



# **Holiday Footprinting**

**A Practical Tool for Responsible Tourism**

**Summary Report**

**WWF-UK  
March 2002**

## PROJECT COLLABORATORS



### **WWF-UK Business and Consumption Unit**

The mission of WWF is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity;
- ensuring that the use of renewable resources is sustainable; and
- promoting the reduction of pollution and wasteful consumption.

WWF-UK's Business and Consumption Unit works with industry to create practical tools and solutions that promote both business success and sustainable lifestyles. For further information, contact [business@wwf.org.uk](mailto:business@wwf.org.uk)

## START

### **START**

Steps Towards Responsible Tourism (START) is a joint project by IIED, Tearfund and WWF-UK. It comprises a suite of linked activities addressing corporate social responsibility in tourism including this footprinting tool. For further information, contact [tourism@wwf.org.uk](mailto:tourism@wwf.org.uk)



### **Thomson Holidays**

Thomson Holidays is the leading tour operator for UK inclusive holidays. In 2001, it took approximately four million people on holiday. Provision of data for this analysis is gratefully acknowledged.



### **Best Foot Forward**

The footprint analysis and tool were prepared for WWF-UK by Best Foot Forward – an independent consultancy specialising in natural resource accounting techniques such as ecological footprinting. The executive summary, conclusions and recommendations were prepared by WWF-UK and START. For further information, contact Craig Simmons at [holidays@bestfootforward.com](mailto:holidays@bestfootforward.com)

## HOLIDAY FOOTPRINTING

Holiday Footprinting is a practical tool that enables tour operators to calculate the environmental impact, or ecological “footprint”, that a holiday product has on the environment in terms of resources used. It also gives an estimate of the relative environmental sustainability of a product, and helps to identify opportunities for footprint reduction and cost savings.

Holiday Footprinting is also a useful communication tool with which to convey information about a range of environmental issues associated with tourism. If the Earth is regarded as a reserve of natural capital, each year producing interest in the form of renewable natural resources, then environmental sustainability requires that humanity lives off the interest rather than eat into the underlying capital. Footprinting assesses the Earth’s available resource, or annual interest, made up of productive land and sea, and quantifies it as a single measurable unit, or currency, known as the “area unit”. An area unit corresponds to one hectare of world average bioproductive space. At present there are around two area units available per person on the planet. This is an individual’s “earthshare”. Holiday Footprinting quantifies the area units required for a particular holiday, and measures multiple environmental impacts through this single aggregated indicator. It then calculates the percentage of an individual’s earthshare accounted for by that holiday, allowing an estimate of environmental sustainability to be made.

## REPORT

This booklet summarises the results from an in-depth ecological footprint analysis of two typical summer package holidays, each of two weeks duration, to two Mediterranean destinations, Majorca and Cyprus. It is based on data provided by Thomson Holidays. An estimate of the environmental sustainability of the two holidays is made in the context of available per capita earthshare. Scenarios for footprint reduction are outlined, and recommendations for more responsible tourism are made. The full report is available in electronic format at [www.wwf.org/researcher](http://www.wwf.org/researcher).

## ‘LIVE’ HOLIDAY FOOTPRINTING TOOL

A “live” footprint tool is available on the *Holiday Footprinting* disk enclosed with this booklet, together with other information on responsible tourism. Based on Excel, this software is a simple practical tool that allows tour operators to input their own data, estimate the footprint of their particular products, and make an assessment of their relative environmental sustainability. It also contains the Majorca and Cyprus holiday analyses and scenarios as examples.

It is hoped that the tool will be used by tour operators in the pursuit of more responsible tourism, and within the context of sustainability reporting. It provides a useful means of quantifying environmental impacts as well as identifying opportunities for cost savings, and Holiday Footprinting accounts for a range of diverse environmental impacts in a single easily understandable indicator. Instructions for the use of the tool are included at the end of this booklet.

It should be emphasised the tool on the enclosed disk allows only a first pass analysis. For guidance on how to carry out a more detailed analysis, and the development of scenarios for footprint reduction tailored to a particular holiday product, please contact Craig Simmons at *Best Foot Forward* ([holidays@bestfootforward.com](mailto:holidays@bestfootforward.com)).

## HOW IS AN ECOLOGICAL FOOTPRINT CAUSED?

The following two examples illustrate how an ecological footprint is caused by human activity.

1. A cooked meal of fish and rice requires bioproductive land for the rice, bioproductive sea for the fish, and forested “energy” land to re-absorb the carbon emitted during the processing and cooking.
2. Driving a car requires built land for roads, parking and so-on, as well as a large amount of forested “energy” land to re-absorb the carbon emissions from petrol use. In addition, energy and materials are used for construction and maintenance.

## LIMITATIONS – SOCIAL AND ECONOMIC IMPACTS

Holiday Footprinting addresses environmental impacts only. Sustainable development is generally recognised as comprising three “pillars” – social, economic, and environmental. While the pursuit of a reduced ecological footprint is a laudable goal for the tourism industry, this needs to be complemented by action aimed at maximising the positive social and economic impacts of tourism in destinations. In addition, holiday footprinting focuses on tourism *practice* only. It says nothing about tourism *development* (e.g. the planning and building of hotels) for which there are a range of sustainability issues (e.g. location and impacts on biodiversity and local people) that would need to be addressed in the pursuit of wholly sustainable tourism.

## HEADLINE RESULTS FOR THE MAJORCA AND CYPRUS HOLIDAYS

Assuming an average two-week holiday, the ecological footprint of the Majorca package holiday is 0.03 area units per bed night, and 0.07 area units per bed night in Cyprus. The total impact per guest is 0.37 area units for Majorca and 0.93 area units for Cyprus.

In the context of available per capita earthshare of approximately two area units, the Majorca and Cyprus holidays currently account for 20 per cent and 50 per cent of earthshare respectively. Returning to the financial analogy, this is equivalent to someone spending 20 per cent or 50 per cent of their annual income in a two week period!

By far the largest component of the ecological footprint of the two holidays is the return flight. This has a severe environmental impact and accounts for 56 per cent and 46 per cent of the Majorca and Cyprus holidays respectively, though the relative impact is nearly two times larger for the Cyprus holiday, owing to the greater distance travelled. Waste is responsible for 25 per cent of the Majorca holiday's footprint, and just over 35 per cent of the Cyprus holiday's footprint. For the Majorca holiday, food consumption is the third largest contributor, responsible for 9 per cent of the footprint. In contrast, excursions are the third largest component of the Cyprus holiday footprint, accounting for 6 per cent.

In short, going on a holiday abroad is an expensive proposition in terms of individual environmental sustainability. Not surprisingly, further consumption throughout the remaining 50 weeks of the year often results in an average annual per capita footprint greater than the available two area unit earthshare. The average UK citizen's annual footprint, for example, amounts to around 6.8 units, exceeding available earthshare by more than three times. On a global scale, humanity is currently eating into the Earth's capital, annually consuming around one third more resource than the planet produces. These are unsustainable situations.

It should be stressed, however, that while the average earthshare is a useful environmental sustainability benchmark, it represents an average global target. Similarly, there is nothing in the ecological footprinting method which sets a target for how much of an individual's footprint should, or could, be "used up" by a holiday. Assessment of an individual's overall footprint also requires consideration of activity and consumption outside the holiday period. If a person seeks to live in an environmentally sustainable manner, it is up to them as to how they choose to allocate their available earthshare.

## IMPROVEMENT SCENARIOS

Scenario improvement options designed to reduce the overall footprint of the holidays to Majorca and Cyprus, target the components with the largest footprint: air travel, waste, food, and hotel energy.

Air travel is one of the most difficult footprint components to reduce without radically changing the nature of the holiday business. Aircraft taking Thomson holidaymakers to Majorca and Cyprus fly full, or nearly full, in most cases, with seat occupancy rates of 91 per cent and 97 per cent respectively. However, even small changes can have a significant effect given the large environmental impact of flying. Although it is impossible to fill all seats on all flights, increasing both occupancy rates to 98 per cent should be possible. It is recognised that such an ambitious target is likely to be of greater significance to tour operators or airlines other than Thomson or Britannia Airways, where occupancy rates are currently lower. UK national average occupancy rates for international flights stand at 72.6 per cent (scheduled) and 89.2 per cent (non-scheduled). Scenarios for air travel also include improvement in the efficiency of air traffic control – Britannia Airways estimates that indirect routings and holding delays account for around 8 per cent of total fuel used.

There is also much room for improvement in waste management. There are large differences between the two holiday hotels. Waste tonnage is much larger for Cyprus than for Majorca. In addition, the Majorca hotel recycles 13 per cent of its waste, but the Cyprus hotel appears to recycle nothing. Options are therefore to reduce waste by 25 per cent, and to increase recycling by 25 per cent, achieving a 50 per cent diversion.

Options for food include switching 20 per cent of food tonnage from meat to dairy, fruit, vegetables, seafood and fish, as well as eliminating the use of internationally sourced food. At present, the footprint resulting from the production of a tonne of meat is around five times that of a tonne of grain. Transport impacts involved in sourcing food internationally also constitute a significant part of the footprint.

In both hotels, the largest energy impact arises from the consumption of fossil-fuel derived electricity suggesting opportunities to make use of solar technology. Savings are often cost effective as well as environmentally beneficial, reducing greenhouse gas emissions. Options are to reduce overall consumption by 20 per cent and, in addition, to switch 20 per cent of current fossil-based electricity use to renewable sources. Though few examples exist of hotels converting to renewable energy, in Cyprus the installation of solar panels on hotels is now a requirement.

Combining these scenarios would result in footprint reductions of 18 per cent for Majorca and 17 per cent for Cyprus. Returning to the financial analogy once more, this would be equivalent to saving around £70 on a £400 holiday – a worthwhile reduction. The potential percentage uptake of available earthshare for the two holidays would then be reduced to 16 per cent for Majorca (vs. 20 per cent pre-scenario), and 42 per cent for Cyprus (vs. 50 per cent pre scenario).

## WWF CONCLUSIONS

The Majorca and Cyprus holidays considered here, before scenario improvement, currently account for 20 per cent and 50 per cent respectively of available per capita earthshare of two area units. On a purely environmental level, it appears that the holiday to Majorca is a “better” choice than the holiday to Cyprus, leaving the holidaymaker with more earthshare left to “spend” at home during the rest of the year.<sup>1</sup> Both holidays currently rest within the limits of individual environmental sustainability with the proviso that the holidaymaker leads a much lower impact existence for the rest of the year. However, because of the greater amount of air travel involved, long-haul holidays (not considered here), whether all-inclusive or independent, are likely to fall outside the budgetary constraints of available per capita earthshare. Moreover, overall levels of consumption in the UK result in an average annual per capita footprint that is more than three times available per capita earthshare.

In certain respects, holidays abroad typify the unsustainable nature of current developed country consumption patterns. If everyone in the world took an annual holiday similar to the Cyprus break, an extra half-planet would be required to support the additional consumption involved in holidaying alone! It is unlikely, therefore, that holidays involving air travel will ever be wholly ‘sustainable’, but they can be made more “responsible”. It is therefore more useful to think about “responsible tourism” within the context of a wider sustainable development strategy.

Sustainable development asks that social and economic needs are also accounted for. In many instances, tourism also has negative social and cultural impacts in destinations, and economic benefits may not be evenly distributed. Nevertheless, tourism undoubtedly has great potential to support economic development and is an important element of many countries’ economies. It also has the potential to inform people about sustainable development and conservation. WWF is not in the business of trying to stop tourism, nor of advocating that people should not go on holiday abroad, but rather of working with the tourism industry to make their operations more responsible. It is important to ensure that tourism is controlled and, where it is championed as a driver of sustainable development, that it is part of a diversified economy, both at national and local levels.

Present consumer behaviour suggests that people do not take environmental impacts into account when buying a holiday. They are influenced more by price, and health and safety issues, rather than by some notional limit informed by an equitable or available per capita earthshare. However, a MORI survey for ABTA in 2000 found that around 80 per cent of package holidaymakers felt that it was important that their holiday did not damage the environment. Rather than making explicit demands about sustainability, because they are simply unaware of the real impacts that holidays can have, it is possible that there is an implicit assumption on the part of consumers that their holidays do *not* damage the environment. In meeting this assumption, the challenge for tour operators is to bring health, safety and sustainability together within a quality offer. This may ultimately require a radical rethink of core business, but there

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<sup>1</sup> It should be noted, however, that in order to judge the overall sustainability of specific holidays to particular destinations, it would be necessary to take into account the current state of the environment in each destination, as well as the effects of tourism as a whole on both local communities and on local and national economies. Moreover, all-inclusive package holidays and independent holidays are likely to impact in different ways. While, for example, package holiday flights may be more efficient in terms of per capita emissions than scheduled flights used by independent travellers, they may be less supportive of local economies where food or labour are imported or where tourists spend less money on local goods and services.

are a number of practical steps that tour operators can take that will help to reduce the footprint of holidays without affecting the existing nature of the product.

Encouraging contracted or owned hotels to benchmark their environmental performance, for example, will result in reduced resource use and cost savings. The hotel benchmarking tool ([www.benchmarkhotel.com](http://www.benchmarkhotel.com)) developed by WWF and IHEI (International Hotels Environment Initiative) is an excellent means of doing this. To a great extent, the key to achieving more sustainable tourism, rests in the *development* phase of tourism rather than the *practice* (i.e. holiday) phase. Holiday footprinting addresses tourism *practice* and, in estimating the environmental impact of a hotel, takes no account, for example, of whether that hotel has been built in an ecologically sensitive area or not. However, in so far as tour operators have influence in destination development, being seen to prefer resorts or hotels that use renewable energy sources and that are built in a manner sensitive to local communities and the environment, is one way of sending a signal to developers that sustainability should be a fundamental part of quality tourism in the 21st century rather than an optional extra. Tour operators can also seek to reduce the footprint of holidays by investing in renewable energy projects to offset the greenhouse gas emissions of air travel. Alternatively, *Climate Care* ([www.co2.org](http://www.co2.org)) and *Future Forests* ([www.futureforests.com](http://www.futureforests.com)) both offer schemes that enable tour operators to give their customers the option of investing in such offset projects themselves.<sup>2</sup>

Footprinting needs to be seen in the wider context of the corporate social responsibility agenda. In addition to reducing environmental impacts, the potential social and economic benefits that tourism can bring to destination communities, as well as raised awareness about environmental and cultural issues among holidaymakers, also need to be maximised. Footprinting is a single tool, and one that addresses environmental impacts only. It needs to be complemented by a range of other approaches such as benchmarking, supply chain management, sustainability reporting and certification. The tourism industry also needs to inform holidaymakers in a more comprehensive way not only about the nature of their operations, but also about what behaviour is appropriate in particular destinations, and what they can do as customers and consumers to promote more responsible tourism.

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<sup>2</sup> It should be noted that WWF does not view carbon sequestration (planting trees to sequester carbon dioxide from the atmosphere) as a long-term viable option for offsetting greenhouse gas emissions, but where offset schemes offer investment in renewable energy projects, this is acceptable.

## START RECOMMENDATIONS

Making holidays more responsible and moving them towards environmental sustainability requires footprint reduction through a combination of the use of more renewable energy sources and “clean” technologies, radically increased resource use efficiency, and waste reduction. In addition to reducing environmental impacts, the potential social and economic benefits that tourism can bring to destination communities, as well as raised awareness about environmental and cultural issues amongst holidaymakers, need to be maximised.

In terms of environmental sustainability, START (see Project Collaborators) recommends that tour operators take the following actions as first steps:

- use the holiday footprinting tool to assess the environmental impact of holiday products and take action to reduce this footprint;
- encourage contracted or owned hotels to become more efficient by promoting use of the WWF/IHEI benchmarking tool ([www.benchmarkhotel.com](http://www.benchmarkhotel.com));
- report on progress according to tourism-specific guidelines for sustainability reporting being produced by the Tour Operators Initiative ([www.toinitiative.org](http://www.toinitiative.org)) and the Global Reporting Initiative ([www.globalreporting.org](http://www.globalreporting.org)).

Further guidance and advice on responsible tourism and sustainability can be obtained from the Tour Operators Initiative [www.toinitiative.org](http://www.toinitiative.org)

## INSTRUCTIONS FOR USING THE HOLIDAY FOOTPRINTING TOOL

1. Open the Excel file as normal.
2. When asked, choose “enable macros”.
3. There are three worksheets in the file. The first you will see is entitled “Intro”. The other two are the tool itself and a copy of these instructions.
4. Adjust the “percentage view” if the hammock picture is either too small or too big for your screen size.
5. Once you have admired the picture, choose the “Footprint” worksheet by clicking on the tab at the bottom of the Excel window.
6. You will now see the Footprinting tool. This gives an estimate of the environmental impact of holiday products based on assessing five parameters (flight, waste, energy, food, other).
7. Click on the button entitled “Case Study: Cyprus”. Having done this, the initial data set and results that you will see will be those relating to the Cyprus holiday analysed in building the tool. The pies and bar charts give results as indicated. Under these are three headline results for the footprint of the holiday, the last of which indicates the percentage of available per capita earthshare that this particular holiday accounts for. For an explanation of the significance of this, please refer to the full *Holiday Footprinting* report.
8. Press the button entitled “Cyprus scenario” and the results change through the application of hypothetical adjustments in the five parameters. Again see the full *Holiday Footprinting* report for a detailed explanation of how the footprint of this holiday product might be reduced.
9. Repeat steps 6-10 using the Majorca buttons to explore another holiday product.
10. Measure the footprint of your own holiday products by entering the data for them in the appropriate fields.
11. Do this by hovering the cursor over the red triangles (17 in total) for an explanation of what data to include and how to do it. Begin with the two red triangles in the top left of the tool console relating to the holiday hotel (number of nights and number of guests).
12. Finally, explore your own scenario options by altering (reducing) the data inputs as far as realistically possible.
13. Print out your results for inclusion in reports and brochures, and on your website.
14. Contact *Best Foot Forward* to engage in a more detailed footprint assessment of your products.