

# Turbo Fladry

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Effective protection from:



## Overview

Fladry is essentially a single strand of polywire with plastic flagging attached. In almost all cases this flagging is red, but it's not clear whether color plays a role in its effectiveness. The difference between turbo fladry and the original is, turbo fladry is electrified, just as with an electric fence. The focus of this fact-sheet is on electrified turbo fladry as it is considered significantly more effective and has a longer lasting effectiveness. The most important thing to keep in mind in using turbo fladry is that **it is a psychological, rather than physical, barrier to predators**. Turbo fladry is uniquely effective for wolves, and has shown to be less so for other predators.

## Using Turbo Fladry

The novelty of fladry is the key to its effectiveness. It is important that fladry be installed in such a way that it is as visually conspicuous as possible. The objective is to create a visual barrier of highly visible fluttering flags that wolves don't understand and are reluctant to cross. Relatively flat open terrain with short vegetation is the most suitable for turbo fladry. Fladry through brushy and broken terrain will not stand out as well as in the open.

Turbo fladry can be constructed similarly to a single wire electric fence. This means it can be stand alone or in combination an existing mesh or barbed wire fence. Observation with original fladry indicated that wolves would test it with their mouths. In this scenario electrified turbo fladry will deliver an educational shock that should help deter wolves longer into the future.

Tests and experience indicate that eventually wolves get used to seeing fladry and will eventually figure out a way to cross. How long this takes is variable, but the likely period of effectiveness is probably a number of months rather than years. Poorly placed or poorly constructed fladry may not even work for a few weeks. In addition to ensuring your fladry is always electrified and highly visible, some producers believe that frequently moving the fladry helps prevent wolves from becoming accustomed to it and extends the time of effectiveness. Once wolves figure out they can get around fladry, it's not likely to be effective again for that particular pack or individual.

Installation of turbo fladry is similar to that of electric fence including the need for proper grounding. Some users have installed brackets on an ATV to mount a fladry reel for easier roll out. In ideal situation a mile of turbo fladry could be set up by a couple of workers in a day. Conditions can vary however, and stream crossings or broken terrain will add time to the process. If tall grass or other vegetation needs to be removed time requirement is much longer.

## **Cost and maintenance**

Turbo fladry is not an inexpensive tool. While real costs vary, a list of sample costs are shown in the table below. Users experienced with turbo fladry recommend daily checking to ensure fence wire is “hot” and flagging is not tangled or wrapped around the wire. When livestock are moved or the threat of wolves is reduced, fladry should be removed. A reel for storage and subsequent redeployment is recommended.

| <b>Sample Material Costs for 1 mile of Turbo Fladry<br/>(enough to enclose a square 40 acre field)</b> |               |
|--|---------------|
| 1-mile roll turbo fladry   | \$3300        |
| Fence charger  | \$190         |
| Solar panel  | \$310         |
| Deep cycle battery   | \$120         |
| Charging and grounding supplies  | \$140         |
| Electric fence posts/clips (220)   | \$450         |
| Steel posts for corners/ braces (30)   | \$150         |
| Supplies to make reel for storage  | \$150         |
| <b>Total</b>   | <b>\$4810</b> |
| <b>Annual amortized cost 5-yr life</b>   | <b>\$962</b>  |

*Adapted from Mark Ono USDA Wildlife Services, 2018*



*Photo by Nathan Lance, Montana FWP*

## **Final Thoughts**

The keys to successful use of turbo fladry are to maintain its novelty and high level of visibility to wolves. Choosing the right location and optimizing the time of use are also important. The most effective scenario for turbo fladry is likely to be around a pasture during lambing or calving season, or short-term fall grazing of hay-fields, etc. While turbo fladry is not inexpensive, sometimes wildlife agencies or non-government organizations will provide materials to willing ranchers.

**USDA Wildlife Services has worked with livestock producers providing turbo fladry and assistance with installation to deter wolf livestock conflict. For more information call your local Wildlife Services representative.**

## **Further Reading**

Lance, N.J., S.W. Breck, C. Sime, P. Callahan and J.A. Shivik. 2010. Biological, technical and social aspects of applying electrified fladry for livestock protection from wolves (*Canis lupus*). *Wildlife Research* 37(8) 708-714.

Musiani, M., C. Mamo, L. Boitani, C. Callaghan, C.C. Gates, L. Mattei, E. Visalberghi, S.W. Breck, and G. Volpi. (2003). Wolf depredation trends and the use of fladry barriers to protect livestock in western North America. *Conservation Biology* 17, 1538–1547.

USDA AAPHIS Turbo Fladry Installation. <https://www.youtube.com/watch?v=xXZOj3XO7rg>