

The rocky path – defining a trail and route network for a new national park: Case study Parc Adula, Switzerland

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Introduction

Switzerland has the oldest national park in Central Europe and in the Alps – the Swiss National Park in the Engadin Valley. Established in 1914 and with an area of 170 km², the park is well known, and has strict but well accepted rules for visitors (Backhaus and Rupf, 2014). The Swiss National Park is not classified as a National Park, but as a Strict Nature Reserve category Ia (IUCN). It only consists of a core area without a buffer zone.

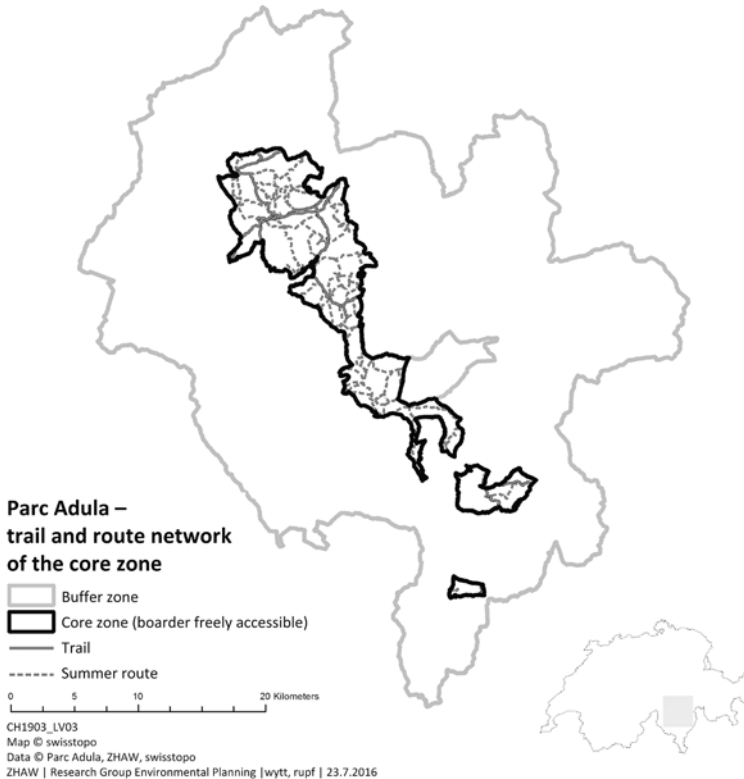


Figure 1. Perimeter of core zone Parc Adula with the trail and route network

In 2007 the legal basis for new protected areas in Switzerland including national parks (IUCN category II) was established. This was the beginning of several initiatives to launch new national park projects. One of them is Parc Adula (see Figure 1), situated in the south eastern part of Switzerland, with a total area of 1,250 km² and a core zone of 145 km² (12 %). Parc Adula is part of the territory of two different cantons and authorities (Grison and Ticino). In addition, Parc Adula is home to three different languages and cultures (Italian, Romansh and German), with about 16,000 residents in 17 communities. The land drops from the highest peak, Piz Adula, from 3,402 m to 349 m, and different biogeographical regions are therefore represented.

Establishing new national parks in Switzerland – legal prerequisites

The introduction of the Federal Act on the Protection of Nature and Cultural Heritage in 2007 and the subsequent new Ordinance on Parks of National Importance (ParkO) were important milestones in nature protection in Switzerland. Supplementing guidelines for initiators and authorities were provided. Some core criteria for national parks are:

- High natural and landscape values (biodiversity, indigenous species and habitats, exceptional beauty and character of the landscape, low level of disturbance, uniqueness)
- Presence of a core zone and surrounding buffer zone (at least 100 km² core zone in the Alps and 10 % of the total park area)
- Bottom-up process with local initiatives
- Participatory process (majority of residents to vote in favor of the park and support it financially)
- Primary goal of the core zone is to enable free natural development: Thus for visitors it's prohibited to leave the trails and routes as well as to use vehicles and to take animals in the core zone, ...
- Rules for visitors in the buffer zone are the same as those in areas outside the park.
- By fulfilling all the criteria, the park can be labeled and financially supported as a national park for ten years. This process then has to be repeated every ten years.

Applied theoretical concepts to define a trail and route network

A trail and route network is a central component of the visitor management system of a national park. A trail is defined as a marked official mountain hiking trail or a fairly difficult marked alpine trail. In contrast, a route is not marked. An alpine mountain or climbing route is only described in climbing guides, e.g. the Swiss Alpine Club SAC.

Several basic concepts and management frameworks have been developed, especially in North America. As guidelines, the approach of 'Recreational Carrying Capacity' RCC (Manning, 2007), the frameworks 'Recreation Opportunities Spectrum' ROS (Clark and Stankey, 1979), and 'Limits of Acceptable Change' LAC (Stankey et al., 1985) have been used. Starting from an inventory of unique landscapes, habitats of vegetation and wildlife species as well as important sites for recreation, a system

of development objectives, principles and measures has been elaborated with the involvement of park management.

Definition process

Procedure

In respect of Parc Adula, it was crucial to select the most beautiful and important routes for the locals, hikers and mountaineers. This infrastructure needed to remain accessible to ensure that the project is accepted by these stakeholders. For this purpose a working group was formed with local mountain guides, SAC representatives, wardens of mountain huts, hiking guides, etc. The group characterized all routes in the park with regard to their importance for mountaineering and estimated frequency of use. Similarly, wildlife specialists evaluated the routes regarding their potential for disturbances to wildlife. These assessments from the perspective of recreational use and conservation were taken as the main bases to develop a balanced proposal for the core zone, implementing the requirements of the Park Ordinance. This proposal was discussed at workshops with all stakeholders. In some cases workshop participants were unable to find agreement and the board of Parc Adula made the final decisions.

Results

As a result of this process, all the official marked trails will remain accessible but the number of routes will be reduced. Nevertheless, SAC estimates that 90-95 % of today's mountain tours in the core zone will remain possible with the new network (Minder, 2015). Mountaineers will still be allowed to climb all major peaks, but not from every exposition. In order to enable free natural development, some valleys and small watersheds without human visitors and disturbance are required.

Due to the measures taken, the route network in the core area has been reduced from 384 km to 214 km, while the existing trail network is unaltered. This results in a trail and route density of 2.2 km/km² in the core area. Compared with other national parks in the Alps, the trail and route network density is still high.

In addition to the trail and route network, several spacious areas were defined where visitors can relax and enjoy nature. These visitor areas are places to observe wildlife or climb rocks, and there are also areas situated around mountain huts. Owners and wardens of the mountain huts were involved in the definition process.

Further steps

Existing data bases, e.g. frequency of use, are not of the quality required. Therefore, in the first phase of operation, visitor and nature monitoring is being carried out.

Regarding LAC, the further development of the trail and route network is a participatory process. For this, a trail and route commission will be established in which mountaineers, tourism experts, wildlife specialist, researchers and residents will be represented. This commission is expected to have a challenging task with the definition of indicators, thresholds and appropriate measures (McCool et al., 2007). Once these figures have been established, and based on other experience gained, the

trail and route network will be optimized, i.e. by addition, substitution or closure of trails or routes.

Lessons learned

Establishing a new national park with a trail and route network is a multi-dimensional, complex task. The case presented, Parc Adula, with its different languages, cultures and cantons is particularly challenging, and even more so as it will be the first national park of a new generation in Switzerland (IUCN cat. II). The park management needs to introduce this 'new national park' to voters who are currently only familiar with the existing Swiss National Park and its restrictions.

Furthermore, we are currently in times of transition, which are difficult times for inhabitants of the Swiss Alps. Voters have to choose between 'freedom in nature' and 'protected areas' with some restrictions, but new opportunities for their sustainable development. The participatory process used is a tightrope walk and it is impossible to fulfill the particular interests of each party involved.

Finally, it was found that the authorities responsible have no experience in this field. They may have a picture of an ideal national park in mind, but creating a national park, including defining a trail and route network, is a lengthy process. We sincerely hope it will be given a chance and not too many rocks will be placed in its path.

Acknowledgements

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