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Monitoring of Mountain Bikers in a Sensitive Bird Area around the Tanzboden, Switzerland

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Introduction

Due to the high attractiveness of their landscape and the manifold topography, the adjacent regions Toggenburg and Linthregion in the Eastern part of Switzerland are increasingly visited by people searching for recreation. In the last few years especially, the numbers of mountain bikers have increased. A large part of this area around the Tanzboden (alt. 1449m) is under federal protection and that of the Canton of St. Gall. Among these endangered habitats are high moors, mire landscapes of especial beauty as well as landscapes and natural monuments of national importance. Particularly the mountain cock (*Tetrao gallus*) and the black grouse (*Tetrao tetrix*), which are sensitive to any nuisance and belong to the protected species on the red list, are dependent on these kinds of habitats.

At the moment, there exists no official connection crossing the protected area for cyclists between the two regions. Because of this conflict situation between the mountain bikers and nature protection, the Canton of St. Gall has given consent to a provisional opening of one biking route over the Tanzboden in order to canalize the bikers. But the official opening could result in an increase of cyclists on and off track and thus to an increased risk for the sensitive wildlife habitats. In order to prevent this, the Moutainbike Monitoring Tanzboden was initiated.

Methods

The monitoring consists of two phases: I: Determining the actual state before the official opening of the biking trail

II: Evaluating the results after opening and signalling of the trail.

This paper describes the results of the first phase which has been conducted between June and October 2005. Different monitoring methods had been applied at ten important junctions. One of the objectives was to test the effectiveness of these methods for this type of task. The applied methods were: manual counting (4 points, 8 days), interviews (4 points, 8 days), automatic cameras (2 points, continuous) and radar surveillance (1 point, continuous).

The signalling and opening of the route was planned for 2006. The second phase of the monitoring will most probably take place between June and October 2007 after people have adjusted to the new situation.

Radar surveillance for example, of which we hoped for significant data, showed difficulties in uneven topography and therefore produced data which was difficult to interpret. Due to other technical prob-

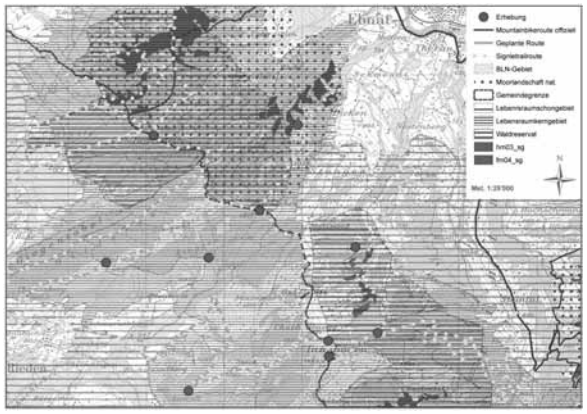

Figure 1: Overview of the monitoring points in the region around the Tanzboden.

Table 1: Evaluation of Monitoring Methods.

Method	Technical handling	Time needs	Manpower requirements	Reliability	Date Significance	Total Evaluation
Interviews	+	--	--	+	++	+
Manual counting	++	--	--	+	+	+
Photo cameras	-	+	++	--	-	-
Radar	-	+	++	-	--	-

lems, substantial data could not be obtained, neither by photo cameras nor by radar surveillance. Although the need for time and manpower of interviews and manual counting exceeded by far the available budget, they still seem to be the most appropriate methods. Interviews allow the obtaining of a lot of valuable data, i.e. age, sex, favoured routes, how often they take this route, used orientation guides (see table 1).

Results

A large majority of the bikers is male and takes the route once to twice a year. The majority of the bikers live within the adjacent communities. The assumption that the inofficial Single-trailmap (very popular among non local bikers, but not approved officially, therefore showing routes which cross protected areas) would be responsible for an increase of bikers during the last years could not be confirmed.

Figure 2 shows the distribution of the bikers within the investigation area. The gray arrows will be affected by the canalization of the route and show the official hiking trail on which it is not allowed to bike anyway. Not unexpected is the fact that bikers seem to follow the restaurants. Also the majority stays within their originating region and doesn't cross the peak of the Tanzboden.

Conclusion

Technical complex monitoring systems are often not suitable for an outdoor monitoring in remote areas (maintenance, power supply). Only a monitoring within a relatively small area will provide reliable data since the frequencies of visitors may differ greatly within the area of investigation. Each local position and problem requires a specific monitoring setting.

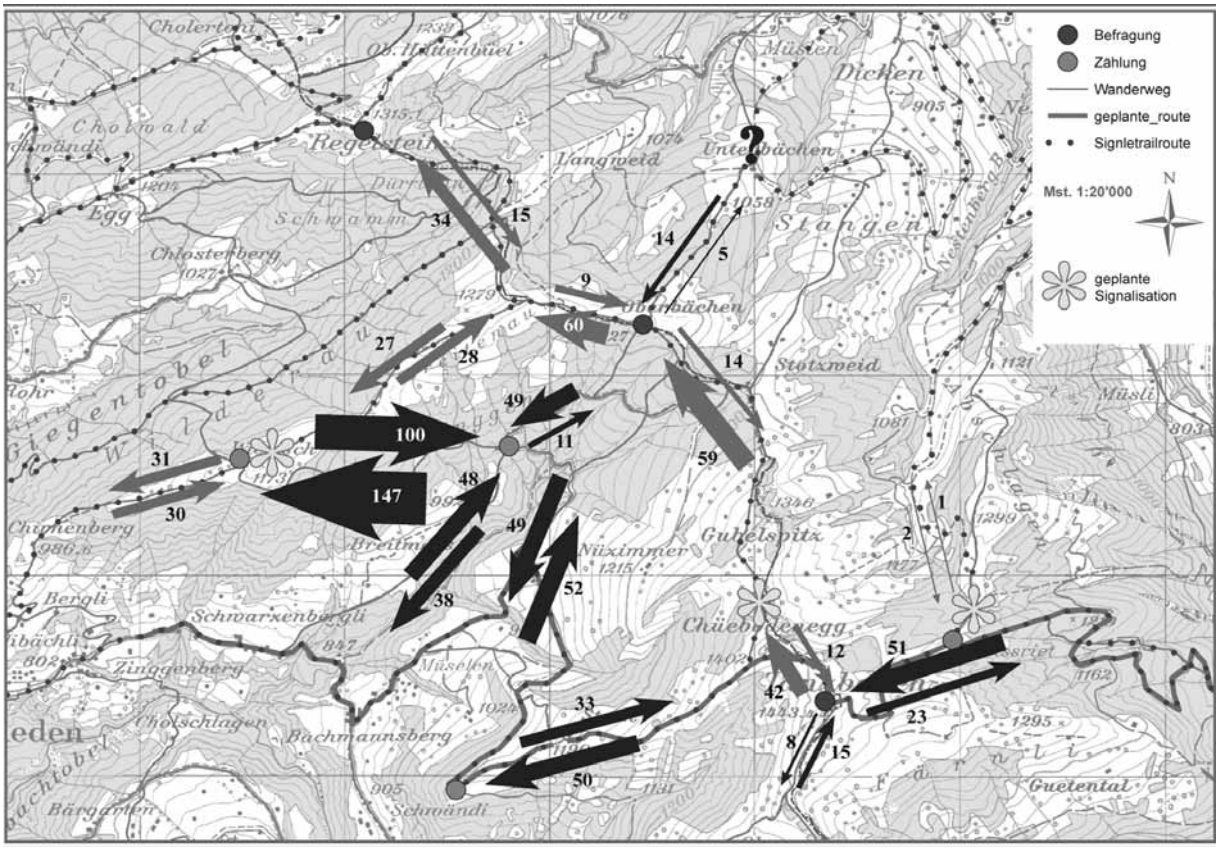

Figure 2: Distribution of the bikers.

Acknowledgments

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