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Coordination and support of Wildlife warning systems in Tyrol

REPORT 2018

tirol
Unser Land

TIROLER JÄGERVERBAND

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1. Introduction

In spring, but especially in autumn, the wildlife crossing season usually reaches its peak. To prevent wildlife from crossing the road and to avoid accidents involving wildlife, the state of Tyrol, the hunting community, and the road maintenance authorities work closely together.

As part of the project, stretches of road with a high number of wildlife collisions are being equipped with wildlife warning systems. The installation of these warning devices has significantly reduced the number of accidents in recent years.

It's a win-win situation for drivers, animal welfare, and hunting, as the damage is incurred by hunters (loss of game) on the one hand, and by the vehicles and people involved on the other. The average economic damage per accident is approximately €2,500.

The main reasons for the increasing number of wildlife collisions are the fragmentation of habitats due to the construction of new roads, the increase in road traffic, high driving speeds, weather conditions, and the disturbance of wildlife in its habitat.
natural habitat.

According to Statistics Austria, 1,881 animals of red deer, roe deer, chamois, and mouflon were killed on Tyrolean roads in 2017/2018. However, the actual number is likely much higher, as many accidents go unreported.

The aim of the project is to reduce the number of traffic accidents involving wild animals on Tyrol's roads in the long term.

The engineering firm ibEder ÿ engineering office for biology has been managing and coordinating the project since 2014 on behalf of the state, Department of Transport and Roads.

2. Agreement between the State of Tyrol and the hunting community

The agreement concluded in 2014 between the State of Tyrol and the Tyrolean Hunting Association aims to reduce wildlife accidents on Tyrol's roads by means of wildlife warning systems.
The agreement covers the financial aspects of the project, the coordination between the partners, the procurement of equipment, maintenance and monitoring, as well as the re-equipment of road sections.

According to the revised agreement, the costs will in future be shared 60:40 between the hunting community and the state of Tyrol, with the road maintenance depots taking over all work such as assembly, maintenance and inspection.

The project is financially supported by funds from the Tyrolean Road Safety Fund.

In 2018, a total of €67,458.96 was spent on the purchase of wildlife warning systems.
of which €15,000 came from the Tyrolean Road Safety Fund.

3. How wildlife warning systems work

Wildlife warning devices are mounted on guideposts or guardrails. A distinction is made between optical wildlife warning devices, so-called reflectors, and acoustic wildlife warning devices, which emit a sound signal.

Optical wildlife warning devices reflect a portion of the headlight beam into the surrounding area, while acoustic wildlife warning devices emit a sound signal to deter animals from crossing the road. The devices are activated sequentially by the car's headlights, creating a so-called sound tunnel or reflection tunnel. The sound or reflections are intended to prevent wildlife from crossing the road.

to cross oncoming traffic.

One disadvantage, however, is that wildlife warning devices only activate in darkness and/or poor lighting conditions. Therefore, accidents involving wildlife cannot be reduced by using these devices during daylight hours.

Suppliers of wildlife warning devices are already working on alternative methods that will also prevent wildlife from crossing the road during the day when traffic is approaching.
should.

A study by Dr. Wolfgang Steiner at BOKU Vienna in the federal states of Burgenland, Lower Austria and Styria shows a reduction in wildlife accidents of an average of 40% when reflectors are used and a reduction of an average of 70% when reflectors and acoustic wildlife warning devices are combined.

However, a uniform approach to equipping roads with wildlife warning devices is not effective. Each road section must be inspected on-site, and the wildlife warning measures must be tailored to the specific conditions. Successful wildlife collision prevention requires consideration of contributing factors such as topography, wildlife feeding stations, wildlife population, and the number of accidents involving wildlife. The wildlife warning devices must also be installed at the correct intervals to maximize their effectiveness. Regular maintenance and cleaning of the devices are also essential.

Only by taking all these criteria into account can the best possible reduction in wildlife collisions be achieved.

In Tyrol, white and blue reflectors as well as acoustic wildlife warning devices from the company are currently in use. VTF-Wiwasol (WIWASOL 3) and the company WEGU-GFT (WEGU) are in use.

Experience has shown that the acoustic wildlife warning devices from WEGU-GFT, due to their design (welded housing, capacitor instead of battery),
They have a longer lifespan. For this reason, only the WEGU acoustic device was used in 2018.

Taking into account the topography and local conditions, reflectors are used alone or a combination of reflectors and acoustic wildlife warning devices.

If there is no vegetation along the road for at least 30 meters, reflectors are sufficient. If there is vegetation, or if the embankments are very steep (greater than 2:3), a combination of reflectors and acoustic wildlife warning devices is recommended.

4. Activity Report

An evaluation of the effectiveness of wildlife warning devices in Tyrol was conducted based on police-reported accidents involving wildlife. Since hunters' reports of roadkill are only partially available and the number of unreported roadkill incidents is high, the data is incomplete.

Based on the generated graphs, road sections along which the number of roadkill incidents is high can be identified. Significant reductions have been observed. Similarly, inadequately equipped routes or routes requiring action are identifiable.

In these evaluations, accidents involving wildlife were compared chronologically with those in areas already equipped with wildlife monitoring systems. Closer examination revealed a wide range of results, from "very good" to "hardly any change".

To further optimize the effectiveness of the wildlife warning systems, the routes were evaluated. and optimized where necessary. For this purpose, a guideline based on the RVS Wildlife Protection (RVS 04.03.12, edition 01.09.2007) was created. The guideline "Wildlife Warning Devices - Installation and Maintenance on State Roads in Tyrol" is intended to serve as a basis for road maintenance depots to correctly select and install the devices.

Since the monitoring and maintenance of the wildlife warning systems by the hunting community has not been sufficient, the road maintenance departments will carry out the checks in the future.

In 2018, the focus was on optimizing the already equipped routes. To this end, the routes were inspected, the type of equipment was optimized, and the devices were checked for functionality. Missing equipment was replaced.

Below are some examples of the evaluation for road sections that still need to be equipped, sections that need optimization, and those where the wildlife warning measures have significantly reduced the number of accidents.

The examples of L 38 Ellbögener Straße (Figure 1) and B 177 Seefelder Straße (Figure 2) clearly demonstrate that the wildlife warning systems installed in 2013 are insufficient to reduce the number of accidents involving wildlife. This can be due to various reasons, such as defective devices, the wrong choice of devices, or difficult terrain (e.g., steep embankments) in the surrounding area.

Routes like these need to be evaluated and optimized.

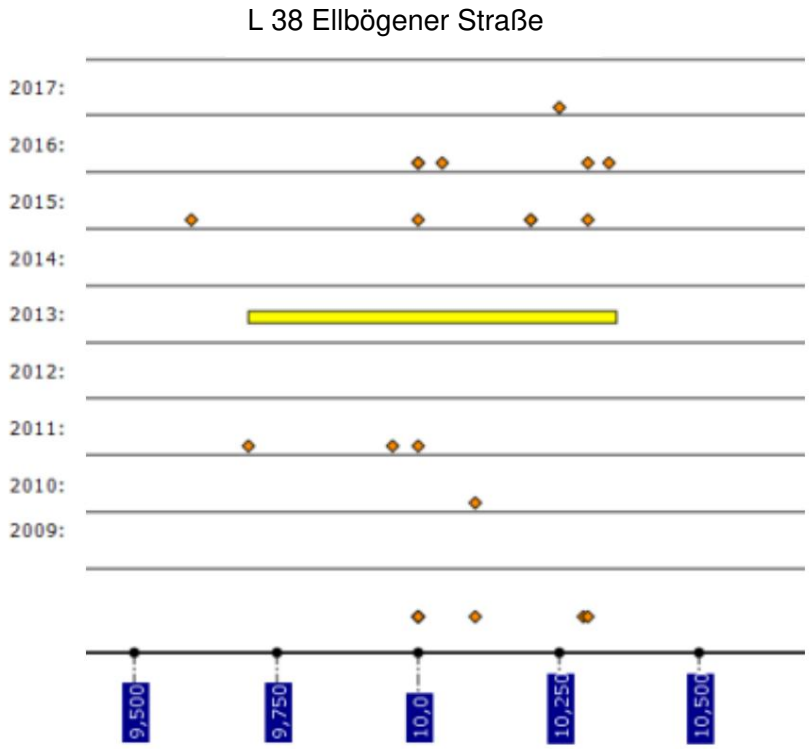

Figure 1: L 38 Ellbögener Straße; Yellow bar = optical and acoustic wildlife warning devices combined

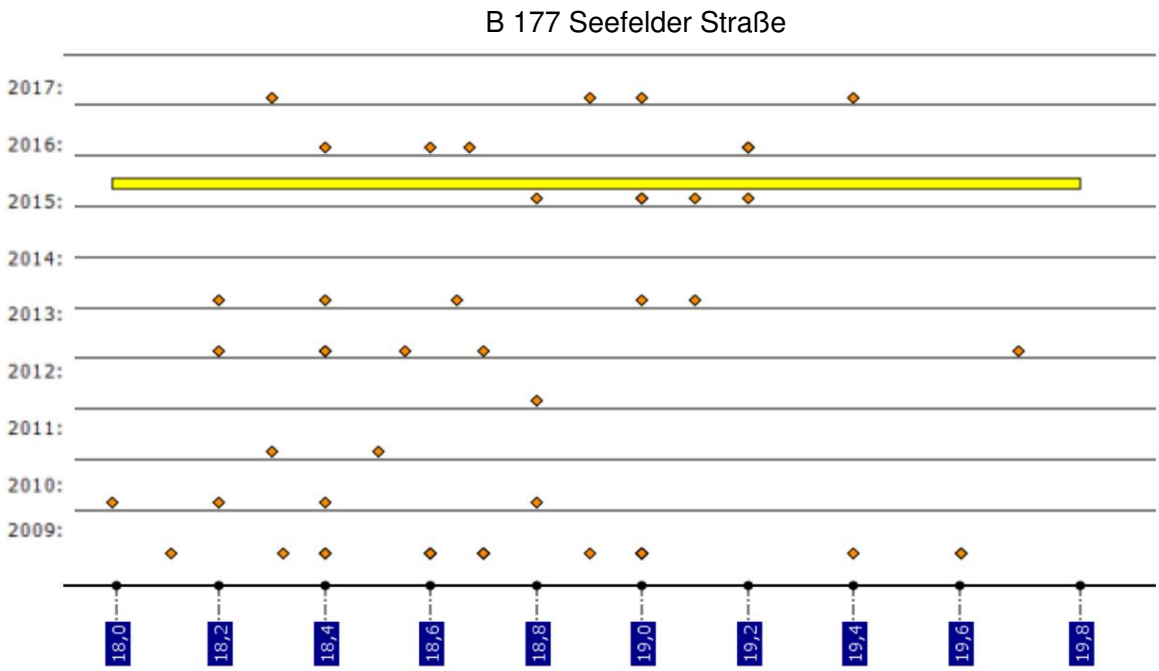

Figure 2: B 177 Seefelder Straße; Yellow bar = optical and acoustic wildlife warning devices combined

Along the B 180 Reschenstraße (Figure 4) the number of wildlife accidents between km 15.8 and 17.4 was significantly reduced by the use of reflectors and a combination of reflectors with acoustic wildlife warning devices.

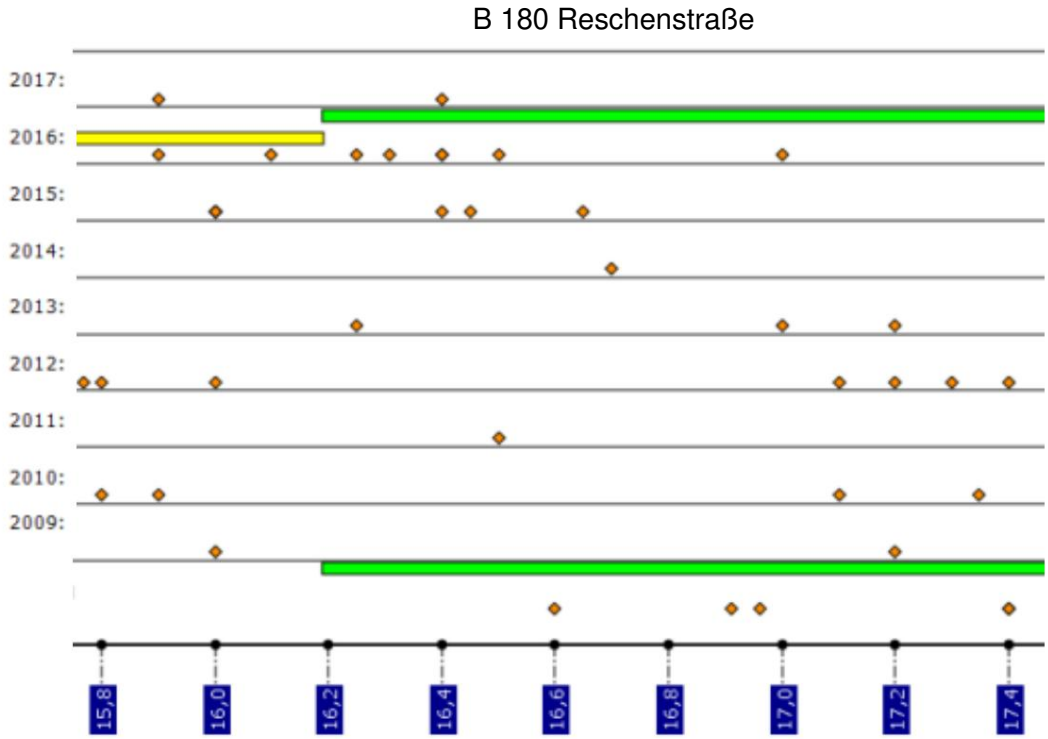

Figure 3: B 180 Reschenstraße; Yellow bar = optical and acoustic wildlife warning devices Combined; Green bar = reflectors

Figure 4 shows that a section of the L 10 Gschnitztalstraße, which has seen numerous wildlife collisions in recent years, was equipped with a combination of reflectors and acoustic wildlife warning devices in 2018. An evaluation of the effectiveness will be carried out as soon as data on roadkill is available.

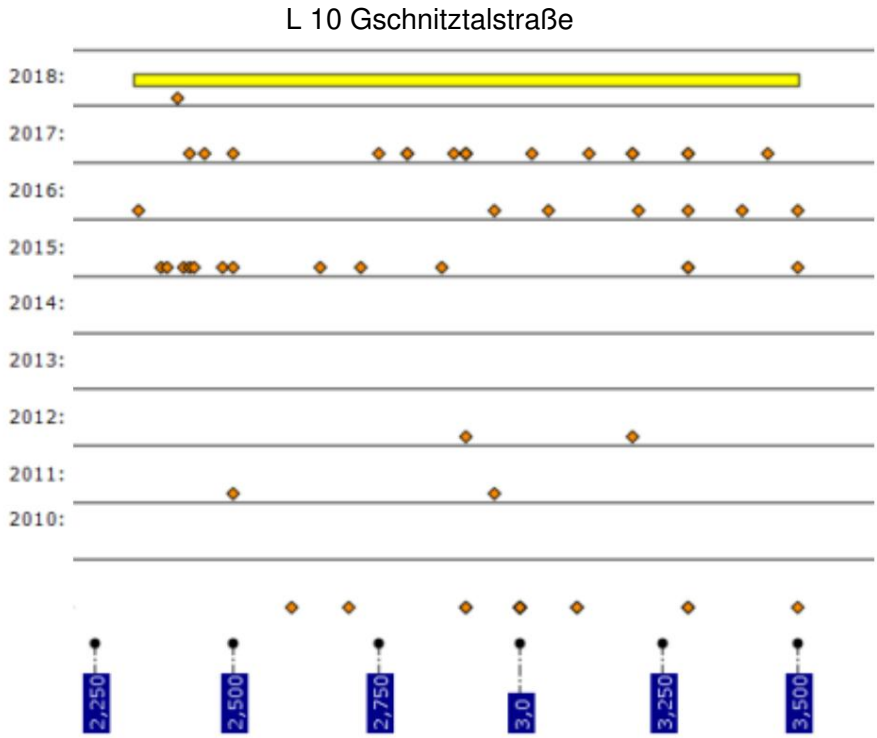

Figure 4: L 10 Gschnitztalstraße; Yellow bar = optical and acoustic wildlife warning devices combined

The following two images (5 and 6) show road sections with a high incidence of wildlife collisions. Action is needed here. These sections will be included in the project and equipped accordingly.

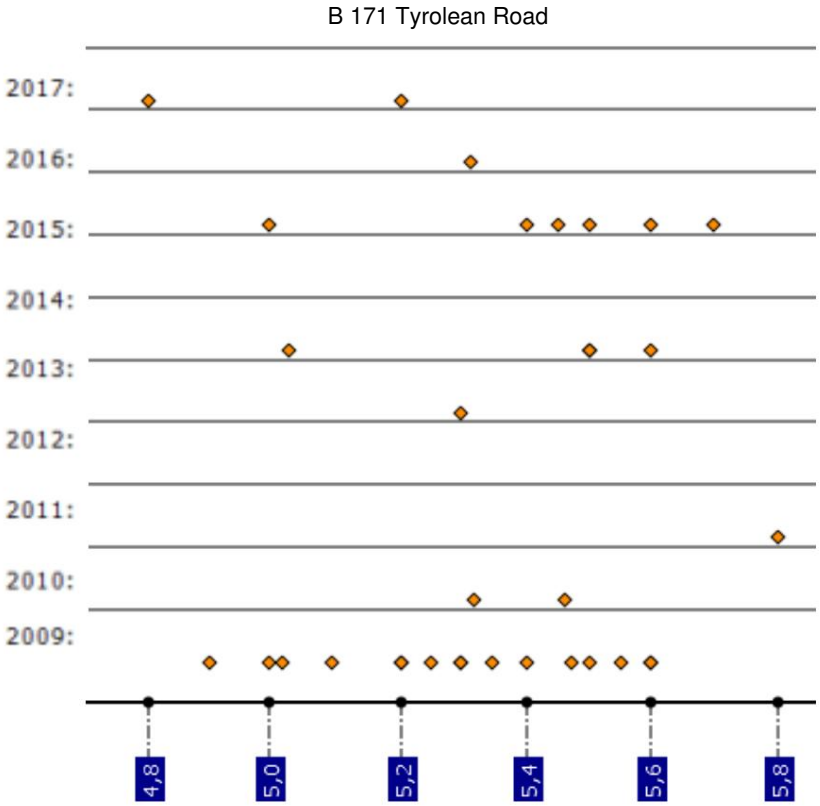

Figure 5: B 171 Tiroler Straße – section of road which has been closed due to an increased number of wildlife collisions should be equipped

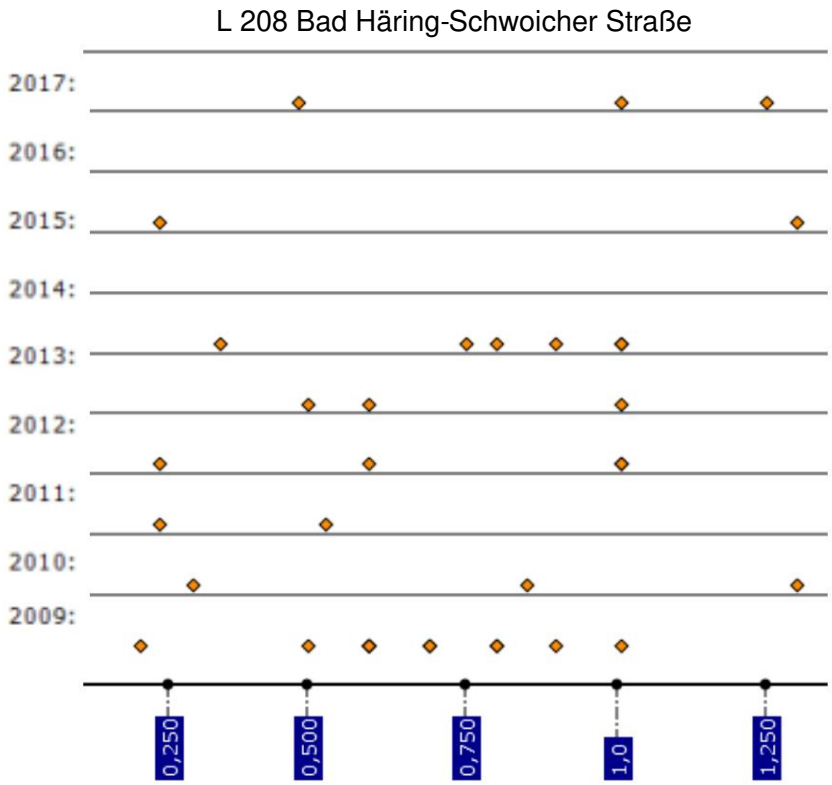

Figure 6: L 208 Bad Häring-Schwoicher Straße – road section which is due to
It should be equipped to withstand increased wildlife collisions.

5. Outlook

In order to standardize the future procedure regarding the collection of wildlife accident data, the selection of road sections to be equipped and the installation of wildlife warning devices, a guideline has been developed.

This includes:

- ÿ Criteria for wildlife warning measures on roads with wildlife crossings
- ÿ Type and mode of operation of wildlife warning devices
- ÿ Function check and cleaning
- ÿ Evaluation of existing wildlife warning sections, determination of the procedure
- ÿ Wildlife monitoring
- ÿ Future procedure

The equipment is installed according to the specifications in the guideline.

In 2019, priority will be given to further optimizing the routes that have already been evaluated. Random checks will ensure the quality of the installation. New routes will only be equipped if there is an urgent need.

Data on roadkill continues to be collected and added to the database.
Currently, the data is primarily based on police records. Discussions are already underway with hunters to adapt the wildlife casualty database so that the accident location is also recorded, allowing the data to be used accordingly.

In the future, road sections requiring action can be identified using the data.