



THE IMPACT OF ORIENTEERING ON THE ENVIRONMENT

B. Doytchev*

Sports Medicine Department, National Sports Academy „Vassil Levski“, Sofia, Bulgaria

ABSTRACT

The aim of this study is to examine sports orientation and its impact on the environment. In recent decades, orienteering has gained increasing popularity among the population through its fervor, typical landforms, the nature of the area, and the great diversity of mountain ecosystems.

The results obtained show that environmental training is needed to help people raise their awareness of environmental and specific action issues. The appropriate behavior and practical habits of the practitioners of guidance in a natural environment depend on their knowledge of it and how it will react to the sports activity.

Conclusion: It is necessary to increase the popularity and awareness of the commented sport, which should be realized under optimal environmental conditions and not to violate its environmental sustainability. This requires an up-to-date environmental policy and education aimed at the future development of sports orientation.

Key words: orienteering, ecology, conservation, environment.

INTRODUCTION

Already in ancient times, man was looking for ways to identify, remember and depict the location of local objects and religious objects from the environment. Initially, with the help of the sun, the moon, the North Star or distinctive landmarks, as well as according to the seasonality, he determined the direction of travel or location. In this way, people met their needs related to hunting, food, worship and the desire to explore the world.

A characteristic feature of orienteering as a sport is that a minimum theoretical knowledge of topography is required before starting practical activities (1). The main activity carried out by the competitor is navigation. The word orienteering originates from the Latin word „orient“ – east (sunrise). Orienteering competitors must, using a specially crafted topographic map and compass, pass a mandatory sequence of terrain checkpoints (2).

*Correspondence to: *Boyan Doytchev, National Sports Academy „Vassil Levski“, 1700, Sofia, Studentski grad, Sports Medicine Department, E-mail: bullbos@abv.bg, Mobile: 0893 303059*

Orienteering is a sport that covers: summer orienteering, ski orienteering, skiathlon, mountain bike orienteering and orienteering for people with disabilities. In recent decades, this sport has become increasingly popular among the population through its fervor, typical landforms, the nature of the area, and the great diversity of mountain ecosystems.

The term „**orienteering**“ was first used in 1886 at the Swedish Military Academy and means the crossing of military units through an unfamiliar area with a map and compass. After the competition between the military units, the citizens started to show interest in orientation. The first records of an orienteering competition are from 1897, in the Dalsgaard Mountains (Norway). According to the Swedish Federation, the first orienteering relay was held in Sweden in 1900, but the initial documented civic competitions were held on March 17, 1901 (3). Over the next 20 years, competitions began to be held in Finland, Estonia, and Germany.

In the 1920s, the modern rules for competitions with a map and compass were formulated, principles for delineating routes were

developed, age groups were formed and a complete system for organizing the competitions was established. In the 1930s, international contacts between the Scandinavian countries began. The first national championships on the peninsula date back to the same time. In 1938, the first national orienteering federation was established – in Sweden, which played a pioneering role in the development of this sport in Europe and the world (4).

During The Second World War, in the period 1939-1945, orienteering interrupted its development. The exception is the US, which launched completions in 1941, and non-war Sweden (5).

In 1961, in Copenhagen, ten countries - Denmark, Sweden, Norway, Finland, the GDR, the Federal Republic of Germany, Hungary, Switzerland, Czechoslovakia, and **Bulgaria** - established the **International Orienteering Federation (IOF)**, which decided in 1962 to start holding European Championships, Norway serving as hosts. The first IOF members from outside Europe were Japan and Canada, who registered in 1969, and the following year the United States and Australia joined the International Federation. In 1977, the IOC Congress decided that orienteering should have the status of an Olympic sport (5). The beginning of orienteering in Bulgaria dates back to July 1954 (6), when the first competition was organized during a course for tourism instructors at the „Aleko“ hut. The rules for conducting are borrowed from that of Czechoslovakia and are a mixture of orienteering and elements of tourist dexterity. Respectively in this period, the activity is called tourist orienteering. Until the end of the same 1954 competitions were held in Sofia and Shumen, and in 1955 in Koprishitsa began the holding the **national orienteering championships** in Bulgaria. In 1958 **specialized sports schools** were established in the larger cities: Sofia, Plovdiv, Burgas, Gabrovo, and Shumen. In 1972 the **Republican Orienteering Commission** grew into the **Bulgarian Orienteering Federation (BFO)** (5).

The personal-team system was adopted as an organization of competitions until 1989. This period is characterized by intensive development and massification of sports orienteering, centralized training of

representative teams, and one of the biggest sports achievements at the international level. The period after 1990 is characterized by a certain retreat from the positions at all levels but was marked by the first World Title in this sport for Bulgaria in ski orienteering in 1994. During this period the organization of BFO changed, which was structured in the Association of all clubs in the country, which are independent, legal units, independent of the tourist companies (4).

Stanimir Belomazhev, who became a two-time champion for youth (under 20) at the World Championships in 2008, registered great success in domestic orienteering. In 2013 he won gold in the EC sprint in Latvia and two more European titles - in the long-distance of the EC in Russia (2014) and the EC sprint in Switzerland (2015), and 2017, he won the world title in the middle-distance in Russia (5). According to the Statute of the International Orienteering Federation (IOF), this is a sport involving non-motorized map navigation. The rules for orienteering and ski orienteering competitions (since 1995) give the following definition: „Competitive discipline orienteering is a sport in which the participant alone, with the help of a map and compass, must pass in the shortest possible time through terrain with marked control points (CP). The combination of these CPs is a competition route that must test both the participant's ability to navigate and his physical training (4). The advantage of the sport is that it is practiced outdoors in nature, with an element of discovery and individual pace of movement, which makes it equally suitable for high-performance sports, as well as mass sports and active leisure for a wide range of age groups. The requirement for orienteering competitions is that they be held in an **unfamiliar wooded area**, which is a prerequisite for equal competition conditions. Possible variants of passage in a wooded area are of different denivelation, patency of soil-plant cover, and possible obstacles. To ensure individual work on the route, the participants **start the competition by a lot and in intervals of 1, 2, or 3 minutes**. At the start, the competitors receive a **topographic map** with a **competition route** outlined by the judges, with connected sequentially and numbered with Arabic numerals **CP** (control points) and **description** to them - additional information about the exact location of CP and CS (control

signs) on the site, as well as the CS **signature**. Success in orienteering competitions is a result of the level of individual knowledge and abilities in topography, physical training, technical habits, tactical skills, and mental resilience. Competitors are ranked according to the shortest time to cross the route, provided that all CPs are passed in the outlined sequence of the route (5).

The potential environmental conflicts caused by this form of sports activity are relatively small. Possible environmental issues are limited to those few areas in which orienteers disturb the habitats of plants and animals that are subject to protection (7). Other potential conflicts (eg damage to young trees, shrubs in forest plantations, or disturbance of cloven-hoofed ruminants and non-ruminants) are mainly of an economic nature (8). Also included are dumping waste outside designated areas and causing noise, stress, and emissions from road traffic.

The potential for concern for protected species (especially birds) arises from activities that disturb affected animals or drive them away from their habitats. In cases where animals cannot be moved to an appropriate shelter, the existence of entire populations may be endangered (9).

405 species of birds have been identified in Bulgaria. This is more than half of the species in Europe, numbering 760. Of the endangered birds in Europe, 29 species have been identified. The Red Book of Bulgaria's list of endangered birds includes 164 species, after its update in 1988. It is forbidden to chase and disturb them, spoil their nests, collect and destroy their eggs and young.

The diversity of birds is determined by the geographical location of the country and the various habitats in Bulgaria: the open sea, coast, sand dunes, high mountain cliffs above the forest border, combined with mountain lakes, steppes, deciduous, mixed, and coniferous forests, squat formations and high-mountain meadows. In all these places there are peculiar complexes of birds (10).

In areas that provide habitat for birds, orienteering athletes will need to be appropriately guided to a specially prepared racing route that can be modified to protect endangered birds. All disturbances should be away from the habitats of endangered species

(woodcock, stock dove, white-backed woodpecker, black woodpecker, hobby Falcon, Lesser Kestrel, Ruddy Shelduck, Common pheasant, etc.). These areas should be completely limited to visitors. The regional environmental and water inspection should ensure that access bans are respected.

Maps have already been created in Bulgaria for some areas that indicate the ecological routes. Appeals have been made to the issuers of tourist maps to include changes in the routes, according to the specific conditions of the environment.

When designing a site for the construction of a racing route, the following features must be taken into account:

- routes must be designed and built after paying attention to the local environment;
- ecologically valuable animal species and their habitats incl. ecologically valuable plant communities may suffer or be completely destroyed by intensive use of territories;
- orienteering should not be carried out near reserves and other sensitive, ecologically important areas;
- forming paths in ecologically valuable and sensitive areas (wetlands, dry grasslands, coastal dunes, and ecologically sensitive forest resources) should be avoided;
- soil removal or materials used for trails from other areas (e.g. the use of limestone in an area with acidic soils) should be avoided.

In important areas of ecological significance, such as wetlands, swamps, and dunes, paths should not be provided. In exceptional cases, it is possible to build wooden paths permissible from an environmental point of view (they do not divide or tear off areas and cause minimal difficulties) (11).

Adverse effects are due to non-compliance with the following rules:

- where orienteering competitors deliberately or accidentally leave the specially prepared race route and cause landslides and erosion on steep slopes, shores, and gorges;
- when competitors trample on ecologically valuable vegetation. Such direct mechanical impact destroys whole species of plants. It can have a negative impact on the entire habitat in the long run;

- when the tranquility of endangered, rare, and vulnerable animal species and communities is disturbed;
- when routes involve passing through „sensitive“ areas and disturbing animal populations during the breeding period;
- when substances are imported through organic and inorganic waste with which they can cause soil eutrophication. As a result, rare plant species are displaced by more easily adaptable and common plants;
- when orienteering competitors and spectators travel by car to and from the venue, causing noise, stress, and emissions from road traffic.

Environmental problems can also arise when racing routes are away from trails and agricultural fields, pass through areas of ecologically valuable vegetation, or through the few remaining habitats of rare animal species. Such conflicts can be avoided when the organizers of the event consult with officials of the Ministry of Environment and Water (MOEW) and local conservation organizations while planning a route for a competition. The same goes for the ski orienteering discipline, where participants compete on a predetermined route. In winter conditions, these conflicts can be prevented from the very beginning, when the race track is determined after consultation with the responsible persons.

Crowds of spectators at major orienteering competitions can also cause environmental problems. Careful deployment of footpaths is needed to keep people away from sensitive areas. There is a need for proper waste disposal and sufficient parking spaces located on the periphery to ensure that noise and environmental stress are within acceptable limits.

The following measures for the protection of type forms of relief require attention when formulating a usage schedule:

- **Contradiction between the organizers and the environmentalists:** Disagreement over which of the changes in nature should be seen as „significant“. Environmental studies must therefore be carried out with caution and any protection measures or policies resulting therefrom must have a scientific basis (12);
- **Role of the organizers for wildlife conservation:** Their opinion in the

planning process makes it possible to make an objective and fair decision. It is important to adopt provisions to make it easier for them to be implemented (12);

- **Orienteering contestants' management:** Directing the movement of orienteering athletes with the help of „imperceptible“ guidance to paths that can withstand stressful situations. „Psychological barriers“, such as plantations, waterways, or piles of branches that build paths, can also be used to guide traffic [9]. In order to guide sports enthusiasts away from ecologically problematic areas, nearby hiking trails or roads that are marked, designated, and pre-aligned should be closed. If these are not designated, then they may choose such access as not to damage the soil and cause erosion (13);
Invaluable areas of ecological importance, such as wetlands, swamps, and dunes, paths should not be provided. In exceptional cases, it is possible to build environmentally-friendly wooden paths (they do not divide or tear off areas and cause minimal difficulties) (11);
- **Instructions to stay on the trail:** Prohibitions against leaving paths must be generally accepted and applied in reserves, maintained reserves, and other ecologically valuable and sensitive areas. They are justified only from an ecological point of view when valuable plant communities or animal populations would be endangered;
- **Awareness and awareness-raising:** Orienteering competitors need to raise their awareness of environmentally friendly forms of behavior and realize that certain areas are not only places of sport, but also habitats of plants and animals worthy of conservation. If they perceive these areas as a habitat, they would have a more appropriate behavior in nature. Orienteering guides and portals must not undermine the objectives of wildlife conservation and the natural state of landforms (12);
- **Measures to restrict road access:** Transport, if possible, by means of facilities or public transport. When using road transport, a moderate number of outdoor parking spaces should be provided. Allow this to take place on the periphery of the area, where only enthusiasts can enter. These places should be well integrated into the landscape (without asphalt cover) and

be far enough away from the areas where peace and tranquility is requested;

- **Measures against waste pollution:** It is necessary to keep the area clean, avoiding the disposal of waste outside the designated places. They should not be collected in piles or unregulated landfills (contribute to damage and disruption of the visual beauty of the landscape). It is desirable to reduce the use of single-use plastic products. In order to avoid harmful effects on the environment, waste must be collected and returned, as well as those left by other people before.

CONCLUSION

An up-to-date environmental policy and education aimed at the future development of this sport are needed. It must be realized under optimal environmental conditions and not violate its environmental sustainability.

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