



INTERNATIONAL ORIENTEERING FEDERATION

ENVIRONMENTAL SUSTAINABILITY PROJECT
AT THE
WORLD MASTERS
ORIENTEERING CHAMPIONSHIPS,
WMOC 2004,
ASIAGO, ITALY



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INTERNATIONAL ORIENTEERING FEDERATION,,
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Environmental Sustainability Project
at the
World Masters Orienteering Championships, WMOC 2004,
Asiago, Italy

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SUMMARY:

The World Masters Orienteering Championships, for those of age 35 and over, brought more than 3000 competitors to the Altopiano district of Asiago, in northern Italy, in July 2004. The championships comprised three days of competition, plus some preparatory training, in the forests and sub-alpine meadows of the area.

Following the success of environmental protection measures at previous major international orienteering events in northern Europe, the organising committee for WMOC 2004 decided to follow suit and set a number of environmental sustainability objectives against which the championships' performance could be judged. The three prime objectives were:

- Protection of the natural environment by minimising ecological impact within the competition areas and by reducing global environmental impact through efficient use of resources;
- Increasing environmental awareness among competitors to encourage their more efficient use of resources in normal living;
- Demonstrating the good environmental credentials of the sport to environmental and civic authorities in Asiago so that they would welcome the staging of further major orienteering events in their district.

All the major and their secondary objectives were met, mostly to an exemplary standard. In particular, the environmental and general conduct of the championships and the competitors were such that the civic authorities of Asiago sought to obtain a return date for an event of similar international standing and a 5-day event in 2008 has been agreed.

The successful environmental sustainability project at WMOC 2004 acts as a possible model for the organisers of future major orienteering events who wish to demonstrate and reinforce the inherent good environmental credentials of the sport.

The research opportunity was taken at this international event to question participants from many countries about their perceptions of orienteering and the environment. The results of the questionnaire survey are included as an appendix to this report.

1. INTRODUCTION

The World Masters Orienteering Championships (WMOC) provide international top level competition for older participants, variously known as seniors, veterans, etc. In orienteering this means 35 years of age or older.

The WMOC take place annually in different countries, mostly in Europe. Although an international championships, there is no national selection and representation. The only entry requirement is payment of the appropriate entry fee, but the knowledge that the competition courses are of world standard ensures that the physical and technical competence levels of the competitors are high. Nevertheless, the total entry for WMOC is typically in the range 2000 – 4000 and the winners in the different age classes are *de facto* world champions.

The age classes are 5 years in width, with the present oldest competitors, both men and women, being over 90 years of age. Different courses are planned for the different age groups. The average time taken on a course is approximately one hour and most competitors, when navigating fluently and not having to stop to re-locate, will run for the whole the time they are in the competition terrain, the winners being those who take the shortest time.

The competition terrain at this international level is usually mature forest with complex contour and ground detail, although open land with similar detail can be incorporated. To set the required challenges of map reading, route selection and navigation, the courses avoid the use of roads and tracks, wherever possible. International orienteering is thus a cross-country running sport.

With large numbers of competitors running in the terrain off the paths and tracks it is understandable that there can be concerns about ecological impact: the disturbance of fauna and damage to flora. There are standard procedures for conducting orienteering which reduce such impact to normally well within acceptable limits. These procedures include the dispersal of the competitors in space and time, together with the avoidance or reduced use of sensitive areas.

The organisers of WMOC 2004 decided not only to follow the well-known and proper procedures for minimising ecological impact in the competition terrain but also to widen their horizons to include the environmental impact of the event as a whole, outside the competition areas. This meant dealing with issues of transportation, efficient use of resources, waste reduction, and so on.

To achieve these broad aims of safeguarding the environment the organisers assigned to an environmental organisation the planning and implementation of a project to protect the ecology of the competition terrain and minimise the overall environmental impact of the event which brought 3300 orienteers from all over the world to seven days in the forests and meadows of the Asiago Altopiano.

The environmental organisation commissioned was the *ACHAB Group* and the project they prepared, following the guidelines of the International Orienteering Federation (IOF) Environment Commission and with the cooperation of the Italian Orienteering Federation (FISO) Environment Commission, was the *Progetto di Sostenibilità (Environmental Sustainability Project)*.

2. LOCATION AND FORMAT OF WMOC 2004

The event was held in sub-Alpine terrain in northern Italy in the vicinity of the skiing resort town of Asiago. The area is known as the Asiago Altopiano and referred to as a plateau. This is a partly misleading description because, although an elevated area at around

1000m elevation between the plains to the south and the mountains to the north, the landscape is strongly undulating. Indeed, the terrain, which was fought over between the Italians and the Austro-Hungarians in the Battle of Asiago in the First World War, proved too rugged for sustained military advance. This can also be seen in the winding nature of the roads in the map in Figure 1.

Following the ravages of trench warfare, which had removed the trees from the landscape, the area was extensively replanted with conifers and beech. These have now reached maturity to form magnificent forests which have state conservation protection.

Two areas were used for the competitions. The western area, Campolongo, was on forested alpine terrain, with steep slopes and plentiful rock features. The eastern area, Marcesina, consisted of flatter terrain, mostly forested but with areas of alpine meadow, cow pasture and much contour detail.

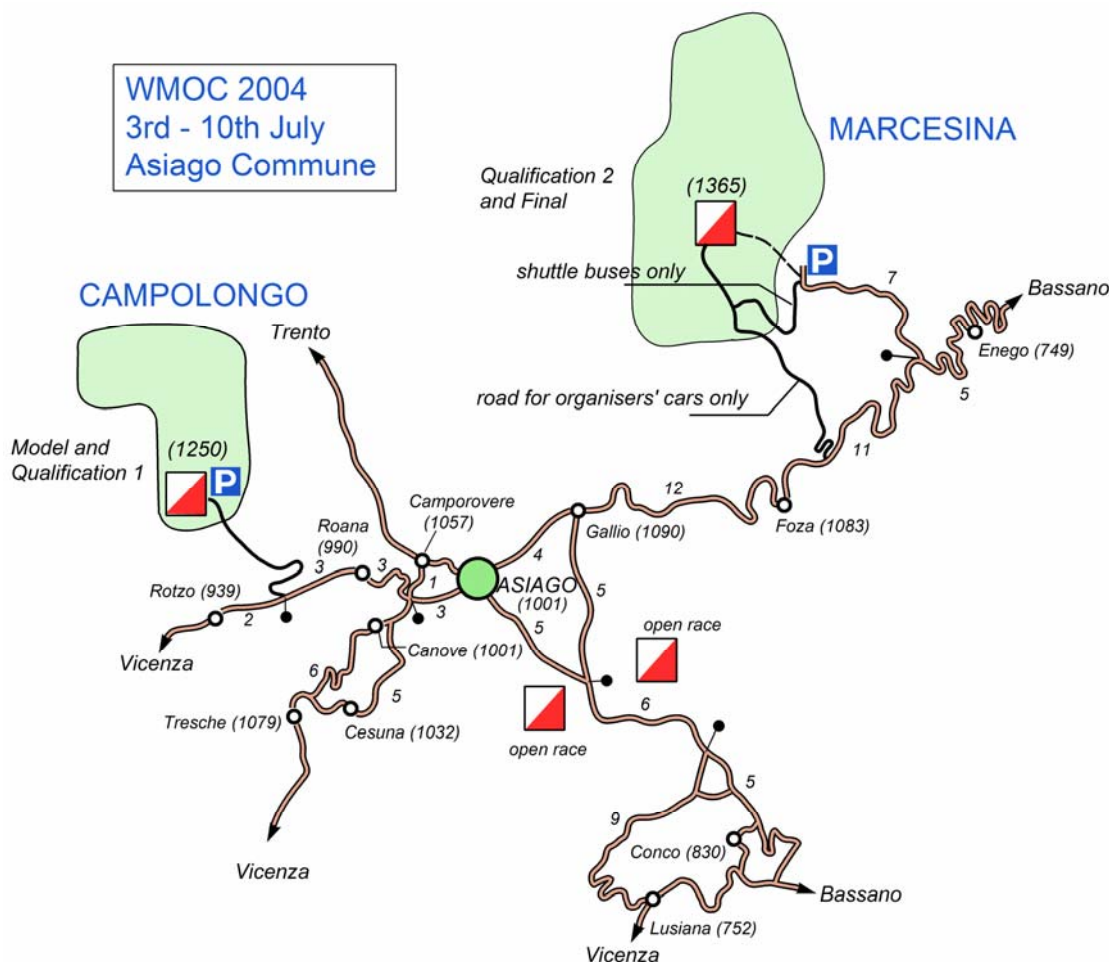


Figure 1. A sketch map of the WMOc 2004 competition areas. The road distances are in km and the elevations in (metres).

3. ENVIRONMENTAL SUSTAINABILITY PROJECT

The project was planned and implemented by the ACHAB Group under the direction of a member of the WMOc Organising Committee (*Giulia Barina*). This management involvement by the WMOc organisation was necessary in order to be able to assess any unforeseen problems that might arise on the competition days and to make any necessary changes with minimum delay and effort.

The management structure of the project was based on the:

- Establishment of a scientific committee to oversee and assess the project.

The project had the following main objectives:

1. Protection of the natural environment;
2. Reduction of material consumption and waste;
3. Separation and recycling of waste;
4. Minimisation of energy consumption;
5. Increasing environmental education and awareness.

4. ESTABLISHMENT OF SCIENTIFIC COMMITTEE

This initial action taken by the project was of critical importance.

An orienteering event the size of WMOC raises legitimate concerns about possible ecological and environmental impact. Such concerns on the part of environmental organisations, both governmental and amateur, may be over stated. In the absence of extensive knowledge about the ecological impact of orienteering activity the possibility of any undesirable impact is a matter of subjective judgement. There is a tendency (in some countries an obligation) to err on the side of caution when applying measures to ensure environmental protection. This can produce disagreements between orienteers and environmentalists, the former believing, with good reason, that their activities have light impact and they are being over-restricted, and the latter, with equally good reason, that a restrictive precautionary approach is their duty.

If at all possible, any potential confrontation between those requesting access for orienteering and those proposing to restrict access for reasons of environmental protection should be defused by the establishment of a working group representing all those with legitimate interests in the event. It is well known that such multiple representation working groups are able to arrive at agreed compromise decisions of benefit to all concerned more readily than meetings between the two main bodies with opposed interests.

This was achieved at WMOC 2004 with the establishment of a scientific committee representing a wide range of legitimate interests in the event. The committee structure was established at the first project meeting of senior representatives of all interested parties held early in the competition week before the main WMOC races took place.

First Project Meeting

The representatives present were as follows:

Representing the International Orienteering Federation (IOF):

- Chairman of the IOF Environment Commission (*Brian Parker GBR*) whose role was to chair the meetings of the Committee and to give its deliberations international authority.

Representing the Italian Orienteering Federation (FISO):

- President of FISO (*Gianpietro Mazzini*).
- President of the FISO Environment Commission (*Maria Silvia Viti*) who had advised the WMOC Committee from the inception of the environmental sustainability project to its implementation.

Representing the WMOC 2004 Organising Committee:

- President of WMOC 2004 (*Stefano Cordella*).

- Delegate of the WMOC Organising Committee (*Giulia Barina*) responsible for the management of the project.

Representing state and environmental organisations:

- Delegate for the State Forest Guard (*Corpo Forestale dello Stato*) for the Asiago Commune (*Giovanna Giancesini*).
- Environment Association (*Legambiente*) for Veneto Region (*Gustavo de Filippo*).
- Italian Alpine Club (CAI) for the Asiago Commune (*Rinaldo Rigoni*).

Representing the project designers:

- Project manager ACHAB Group (*Michele Mogno*)
- Project implementer ACHAB Group (*Lorenzo Fortibuoni*).

The proceedings were conducted in English with interpretation to and from Italian by an IOF Mapping Commission representative (*Sergio Grifoni*).

The representation from state and environmental organisations requires explanation.

The **State Forest Guard** (*Corpo Forestale dello Stato*) is a national government organisation whose duty is to maintain physical guard over the state forests and to control access to prevent damage (particularly fire) and illegal activities. For this purpose the CFS officers are armed. Those seeking permission for organised events, such as WMOC, must have written permission from the Forest Guard.

The **Environment Association** (*Legambiente*) is a national non-government organisation staffed by volunteers. The Association has considerable environmental expertise. There are similarities between Legambiente and the international organisation Greenpeace.

The **Italian Alpine Club** (CAI) is also a national non-government organisation staffed by volunteers but supported by government grants. The Club provides guides, information and educational courses for hiking and mountain climbing. Also within the Club's sphere of interest is ecological impact by recreation. Some national areas considered ecologically sensitive can only be accessed in the company of a CAI guide.

The meeting:

- formally approved the project documentation describing the detailed objectives;
- established the membership of the scientific committee;
- agreed the methods by which the success of the project would be assessed;
- agreed the timing and format of two further meetings.

The Scientific Committee membership was agreed as follows:

Brian Parker (Chairman)	Chairman of IOF Environment Commission
Maria Silvia Viti	President of FISO Environment Commission
Giulia Barina	Delegate WMOC 2004 Organising Committee
Pier Luigi Fedele	Commandant of Forest Guard for Asiago Commune
Rinaldo Rigoni	Delegate Italian Alpine Club
Gustavo de Filippo	Delegate Legambiente, Veneto
Lorenzo Fortibuoni	Delegate ACHAB Group

Second Project Meeting

The Scientific Committee met following the three days of the Model Event, Qualification 1 and Qualification 2 races. The Committee received reports on progress of the different elements of the project and concluded that no significant changes needed to be implemented to the environmental programme for the Final Championship races.

Third Project Meeting

This was held in the competition terrain during the later stages of the Final Championship races. The representation was as follows:

Brian Parker (Chairman)	Chairman of IOF Environment Commission
Maria Silvia Viti	President of FISO Environment Commission
Pier Luigi Fedele	Commandant of Forest Guard for Asiago Commune
Gustavo de Filippo	Delegate Legambiente
Giovanna Giancesini	Delegate State Forest Guard
Sergio Grifoni	FISO Interpreter

The representatives from the Forest Guard and Legambiente had no first hand knowledge of orienteering and its ecological impact in the terrain. To experience these factors they were taken to observe a typical control site used by several of the courses (Figure 2). The group was discreet in its observation of the site, so as not to affect competitors passing through.

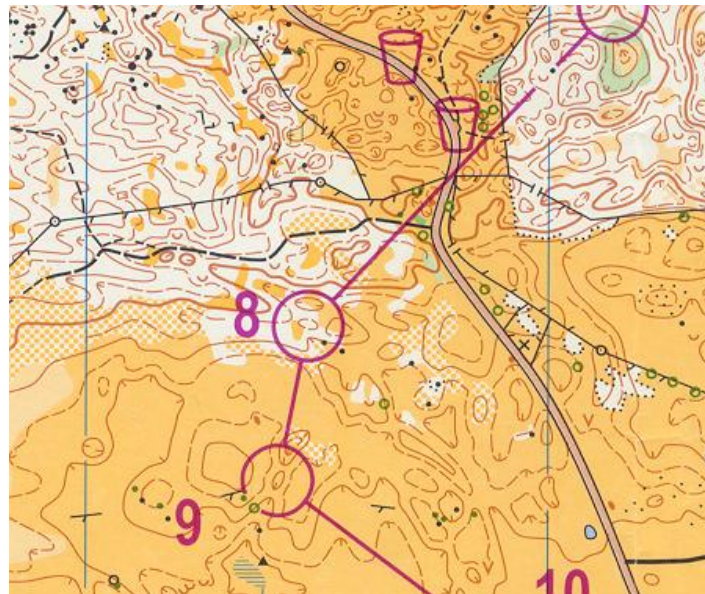


Figure 2. The site observed was control 8 (193, Small hill) on the M65B course. The white areas on the map represent runnable woodland, the yellow open land.

The group was made aware that there were other control sites in the general vicinity being used by other courses. Since these were near the end of the courses which were beginning to converge towards the finish, most of the competitors passing through the area during the period of observation should have passed relatively close to the group.

The members of the state and environmental organisations within the group commented strongly that the number of competitors they observed was very substantially fewer than they had expected to see. It was explained to them that this was a natural consequence of dispersal in time due to the competitors starting over a four hour period. The members of the group also noted that competitors passed through their range of vision quickly and silently. As a result of these observations it was appreciated why disturbance of fauna by orienteering is very much less than might be expected by those unfamiliar with the characteristics of the sport.

The group was also asked to search for ground and vegetation damage around the control site and elsewhere in the vicinity. Minor surface disturbance was noted at the

control site but, even a short distance away, the marks of passage were faint or absent. It was explained that the multiplicity of courses resulted in dispersal in space and it was this further characteristic of orienteering that resulted in low ecological impact on vegetation and ground. This holds even for events such as WMOC 2004, with large numbers of competitors, because more courses are planned to accommodate the larger entry numbers (with up to three courses per age class).

The orienteering environmentalist members of the group fully anticipated this favourable result of visiting one or more control sites during a competition, having carried out such demonstrations at other orienteering events. This procedure for practical demonstration of the good ecological credentials of orienteering is highly recommended, provided care is taken not to disturb competitors.

After the last competitors had passed through, the non-orienteers in the group were given instruction in map reading and terrain interpretation, with the opportunity to put such skills into practice. The purpose of this exercise was not primarily to attract them into the sport, but to ensure that any future decisions they might have to make with respect to orienteering events will be based on knowledge rather than speculation.

5. PROJECT OBJECTIVES

These are reported in turn, together with the conclusions of the Scientific Committee.

Objective 1 - Protection of the natural environment

This element of the project relates to the ecological impact of the runners in the competition terrain. Once the competition areas had been identified, contacts were made with environmental authorities to identify zones within the competition areas which were to be avoided by the courses. For WMOC 2004 there were no ecological out-of-bounds areas for fauna because the event was held in July when new-born fauna were considered to be no longer at risk. With respect to flora, the mature coniferous forest contained no special vegetation areas. However, a small low-lying alpine meadow area near the finish at Marcesina contained a peat community considered sensitive to trampling and placed out of bounds. This was successfully achieved by course planning and marker tapes in the terrain were not necessary.



Figure 3. A view across the assembly field at the final day of the Championships at Marcesina. The finish line is out of view to the right

In addition to this one specific exclusion being required for the competitions, standard good ecological practice was followed in the design of the courses, such as not routing the competitors through marshes. Also, normal practice was followed with the siting of the assembly and finish areas in open land of no particular ecological sensitivity, such as the meadow cow pasture shown in Figure 3.



Figure 4, The finish lane at Marcesina, late in the second day of use, after some 6000 competitors had passed through.

Particular attention was given to the finish areas, where the event facilities had been located and the 3300 competitors congregated before and after their runs for two complete days. The committee members were surprised by the excellent condition of these venues and were of the opinion that, after a short recovery, it would be difficult to determine, without prior knowledge, that a major sporting event had taken place. The most severe trampling impact was to be expected in the finish lane. Figure 4 shows the finish lane towards the end of two days use, over which some 6000 competitors had passed. The trampling of the grass in the finish lane is evident, but less than might have been predicted.

Observations made during the competition have been described above. In addition, inspection of the areas used for the event was carried out by members of the Scientific Committee after several months and the following spring. It was reported that no significant evidence was found which indicated a major sporting event had taken place.

Verdict: On behalf of the Scientific Committee the delegates from the Forest Guard, the Italian Alpine Club and Legambiente reported that they were extremely satisfied with the exemplary attention given to care of the environment.

Objective 2 - Reduction of material consumption and waste;

In accord with general practice at large international orienteering events no permanent structures were erected for the event. Most structures required were standard items supplied by sporting event hire companies. Where specialist facilities were required, such as start lists and results displays, these were constructed from standard timber which was disassembled after the competition for recycling (Figure 5).



Figure 5. One of many simple display facilities using timber, later recycled.

It was decided, for the provision of the drinking water bottles to be handed to each finisher on each of the days of the model events and the competitions, there would be environmental benefit from re-usable glass bottles rather than disposable plastic bottles (Figure 6). The glass bottles were returned to the mineral water company at the end of each day for re-filling.

There was a considerable saving of plastic bottle wastage by this procedure. However, there was an unexpected problem. On one of the days at Marcesina, whilst the crates of water bottles were being transported by tractor across the bumpy terrain of the finish field, several crates fell and their bottles were broken. The area was quickly taped off and all the broken glass fragments were carefully recovered and disposed of in glass recycling containers (see Objective 3).



Figure 6. Green glass returnable bottles used for drinking water

This incident had an adverse effect on the competitors, who were not aware of the environmental benefit intentions of the organisation and who saw, instead, the environmental disadvantage of broken glass in pasture land. Those familiar with English nursery rhymes were quick to quote, “Ten green bottles hanging on the wall. If one green bottle should accidentally fall . . .”

Verdict: The targets for reduction of material consumption and amount of waste were achieved. The incident with the broken glass bottles reduced, but did not cancel, the material benefit of using them. However, the adverse effect of this incident on competitors’ perceptions of good environmental practice was significant and needs to be taken into account by future organisers proposing using refillable glass containers.

Objective 3 - Separation and recycling of waste;

Waste was separated at source into biodegradable and other categories by the use of prominently coloured and labelled waste containers (Figure 7).



Figure 7. Waste containers for sorting of waste at point of disposal.

Special containers were provided in a central area for non-recyclable and non-standard waste. This was a small amount.

The food outlets all used attractively designed, disposable but biodegradable dishes, cutlery and cups (Figure 8).



Figure 8. Biodegradable materials for food and drink outlets.

Verdict: The targets for separation and recycling of waste, including the treatment of toilet waste by the company providing the hired toilet cubicles, were met.

Objective 4 - Minimisation of energy consumption;

Electrical and portable gas supplies required for WMOC facilities were low.

The most significant savings on energy use were made by transporting the majority of the competitors from Asiago to the competition areas by buses (Figure 9).



Figure 9. Buses (n>30) awaiting the return of competitors at the Marcesina drop-off point.

At the Campolongo venue the buses were able to deliver the competitors directly to the assembly area. At the Marcesina venue the road access did not permit this and there was a drop-off point some 5km short of the assembly area. From that point there were

shuttle buses to the assembly and back, travelling in convoy to avoid passing problems on the narrow access roads. The drop-off point also provided the parking for private vehicles, there being no space for parking at the assembly area. The shuttle service was less effective than planned, because the presence of unplanned vehicles on the access road extended the circuit time. A good proportion of the competitors elected to walk across country, a 3km scenic route on paths, to the assembly, instead of waiting in queues for the shuttles. These on-the-day modifications to the transport arrangements had no detrimental environmental consequences. Indeed, less bus fuel was used overall because fewer people were transported by the shuttles.

Verdict: A major difficulty of bussing at orienteering events is that, if private vehicles are able to park in reasonable proximity to the competition, they will be used in preference to buses. The organisers of WMOC 2004 are to be commended for achieving a high utilisation of bus transfer to the competitions, not only for providing the necessary number of buses but getting the competitors to use them.

Objective 5 - Increasing environmental education and awareness.

Four target groups for increasing environmental awareness were identified: the environmental and civic authorities, the goods suppliers, the competitors and the pre-school children in the families of the competitors.

Of critical importance is the education of those non-orienteering authorities who give permission for an event to take place and have a measure of control over how it is conducted. It is important that these authorities have a proper and adequate knowledge of the sport and its actual low ecological impact on flora and fauna so that any restrictions they place on an event are realistically based. The relevant interests at WMOC 2004 were the Forest Guard, the Alpine Club and the Legambiente. These bodies have the authority to control access and dictate restrictions. It has already been detailed above how they were satisfied with the low ecological impact of the event.

Also of much importance is the environmental impact the event has on the people of the district and the civic authorities. This depends not only on the organisation of the event with its traffic and other arrangements affecting the local populace but also the conduct of the orienteers themselves when not at the competitions. Reports to the WMOC organisers and the FISO Italian Orienteering Federation from the Asiago Commune authorities were that the orienteers conducted themselves to an exemplary standard and the WMOC 2004 event resulted in substantial financial and social benefit to the Commune. As a result the civic authorities extended to FISO an invitation to return to the district with a large participation orienteering event.

For the suppliers of goods and services, environmental commitment was sought and achieved within commercial limits. To assist with this a *vade mecum* (explanatory booklet) detailing the environmental objectives and procedures for WMOC 2004 was produced and disseminated throughout the organisation.

For educating and informing the competitors an attractive detailed leaflet in both English and Italian was prepared. This leaflet, *Orientated towards a sustainable future (Orientati verso un futuro sostenibile)*, stressed the basic eco-friendly nature of orienteering and urged competitors to make the difference through:

- carrying out differentiated disposal of waste;
- using transport in an intelligent way through bus use and car sharing;
- economising on materials use; and
- respecting the environment by avoiding damage to flora and fauna, not making loud noise, parking in designated areas, not creating litter, and avoiding fire risk.

Also produced was a poster relating to recycling via the specific containers (Figure 10).



Figure 10. Bi-lingual poster detailing recycling of waste materials

For environmental education of the children of pre-school age who were present at the Championships, the Kindergarten (Figure 10) provided by the organisers had a number of rubbish bags labelled with drawings of the materials that should be disposed of within them. Following their meal the children were encouraged to use these rubbish bags correctly for unwanted food and other materials.



Figure 10. The Kindergarten with specifically-labelled rubbish bags.

Verdict: The educational material was well prepared and should have had, and continue to have, a beneficial effect on the attitudes of the international orienteers who were at WMOC 2004 and the Italian organisations who supplied goods and services. This benefit cannot be quantified but is thought to be real and useful. Of particular merit is the *Orientated towards a sustainable future* leaflet. This was colourful, informative and well produced. It is detailed in content and likely to have been appreciated in full when read at leisure after the WMOC 2004 competition week.

6. OVERALL VERDICT OF THE SCIENTIFIC COMMITTEE:

All the environmental objectives set by the *Progetto di Sostenibilità Ambientale (Environmental Sustainability Project)* were met, some more substantially than others. Of merit and importance was the demonstrated very low ecological impact of the Championships in the competition terrains and the high and commendable use of bus transport in place of private vehicles.

In particular, a report (*Relazione di Sostenibilità Ambientale*) by Gustavo de Filippo, Legambiente Veneto, contained the following conclusion:

“Questa occasione è stata utile per conoscere uno sport che, come altri, si svolge a contatto diretto con l’ambiente ma, a differenza di molti, si preoccupa di generare il minor impatto possibile.”

(This occasion has been very useful to learn about a sport which, like others, comes into direct contact with the environment but, as opposed to many, it takes care to generate as little impact as possible).

The Committee also noted the excellent opinion of the WMOC 2004 event and its participants by the Asiago Commune authorities. It was reported to the Committee at the conclusion of the event that the Commune wished to invite a similar large orienteering event to take place in the district in the near future. In the period during which this report has been prepared it has been announced that a 5-day international orienteering event is scheduled for Asiago in 2008.

The Committee expressed the view that the local authorities could use this project as an example for other different recreational events that are held in the Asiago Altopiano each year and which often result in significant ecological damage.

It is also recognised that this project as reported here could act as a useful guide for similar high status orienteering events for clubs, organising committees and environment commissions of different federations.

7. ACKNOWLEDGEMENTS

The authors wish to commend the enthusiasm of the WMOC 2004 organising team and the open-mindedness of the state and environmental authorities in their approach to the project.

APPENDIX

INTERNATIONAL ENVIRONMENTAL QUESTIONNAIRE

A rare opportunity to sample international orienteers' opinions on ecological matters presented itself at WMOC 2004. In connection with its environmental sustainability project for the event the Italian Orienteering Federation (FISO) agreed to a request to distribute an environmental questionnaire and collect any returns.

Some difficulty was experienced in the vocabulary used for the propositions. This had to be as simple as possible to assist those with poor command of English yet sophisticated enough to describe the propositions adequately. Consultation with the FISO Environmental Commission produced the final form. The questionnaire also invited additional comments and these were to prove invaluable.

The attached table (without the numbers) shows the form of the questionnaire. Respondents were asked to tick the most appropriate box for each of the statements.

Approximately 3000 forms were issued. However, this figure needs substantial downward revision for assessment purposes. Although English is the lingua franca of orienteering, it is known from practical experience of transmitting essential technical information at international events that over half the participants have difficulty in understanding documentation containing other than straightforward instructions. At events for older competitors, such as these Masters Championships, with a starting age of 35, the level of fluency in English is markedly less. The expectation was that, although the questionnaire is complex, it was hoped that up to a quarter of the forms would be sufficiently well understood, directly or via an interpreter, for the recipients to be regarded as potential respondents. In the event 117 responses were returned, a notional 15% return rate. However, sufficient returns were made to allow some overarching conclusions to be drawn.

There were responses from 19 national federations.



International Environmental Questionnaire



Dear Orienteering Friend,

We are researching the views of orienteers and others on the environmental impact of orienteering and would be grateful if you could answer this questionnaire. Thank you.

Your Age Class Your Country % figures

Please tick your answer. If you cannot answer, leave blank.

	Yes! Yes!	Yes	Yes/No	No	No! No!
I think that orienteering causes significant environmental damage to the competition areas*	0	1	7	51	41
Non-orienteers think that orienteering causes significant environmental damage to the competition areas	4	29	43	23	2
My orienteering federation has a good environmental policy for protecting plants and animals during competitions	26	43	19	9	3
In my country orienteering is significantly restricted by problems with environmental organisations	9	18	22	42	9
For environmental reasons many of our good orienteering areas cannot be used for more than three months each year	9	31	18	30	13
Restrictions on our orienteering for environmental reasons are now fewer or less severe compared with earlier years	1	14	33	37	15
In our important areas in which orienteering is not permitted there is free access by large numbers of the general public	10	53	17	14	6
Despite any problems the general relations in my country between orienteering and environmental organisations are good	10	69	17	4	0
Access for orienteering is less restricted by environmental difficulties in my country than many other countries	18	38	30	13	1
If there was more research data on the impact of orienteering, this would help us negotiate with environmental organisations	19	63	8	9	1

*Please only consider the competition areas. The broader issues of transport and energy use are important but not part of this particular research.

If there is anything else you would like to say to us, please use the other side of this paper.

THANK YOU FOR ANSWERING THIS QUESTIONNAIRE. PLEASE RETURN IT TO THE EVENT CENTRE OR THE INFORMATION POINT AT THE EVENTS

The countries represented with the numbers of their returns were as follows:

Estonia (22); Great Britain (14); *England* (12); Finland (11); Norway (10); Switzerland (9); Sweden (7); Belgium (5); Czech Republic (5); Russia (5); Australia (4); Austria (3); Italy (2); New Zealand (2); *Scotland* (2); Denmark (1); Germany (1); Hungary (1); Ireland (1); Israel (1); Portugal (1).

The responses are given in the table as percentages.

An analysis of the returns takes note of the overall responses given in the table, the underlying responses by country and written comments. For analysis of the responses from individual countries only those with five or more have been considered. From these data the following conclusions are drawn for each of the ten propositions:

1. The overwhelming majority of orienteers (92%) consider their sport does not cause significant environmental damage.
2. The proposition that non-orienteers believe orienteering is environmentally damaging is agreed by a third of the respondents, rejected by a quarter and with most undecided. The only country to show a clear opinion is Great Britain, agreeing with the proposition.
3. Most orienteers consider their national federations have good environmental policies, except Estonians, who are unsure.
4. Most international orienteers think their sport is not significantly restricted by problems with environmental organisations. The British largely think otherwise.
5. The proposition that good orienteering terrain is off-limits for more than three months each year for environmental reasons shows a wide response. Analysis by country shows Britain, Estonia, Switzerland, Belgium, Russia and the Czech Republic agreeing with the proposition and the Scandinavian countries rejecting it.
6. Most agree that environmental pressures on the sport have not diminished in recent years.
7. Two thirds agree that areas debarred to orienteers have free access by large numbers of the general public, Finland and Sweden being less certain about this.
8. Over three quarters consider that relations between orienteering and environmental organisations in their countries are good.
9. The Scandinavian countries and Estonia consider the sport is less restricted in their countries than elsewhere. The British and Swiss tended to the contrary view. Additional responses from the Scandinavians pointed out the advantages they had with *Allemansrett* (Everyman's Right) conferring right of access.
10. Over three quarters consider that more research findings would assist with negotiations with environmental organisations. The Estonians tended to disagree.

Whilst the survey provides useful general conclusions over the international spectrum, detailed conclusions about the environmental status of orienteering in individual countries, apart from Great Britain and Scandinavia, are confounded by too few returns.

To rectify the problem of too few returns and possible language misunderstandings, it is recommended that any further surveys be carried out by interview.