

MEMO

Date: 20 February 2016

To: Senator Peters

From: Dr. Adrian Treves, University of Wisconsin-Madison, atreves@wisc.edu

Re: State of the science regarding Michigan wolf attacks on livestock and their management

I have been studying predator ecology since 1992 and wolf management since 1999 with >100 scientific papers published on the topics. Since 2013, I have been studying management efforts conducted by the state of Michigan between 1998 and 2014. My research was aimed at understanding the effectiveness of methods for preventing predation on livestock. The following bullet points reflect my conclusions about research into wolf-livestock conflicts.

- Although it seems obvious that killing a predator whose jaws are poised over a calf's throat should save the calf, most lethal methods are applied indirectly in wholly different situations. Government culling is usually implemented after potential predators are seen near livestock or weeks after an attack has occurred, sometimes far from the vicinity. Public hunting is even more indirect, usually being targeted tens of miles from farms and months after livestock losses, by individuals who are not aware of or invested in protecting livestock.
- Predator control to prevent livestock loss has rarely been subject to experimental tests on livestock farms, especially not using the gold standard for scientific inference (random-assignment to control and treatment with designs that avoid biases). The few examples of gold standard scientific evidence in the above situations come from studies of non-lethal methods conducted in the lab of Dr. T. Gehring of Central Michigan University. The studies concluded that livestock-guarding dogs and fences in the first study, and fladry (a visual deterrent) in the other study, were effective in preventing most threats and damages to livestock.

- Higher standards of evidence have been applied in tests of non-lethal methods than in tests of lethal methods for predator control, across our systematic sample of North American and European tests on livestock farms. In general, non-lethal methods were more effective than lethal methods in preventing predation on livestock (80% vs. 22%). Four out of 9 tests (44%) of lethal methods (government culling or public hunting) were followed by increases in predation on livestock. Zero tests of non-lethal methods had these counter-productive effects. Several often-cited tests of government culling had fatal flaws in design (details available upon request).
- Preliminary evidence from Michigan suggests that government trapping around farms with verified livestock losses had a counter-productive effect by raising subsequent livestock losses in other farms up to 16 km away. I recommend a random-assignment experimental test of current predator control by independent scientists. I recommend a moratorium on lethal control until that test is completed. In the meantime, non-lethal methods proven to work in Michigan (mentioned above) should be employed.
- Another frequently used justification for killing predators such as wolves, whether by government culling or public hunting and trapping, is that 'a little blood buys a lot of goodwill'. The best evidence is that people living in wolf range become (a) less supportive of wolf protection, (b) less tolerant of individual wolves, and (c) more likely to poach wolves, after the state government permitted culling and public hunting. Evidence suggests that agencies are better tolerated (not the wolves) if they kill wolves or allow the public to kill wolves.
- The best available scientific evidence does not support the use of government trapping, public hunting or trapping, or poaching to prevent predation on livestock or to advance wolf conservation. These methods have a measurable potential to exacerbate problems for livestock owners.