

Orienteering and sustainability in the Czech Republic

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ABSTRACT

Orienteering is a relatively popular sport in the Czech Republic with more than 7,000 registered competitors. Some ecologists have stated that orienteering, thanks to its off-track nature and the large numbers of competitors, has the potential to damage flora and fauna. In practice, many thousands of orienteering events are held worldwide each year and ecological incidents resulting in unacceptable damage are extremely rare - in fact, close to zero. Unlike some other sports pursued in natural surroundings, orienteering does not require any long-term modifications to the natural landscape, no special devices, and no buildings. And on the other hand, this sport has important social dimensions, as all age groups, including families, meet at sports events and from the performance point of view, are catered for with (almost) equal importance.

The author proposes to use methods similar to those used in tourism by some authors in the past for evaluation of the environmental sustainability of orienteering sport, namely Ecological Footprint (EF) and Life Cycle Assessment (LCA).

KEY WORDS

orienteering; nature protection; social factors

INTRODUCTION

Orienteering is a relatively popular sport in the Czech Republic – there are more than 7,500 competitors registered for foot orienteering, 725 for mountain bike orienteering, 400 for ski orienteering and 50 for trail orienteering. Competitors are organized into 212 clubs. The first Czech orienteering event took place in Zlín (the first ever world o-event took place more than 50 years earlier – in Norway in 1897).

Czech athletes are relatively successful in international competitions – they have brought home nine medals from World Orienteering Championships over the last 10 years – the biggest success being the relay gold medal from in 2012. The World Orienteering Championships were organized in the Czech Republic in 1970 (Staré Splavy), 1991 (Mariánské Lázně) and 2008 (Olomouc).

What factors should be evaluated?

The environmental commission of the International Orienteering Federation (IOF) deals with environmental problems at the international level. The IOF General Assembly approved the IOF Environmental Policy in 1998. The commission published several studies and in 2011 it also conducted a survey across the national orienteering federations (Laininen,2012). The results of this survey are not

only very interesting but also rather surprising: the most important environmental problems indicated by the national federations are “disturbance of mammals” and “waste”, while “traffic and its CO2 emissions” is identified as the third least important issue (see Figure 1). The results of the survey led us to conclusion that a more detailed study of different environmental factors involved in orienteering would be very interesting. We would like to discuss some of those factors and propose detailed research methods for some of the factors in the Czech Republic.

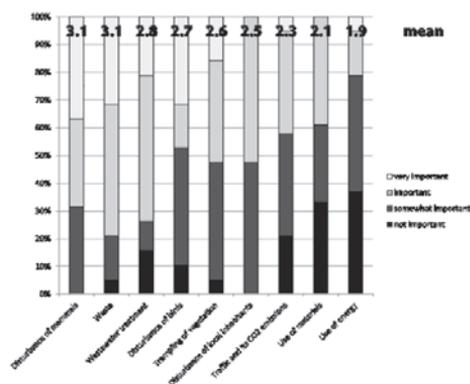


Fig. 1: Results of the IOF Environmental Commission survey (Laininen, 2012)

The research here attempts to assess both environmental and social factors of orienteering sport in our country.

We made some simplifications for the purposes of our research – we consider only o-events and no training activities, as those take place in small groups with almost no equipment, with no need for buildings or other stable constructions. The only exception is winter training in gyms, but in the first stage of research, these rather optional activities are omitted.

We compiled statistics of o-events in the Czech Republic over the last year (ČSOS 2012) and we obtained the results summarized in Table 1.

Table 1: O-event statistics in the Czech Republic in 2012 (Calculated according to <http://www.orientacnisporty.cz>)

| Sport | Events per year | Average no. of athletes per event |
|-------------------|-----------------|-----------------------------------|
| Foot orienteering | 200 | 200-2000 |
| MTB | 20 | 250-350 |
| Ski | 8 | 250 |
| Trail-O | 12 | 30 |

If we consider the nature of different orienteering disciplines and number of athletes, we can focus only on foot orienteering in further discussion.

NATURE PROTECTION

DISTURBANCE OF MAMMALS

In contrast to the results of the IOF survey, mammal disturbance is not a big problem in the Czech Republic; most mammals on the list of endangered animals are small mammals which do not come into contact with orienteers e.g. bats, ground squirrels, garden dormice, wildcat etc. There are only 3 species of big mammal that could theoretically be endangered by orienteering – the Brown Bear (*Ursus arctos*), the Gray Wolf (*Canis lupus*) and the European Elk (*Alces alces*). The occurrence of all 3 species is so rare that there have been no recorded encounters between them and orienteers until now.

Another problem could be disturbance of game animals. As all species of game animals are overrepresented in the Czech Republic (Čermák, Mrkva 2007), there is the potential for some conflicts with hunting associations, especially during spring season.

DISTURBANCE OF BIRDS

Nature protection authorities have identified the disturbance of birds as being a serious problem in the Czech Republic, and it is identified as the most important reason for the closure of some regions for orienteering, especially in the spring months. Very different decisions are taken by different regional nature protection authorities, sometimes based on detailed research and sometimes based only on the personal opinion of officials. Research on the disturbance of birds has been carried out in UK (Brackenridge 1988), (Goodall and Gregory 1991).

TRAMPLING OF VEGETATION AND EROSION

The trampling of vegetation in the Czech Republic can be a problem in some areas – mostly in sandstone regions (Czech Paradise, Kokořín...). No real research has been done on this topic and in some areas the local administration has decided not to allow shoes with spikes, which orienteers oppose for the reason that competitors sliding on terrain can make erosion even worse.

DISTURBANCE OF LOCAL INHABITANTS

Disturbance of local inhabitants has to be taken into account in preparing and organizing an o-event – it is necessary to organize proper car parking, the directing of athletes to the start line, and the broadcasting of results and music can disturb the local population. All those problems, however, can be solved relatively easily by o-event organizers.

TRAFFIC AND CO₂ EMISSIONS

Participants in an o-event travel usually effectively pool their cars mostly for economic reasons, but travelling is nevertheless probably the activity with highest environmental impact in orienteering. We plan detailed research on the CO₂ footprint of one or two big o-event in 2013.

WASTE

There is not much waste produced during an o-event in comparison with the everyday life of participants. Some additional waste is produced because of catering using disposable dishes. In future, this problem can be partly solved by using fully biodegradable dishes. At present, organizers at some o-events try to separate at least the plastic waste.

On the other hand, all the waste from Czech events is properly collected and disposed of in designated areas, which was even garnered a mention by the state authorities (AOPK 2011): after the o-event there is usually less waste in the area than before it.

We plan detailed research on the amount of waste produced during two big o-events in the future.

WASTEWATER

Mobile or fixed toilets are used during all o-events and this means that all wastewater is properly disposed of. There could be some additional environmental burden due to the use of chemicals in mobile toilets.

MATERIAL FLOW AND ENERGY USE

In comparison with almost all other sport disciplines, the usual material flow for orienteering events is very low – there is no need for any permanent construction venues and even the mobile equipment is not extensive. We will calculate the material flow for two big o-events and compare the results with studies that were made in Finland for the World Athletics Championships in 2005 and the Nordic Ski World Championships 2001.

The energy use at o-events is also very low – in many cases o-events are organized at isolated sites in the countryside, and only two or three power generators are used for covering all the electricity demands for the computer center and catering. If technically possible, a more effective connection to the public grid is used, as it is also cheaper. This may, however, cause additional disturbance to the surrounding environment as the generators are rather noisy.

SOCIAL FACTORS

The IOF Environmental Commission proposed the following National environmental performance indicators for orienteering:

- number of occasions on which the land use for orienteering has been prohibited by landowners or authorities
- number of complaints from stakeholders (landowners, hunters, environmentalists, authorities, etc.) related to the organization of events
- opinions and attitudes of stakeholders toward orienteering (e.g. national survey of forest owners, feedback after big orienteering events)
- number of discussions with stakeholders at the national / regional level
- number of articles discussing environmental matters in periodicals

In the Czech Republic, there are only some remarks concerning these issues (AOPK 2011), so further research and evaluation would be useful.

METHODS

We did not find any study in the literature with a comprehensive assessment of the environmental impact of outdoor activities, but rather only partial studies mostly regarding the impact on mammals, birds and vegetation. The closest research on this topic we found were studies on the impact of tourism. Castellani and Salla (2012) compare methods to assess impact on both environmental and socio-economic factors. Amongst the tools and methodologies used to assess sustainability, Ecological Footprint (EF) and Life Cycle Assessment (LCA) are of specific interest as they use a variety of assumptions and evaluate environmental impacts from different perspectives that may be easily integrated. In similarity with other sectors, the evaluation of orienteering activities using both methods could therefore provide more extensive and comprehensive results, and could lead to more reliable evaluation of the system and hence provide better support for decision making (Wiedmann and Barrett, 2010).

It will be also very interesting in future to undertake a sociological survey that would indicate whether participants in orienteering events have a better relationship to the environment than the general population does – we plan to conduct a standard quantitative survey with the participants of one or two big o-events in 2013 using some of the questions applied in the ISSP 2010 – Environment international survey (Soukup, 2001) and compare the results. A further issue of interest in this context is whether athletes come to o-events only for sports reasons or whether they also participate for its social aspects (to meet friends) and environmental factors (to experience nature).

CONCLUSIONS

This article summarizes and categorizes existing information and research about the environmental impact of orienteering sports in the Czech Republic (in the wider context of a European framework and research). It shows that some research on the environmental impact of orienteering has already been undertaken, especially by the IOF Environmental Commission and by Finnish scientists (Laininen 2007). Further comprehensive research at the European level, and comprehensive research within the Czech context is still greatly lacking. It would be very useful to undertake such research using standard methods, i.e. with Life-cycle assessment methods.

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