



## Good practices in planning wildlife crossings

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The biodiversity in the world is under threat from building and unsustainable land use. Biologists, hunters, professional foresters, nature hobbyists such as bird watchers, and local people with knowledge about the area should be involved in planning roads and new human habitats.

Ecological expertise is necessary to identify the animal populations, migration routes, place, construction design etc., depending on the soil, landscape and road plan, and also the question if many species (and which) should use a crossing, or if the crossing is designed for specific species, moving on the earth surface, flying or for instance endangered such as the flying squirrel. For small animals, special tunnels can be constructed. When a crossing possesses large enough dimensions, they can be combined with human use, agriculture, forestry and recreation.

In Finland, the new law in preparation has as one of its goals to pay closer attention to the biodiversity. Bigger projects such as mines or motorways already require an analysis of the consequences of construction, but now also urban planning and other construction work will be included.

Changes in city extension or road building plans must in the future be made when the value of the natural habitat is at stake. Ecological corridors should be built at a much larger scale. When parks and green areas are combined into larger areas, animals and insects can easily move from one natural area to the next. The Siberian flying squirrel, bats and the moor frog (*Rana arvalis*), for instance, are protected by a European Union directive and their habitats must be protected, which means that first the populations must be explored and only then planning can continue.



### *Roe deer at a wildlife crossing in Finland*

*Roe deer (*Capreolus capreolus*) crossing highways and roads are one of the main causes for accidents involving animals in Finland. Here a roe deer is crossing a wildlife bridge with natural landscape over a highway.*

*Source: Väylävirasto 2021*

In Finland there are consulting companies, which employ biologists to map out the animal species, waterways, rare plant species etc., but a much broader cooperation with different kinds of experts is needed. The size of bridges and tunnels and how and where they should be built is a question, which depends very much on how big the animal populations are in a specific area, their routes, feeding grounds and other aspects. The impact of a new road concerns not only animals, but humans as well. Therefore, not only those with knowledge of nature should be involved, but also ethnobiologists, sociologists and others with expertise in human societies and human-nature relationships.

In Finland, the open-source *Zonation* software is widely used for planning, evaluation, decisions for land use etc. This system, developed at the University



of Helsinki, integrates spatial data about diverse features (species, habitats, ecosystem services), threats and costs, uncertainty and other factors, including connectivity.

Municipalities in Finland already use the services of consulting companies, but experts could be engaged on an even larger scale. The Ministry of Environment also encourages municipalities and provinces to bring the nature closer to the inhabitants and to the consciousness of decision-makers on the local level, because the topic of nature is always local and it should be decided on not only nationally, but also locally, involving the inhabitants. The expertise is biggest on the spot, and the participation in decisions and mapping out the environment must be increased locally. A close relationship with nature increases well-being among the humans, but a distance of even 300 metres or five minutes' walk to a green area (park or forest) reduces the motivation for humans to go out into nature.

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