The Swiss defragmentation program – from design to global planning An Overview

Marguerite Trocmé, Environmental standards Manager,
Federal roads office
CH 3003 Bern, Switzerland
41.31.322.94.13
marguerite.trocme@astra.admin.ch

keywords: Fauna, transport infrastructure, fauna passage, mitigation measures, defragmentation

Switzerland has one of the densest infrastructure networks of Europe (3-4 km/km2 on the Central Plateau). Fragmentation of natural habitats has become a major conservation concern. The mortality of animals on roads is high, with more than 8’000 roe deer killed yearly by traffic. Many local amphibian populations have disappeared after road building cut off spawn sites from wintering grounds. Highways have proven to be an impassable barrier for the lynx, impeding colonization of eastern Switzerland.

A census of bottlenecks where infrastructure intercepts important wildlife corridors was carried out in the 1990's. 51 points needing restoration measures were identified. Many of these are along first generation highways built along an east-west axis and cutting off any possible exchange between wildlife populations in the Alps and the Jura.

The Swiss defragmentation program spans transport infrastructure planning and building, improving both existing infrastructure as well as setting new standards to minimize future conflicts. Every aspect of planning and design has been reviewed.

A ministerial guideline sealed a partnership the Swiss Agency for Environment, Forests and Landscape (SAEFL) and the Federal road office. The defragmentation program is now included in the highway maintenance program and is to take place over the next 20 years. 12 conflict points have been recently retrofitted in the context of highway maintenance or widening schemes.

In order to facilitate long term planning different instruments have been developed. Standards have been defined by the Swiss Association of Road and Transportation Experts (VSS, 2004) to guide engineers and biologists in the analysis of existing structures and potential permeability for fauna. These standards develop criteria to facilitate the choice of the optimal type of passage for each given situation. Further elements of roads structures are being examined and their design adapted so as to improve permeability (drainage systems and culverts).

This paper proposes an overview of these achievements.