unintended poisoning of birds

**Use of the rodenticide bromadiolone** to control water voles in France may also result in population declines of the near-threatened red kite, a new study suggests. The researchers propose a range of alternative forms of controlling vole populations, limiting the need for environmentally-damaging poisons.

**Across France**, anticoagulant rodenticides (AVKs) are used to control population explosions of water voles (*Arvicola amphibious*), which can damage crops. The AVK bromadiolone has been used to control water voles since the 1980s. However, in 2005 its application was restricted to reduce its impact on wildlife and French regulations regarding vole control are currently undergoing further revision.

This study reported on the impact of intensive bromadiolone use in central France on the red kite (*Milvus milvus*), a bird species which feeds on carrion, such as dead voles, and is listed as near-threatened by the IUCN. In 2011, nearly 180 tonnes of bromadiolone were used in the Puy-de-Dome department, an area which hosts over 40% of France's red kite breeding population. Data from the surveillance network SAGIR<sup>1</sup> and the LPO Auvergne survey reported 28 red kites and 16 buzzards found dead between November and December 2011 in Puy-de-Dome.

Toxicological investigations on the red kites revealed that AVK poisoning was the suspected cause of death for all the birds. This could be confirmed beyond doubt for 11 of the birds. In addition, the researchers found that nine pairs of kites failed to breed because of death or disappearance of a parent. This suggests that poisoning had knock-on effects for the next generation.

Reducing the need for bromadiolone would clearly be beneficial to wildlife, and to this end the researchers propose a toolbox of reduced-[chemical](#) measures to help control voles:

1. Control of vole populations with traps and/or use of small quantity of bromadiolone only at low vole density.
2. Control of mole populations, as voles tend to use tunnels dug by moles.
3. Change of agricultural practices to destroy both mole and vole tunnels, for example, by using rotation mowing, grazing or tilling.
4. Change the landscape to deter voles, e.g. reduce the amount of grassland and increase hedgerows, or cut grass and install perches for birds of prey to encourage these natural predators.

There is some suggestion that these measures allow farmers to reduce bromadiolone use. For example, in the France-Comté region, these methods have been progressively adopted and the use of bromadiolone has rapidly declined; since 2004, bromadiolone use has been more than three times lower than the maximum quantity allowed by legislation. According to SAGIR, there has also been a decrease in the number of poisoned animals found in the same area during this period: from 541 specimens in 1997-1998, to 54 in 2004-2008.

The researchers specify that the drop in poisonings cannot be attributed to the new management with a high degree of accuracy; however, such a substantial change does indicate that the measures are likely to be the main cause. They conclude that such a toolbox could successfully be transferred to other areas, but would require rigorous monitoring to evaluate its efficiency in different regions.



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<sup>1</sup> SAGIR is an outbreak-based surveillance network based on the casual discovery of dead animals by hunter and environmental officers coordinating various observers including naturalists and farmers. See <http://www.oncfs.gouv.fr/Recherche-SAGIR-ru105>