

Preparing for Climate Change in the Outdoor Recreation Sector

2008 Seminar Proceedings
of the
Countryside Recreation Network

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"Preparing for Climate Change in the Outdoor Recreation Sector"

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Countryside Recreation Network

Sheffield Hallam University

Unit 10, Sheffield Science Park

Howard Street

Sheffield

S1 1WB

Tel: 0114 225 4494

Fax: 0114 225 2197

E-mail: crn@shu.ac.uk

Website: www.countrysiderecreation.org.uk

"Preparing for Climate Change in the Outdoor Recreation Sector"

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Countryside Recreation Network Seminar

"Preparing for Climate Change in the Outdoor Recreation Sector"

WELCOME AND INTRODUCTION

Andy Maginnis
Acting Countryside Manager
Worcestershire County Council

We know it's happening, we know what's causing it, we know what we should be doing to prevent it – or at least we've got a fairly shrewd idea – but how is climate change going to affect our sector and what do we need to do in response?

The purpose of this seminar is to focus on these last two questions. Certainly we all have individual and corporate responsibility to do what we can to reduce or eliminate actions that fuel climate change. Nevertheless, we are already seeing the effects of climate change and we need to act now to plan for the future.

The seminar will begin by confirming what we already know – or think we know – about climate change. In that context we will then consider case studies that illustrate how three organisations in our sector are already changing their management practices in response to climate change.

Workshops will be used to develop a picture of how these changes might affect each of our operations and what we might need to do in response. Examples of the impact of climate change might include, for example, coastal inundation, flash-flooding and drought. Potential impacts include the loss of public rights of way, the loss of recreational land, increased fire risk and increased erosion. Solutions could include improving drainage, managed realignment, irrigation of drought-sensitive areas, elevated bridges and re-routing of trails.

The seminar will conclude with some ideas on how to go about communicating the impact of climate change and the fact that our organisations need to develop action plans now. In summary the key messages are:

- Climate change is happening
- We need to assess how it might affect our sector NOW

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- We need to develop action plans NOW
- We should not carry out knee-jerk actions
- Our actions should be sustainable
- We should communicate in a positive way that takes account of who we are trying to influence

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Dr Mark Broadmeadow
Climate Change Programme Manager
Forestry Commission

Paper unavailable

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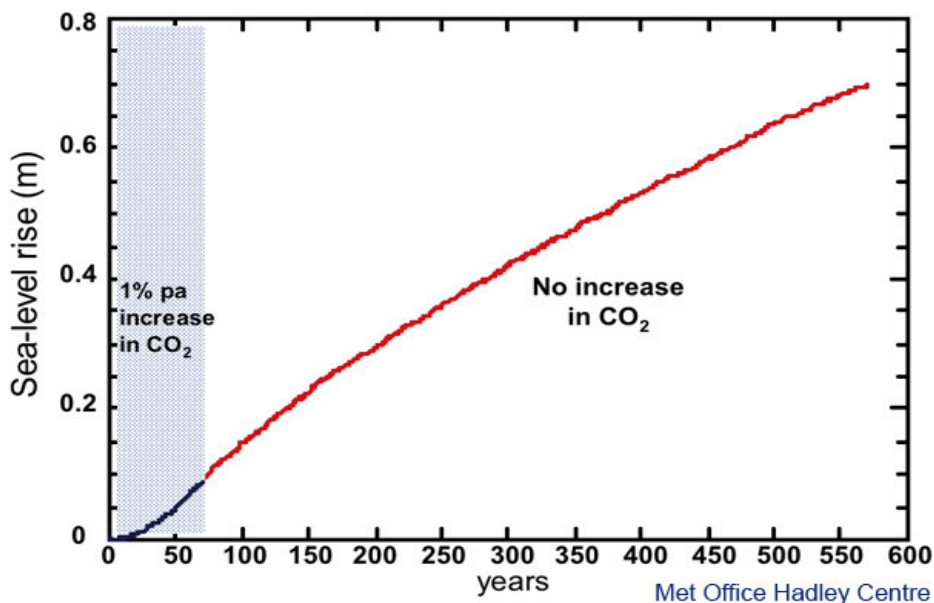
"Preparing for Climate Change in the Outdoor Recreation Sector"

William Crookshank
Recreation Policy and Process Manager
Environment Agency

Case Study 1

The Facts

Expansion from slow penetration of heat into the deep ocean will continue to raise sea levels for centuries.



Greenhouse effect heating in the atmosphere is rapidly transferred into surface ocean waters. It then slowly penetrates deeper and causes more and more of the ocean depth to expand and hence leads to further sea level rise.

This figure shows the sea level rise due to ocean thermal expansion, estimated from a climate model experiment where CO₂ concentration in the atmosphere was hypothetically increased by 1% per year from time zero to 70 years (that is, until it had doubled) and was then stabilised at that concentration, that is, no further increase occurred. The initial blue line shows thermal expansion while the climate was changing, the continuing red line shows sea level rise after CO₂ concentration had been stabilised. Despite the fact that CO₂ in the atmosphere did not change after year 70, the sea level carries on rising for many hundreds of years, with only a slow decrease in the rate of rise. So at any time the sea level rise caused by the man-made greenhouse effect carries with it a commitment to an additional, inescapable, rise.

Other changes will also have an impact on tides and coastal flooding. Our climate seems to be becoming more extreme, with more severe weather events. These will bring, intense low pressures which allow tides to rise higher, storm winds which push tides and heavy rain which raises river levels causing issues around estuaries.

Sea Defences and the Environment Agency's role

The Agency has responsibilities relating to coastal flood risk management and erosion.

There are 4,400km of sea defences in England and Wales and the Agency manages 1,250km of them. The others are managed mainly by Local Authorities.

Defences vary from site to site and also in size, they can, for example, be concrete walls, shingle banks, earth banks, etc. Their aim is to protect people and property. The 2004 Office of Science and Technology foresight report "Future Flooding" said that the risk of coastal flooding would rise by between 4 and 10 times and that one third of the existing sea defences could be destroyed. The Agency at present has plans to withdraw from between 5 and 10% of the defences it manages.

Managing sea level rise and the future shape of the coast is done through realignment. This takes two main forms: either managed realignment where flood banks are re positioned on a new line, or withdrawal of maintenance where banks are no longer maintained and nature is left to take its course.

Boston Washbanks

The Boston Washbanks are on the south side of the wash. They protect 80,000 hectares of land, much of which is 3m below the surge tide.

In 2003 a piece of realignment was completed at Frieston Marshes and was the biggest of its type at that time. The flood banks were moved back. This created 80 hectares of salt marsh and 12 hectares of brackish fresh water was created where the earth for the banks was extracted.

Associated with this work was considerable recreational benefit. The project included a new footpaths and cycle routes, improved links to existing routes, car

parks, bird hides, information signage, leaflets and a website. Two RSPB wardens were employed and in the first year visitor numbers to the site increased by 76,000.

This shows how recreation can be incorporated into this work and rights of way can be moved.

The Blyth Estuary and Walberswick – Suffolk

This case study shows the issues associated with the withdrawal of maintenance.

Already on the estuary some flood banks have been lost and the estuary has spread. The remains of the banks still exist in parts and the rights of way that used to run on them are still on the OS maps. This does cause issues with people getting stuck on the mudflats of the estuary. The banks here are only small, around 1.5m high and just wide enough to have a footpath on top.

Up stream of the A12, the first crossing point on the estuary, the banks breached in November 2006 and the Agency now wants to withdraw maintenance from them. Others could pick up the maintenance of the banks but as the agricultural land they protect is of little value it is not thought likely. This will result in more footpaths being lost.

The Agency has published maps showing what it thinks the estuary will look like in 5 and twenty years time. There will be considerable loss of rights of way but also some moorings for recreational boats will be lost.

New coastal access legislation may be able to help in these instances, with the rights of way. The legislation may allow routes to move as the coast moves. Whilst this would enable routes to continue to exist it may create issues for the Agency because any proposal to stop maintenance may not only mean that a landowner's land is flooded, but also that a new right of way is created on it.

Further down the coast the Walberswick National Nature Reserve is protected by a shingle bank. This reserve has possibly the largest single stand of fresh water reed bed in the country. The reserve also has a network of rights of way, including the Suffolk Coastal Trail. In the November 2006 flooding the shingle banks was breached and the area was flooded by the sea.

The Agency also plans to withdraw maintenance from this bank.

The decision as to where flood banks are maintained is made using a cost benefit calculation. A value is given to what is protected and compared with the cost of maintenance. These calculations take place under strict guidance from Defra.

Whilst rights of way may be part of the calculation they are not a significant part and banks would not be maintained purely for recreation purposes.

The Walberswick reserve is protected under the Habitat Directive, but even this is not strong enough to force the maintenance of the banks. Instead the habitat lost when the bank goes will be re-created elsewhere as mitigation.

The Future

These examples show us that the coast is going to change as sea level rises and that this will result in the loss of rights of way and recreational assets.

What is important therefore is that those responsible for rights of way need to think about what the future is going to look like and plan for the changes. It may be more sensible to invest in moving footpaths rather than trying to maintain them where they are.

Similarly when planning where to put new recreational assets, such as slipways and sailing clubs, it is important to consider what the future shape of the coast will look like before deciding where to site them.

Other issues

The Agency is also planning for the impact of other changes.

The summer floods of 2007 on the Thames had a big impact on it as a recreational asset. The river had 'red boards' on it for 6 weeks during the summer. The boards are advisory boards put out by the Agency, as the navigation authority, to recommend to people that they do not go on to the river with their boats. The Agency cannot stop people going on the river as it is a public right.

The boards were out for a significant part of the busiest summer period on the river. This resulted in a reduction of craft registered over that period.

The flooding was not expected at that time of year. It created wider issues because when the floods are expected, in the winter, most craft are off the river. In the summer there were lots of craft on the river which brought associated issues.

The Agency is also concerned about climate change in relation to fish stocks. Fish stocks which in turn provide recreation for around 3 million people.

Bigger floods at different times of year are thought to be having a potential impact on the spawning abilities of some coarse fish species such as Dace.

Higher temperatures and low river flows are also seen as having the potential to impact on salmonid species such as salmon and trout. If river temperatures get too high the young fish die. Many anglers remove riverside vegetation to make it easier to fish. It may be that this needs to stop to create shading on nursery rivers.

There is also local concern in the South West that some small beaches may be lost.

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John Atkinson
Upland Access Project Manager
The National Trust

Case Study 2

Footpath erosion in the Lake District

The Scenario

The Lake District National Park remains one of our most cherished landscapes, attracting some 12 million visitors a year. Yet this incredible countryside, the inspiration for generations of writers, artists, and of course walkers, is being eroded beneath our very feet.

The Process:

- Heavy use of paths by walkers leads to the trampling and compaction of the soil and subsequent loss of vegetation.
- Over grazing by sheep can lead to a decrease of the vegetation cover and the protection it offers thus speeding up the process
- Once the vegetation is lost the topsoil is quickly worn away leaving a shallow gully and a firm aggregate path.
- Water can not penetrate the compacted soil at the edges of the path and therefore collects and starts running down the path forming a deeper gully.

- As the path becomes more eroded people then tend to walk to the side of this gully thus repeating the process and widening the path into an erosion scar.

This is a very real problem not a hypothetical one – a study of 180 paths in 1999 found that 145 required urgent treatment. Many footpaths in the Lake District are already in urgent need of treatment to halt erosion, in the Bassenthwaite area alone, around 50% of paths are seen as vulnerable to erosion with one being over twenty metres wide. The pressure on these paths will increase as a result of a combination of climate change and the steady stomp of a growing number of ever-intrepid visitors to the Lake District.

Increased Pressure:

The following features are a direct result of Climate Change

- In winter Warmer temperatures mean the loss of the protective snow cover, which in turn leads to the soil surface more prone to a more intense freeze/thaw cycle that breaks down the soil structure and surface rock.
- This lack of snow also makes the paths more vulnerable to the intense winter rainfall that climate change is bringing.
- Climate change will bring about more intense rain, potentially more storms and therefore more erosion.

Other factors include

- By their very nature, these upland paths are on steep gradients, increasing the run-off of water and also the probability of path 'wash-outs'.
- Additionally, walkers are now better equipped with all-weather gear to tackle the higher peaks during the winter months, when the paths are at their most vulnerable; left unchecked, the erosion could pose a serious challenge to walkers and tourism more generally.

Path managers need to anticipate and adapt to climate change. Proactive rather than reactive responses are the most effective. Through the Fix the Fells project these management processes have already being introduced, for example, working on paths which are starting to wear as well as the badly eroded ones. Also, by raising the problems with fell users we hope to promote best practice and involvement among walkers when using the paths as well as encouraging visitors to try alternative, less popular routes and thus spreading the load as well as

increasing their enjoyment. An integral part of this process is building support and appreciation of sustainable access to the fells by both existing users and under-represented communities. We are already assisted by considerable voluntary support from all walks of life. We intend to increase this support and encourage a wider understanding of upland walking among under-represented groups.

The Solutions:

- Continue repairing seriously eroded landscapes and associated paths resulting from access coupled with the effects of the Lake District climate.
- Increasingly concentrate on transferring the practical work away from the larger projects, towards smaller, pre-emptive type works.
- Provide training and development for all staff, volunteers and contractors involved in the Project.
- Undertake audience development designed to encourage greater understanding of and support for access to the fells by both existing users and identified target audiences.
- Coupled land management projects to give sustainable grazing regimes leading to vigorous vegetation

The Future:

- By the end of the project we hope to have brought the problem under control by repairing the 180 paths hi-lighted in the original report plus the many others that have had preventative proactive works.
- Have a group of well trained professional staff, contractors and volunteers.
- A large volunteering base to complete the extensive maintenance and monitoring work required to ensure the path network is protected for the future
- Have better informed path users who understand the potential problems associated with their activities
- Coupled land management with compatible objectives
- Everyone can help by "TREADING LIGHTLY", to cause the minimum impact both when out for a walk and in there every day lives

Process of soil erosion

When vegetation is removed or damaged, soil can be depleted over time as forces, including the weather and traffic, act on the bare soil surface. Although soil erosion is a natural process, that has been quantified, albeit with some difficulty, it is the accelerated (unnatural) losses of soil that are of concern.

Erosive forces can be classified in two ways. Describing them as either an *initiator* or *maintainer* of erosion, is a useful classification when targeting remediation of eroded areas, and minimising the creation of further erosion. Alternatively they can be classed as *natural* (can't be controlled) or *accelerated* (can be controlled).

Causes of soil erosion

Natural causes

These include erosion due to water (rainfall and groundwater), wind, frost heave, and combinations of these elements. Some examples are given below:

- The drying out of peat causes vegetation to be lost. The peat is then prone to crusting over or being washed or blown away.
- Waterlogging of the top soil following heavy rain can lead to blow outs as the top layer of turf and soil blisters and parts company with the sub soil or bed rock causing landslides.
- The natural breakdown of unstable soil or headwall retreat of upland streams can cause erosion. Streams creeping uphill may breach intact bogs, causing loss of water and soil.
- Gully erosion can also be caused by natural processes and once started can be difficult to control. Soil at the gully edges is subject to desiccation and therefore vulnerable to removal by wind, frost and water.
- Once exposed, frost can break up peat or mineral soil, destroying existing soil bonding; the thawed soil can be highly unstable and prone to removal by trampling, water or wind.

Accelerated causes

Human activities such as walking, shooting, draining, driving, military exercises, burning and parking can disrupt vegetation and accelerate erosion, as can grazing by animals such as sheep, cattle and rabbits, and industrial activities such as water abstraction, forestry, mining or pipeline installation.

- Heavy grazing pressure, particularly sheep, may carve out hillside niches (sheep scars). These expose the soil, making it susceptible to removal by water and wind. Soil loss may be exacerbated if grazing has kept the vegetation short. As sheep scars get larger, localised slope failure (slippage) may occur.

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- The soils on frequently used footpaths will inevitably become exposed and subject to erosive forces. The path is likely to become muddy or loose and as people tend to avoid this, the path continually widens.
- Historic draining of soil for tree planting and moorland grips, and tree felling itself can all result in exposed, degraded soil that is then subject to erosive forces.
- Fire caused by out-of-control moor burns, or by carelessness, can destroy vegetation, peat and the seed bank. Any soils that are left are subject to erosive forces.

Erosion is often caused by natural processes that have been accelerated by non-natural activities.

Implication of soil erosion

The implications of soil erosion can be divided into onsite and offsite factors.

Problems onsite include:

- Erosion scars that limit the aesthetic appeal of the landscape and are unpleasant to walk on.
- Poaching and erosion which reduces the amount of vegetation available for grazing.
- Reduction in the biodiversity and loss of nationally important flora and fauna.
- Reduction of soil reserves. Soil should be treated as a resource of which there is a limited supply, not least because upland soils are an important source of plant nutrients, and also act as a carbon reservoir and can sequester atmospheric pollutants.
- Removal of protective soil especially peat from archaeological remains

Offsite impacts of upland soil erosion include:

- Increased risk and propensity for flooding: a compacted surface devoid of vegetation does not absorb rainfall as well as vegetated ground and the excess rainfall run-off can contribute to the risk of flooding.
- Poor aquifer recharge as, again, a lack of vegetation reduces rainfall infiltration.
- Sedimentation in rivers, reservoirs and lakes leading to a decline in fish stocks due to increased siltation and pollutants.

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- Increased gravel movement causing build up on the river beds leading to flooding and bank erosion.
- Loss of soil nutrients into watercourses lower down the valleys causing eutrophication.
- Increased likelihood of pollutants entering the water including pathogens, chemicals, heavy metals and fluvic and humic acids.

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Richard Gunton
Director of Recreation and Park Management
North Yorkshire Moors National Park Authority

Case Study 3

A great deal of work has been done to forecast the likely impacts of climate change around the world. "Your Climate", North Yorkshires climate change action plan brings together the existing science and crystallises it into a few headline predictions as to how the things in the county will have changed by 2080:

- Average temperatures up by around 4 centigrade
- 15% - 50% less summer rainfall
- Increased high rainfall intensities during the winter months
- A fourfold decrease in frost nights and two-threefold increase in "warm" summer days
- More frequent extreme weather events
- More depressions across the UK leading to potentially higher frequency of strong winds
- Up to 100 days longer growing season
- Sea level rises of up to 82cm

There is however a hazard inherent in making such forward looking predictions, that those receiving this uncomfortable message can avoid action seeing 2080 as someone else's concern or finding comfort in the intervening 70 years.

But the need to prepare and to react is upon us. Firstly there is "climate lag" the climate is like a tanker, it takes a lot of turning around, action is required now to

mitigate the future impact. Also, we are already living with the changes and need to take action now to adapt. Both longer term preparation and immediate adaptation are required.

The Yorkshire Futures report "Warming up the region" hints at how the change is well underway, it warns that floods and droughts could become the norm in our lifetime and tells of a threefold increase in wet winter days in Whitby and of the 1990s being the warmest decade for Sheffield since the 19th Century. In the North York Moors we have in the past few years had some stark warnings, pointers to the sort of event that we are going to need to deal with more and more often.

- **More Floods** - In the last six years we have experienced three serious flooding incidents in the North York Moors. In the worst of these events on June 17th 2005, a whole month's rain fell in less than an hour – about an inch in 15 minutes, levels in rivers and their small tributaries rose by several metres carrying trees, cars and bridges down the valleys. The combined total cost of repairing public rights of way after these floods was about £600,000, or £100,000 per year on average. With an annual public rights of way maintenance budget of £120,000, without special provision, our network will soon fall apart.
- **More fire risk** - the warmer summers and longer drier periods inevitably lead to an increase in the risk of and the incidence of wildfires with enormous consequences. Four years ago, a fire at Fylingdales Moor, close to the Lyke Wake Walk destroyed around 2 sq miles of moor, threatened homes and required the attendance of every fire tender in North Yorkshire and some from Cleveland. We need to be cleverer about how we prevent wildfire and how we deal with the aftermath.
- **More coastal erosion** - We have higher sea levels and increasingly angry seas. This combined with increased run off from the landward side means our coast line is eroding more and more rapidly. The coastal stretches of the Cleveland Way National Trail are being breached more frequently resulting in costly and lengthy legal procedures to re-establish the route.
- **Longer growing seasons** - We have changing, lengthening growing seasons meaning our paths become more prone to blockage by vegetation. In central England our plants are already growing for an extra month each year when compared with 1900.
- **Changing patterns of tourism and countryside recreation** – it is highly likely that we are already witnessing the beginnings of a change in the way that people travel and take breaks. Better weather at home may well present opportunities for businesses associated with tourism and hospitality. The reaction by both governments and individuals to the negative impacts of air (and other forms) travel may also bring about change. The long term implications of this are still largely unclear and do not form part of this presentation.

As a public authority engaged in countryside and recreation management, the response that we make to the changing climate needs to include both mitigation against the causes of climate change and adaptation to the impacts arising from climate change. There is a great deal of good work going on across the family of National Parks and other protected areas and whilst we in the North York Moors are still in the process of developing a comprehensive climate change action plan, we have already made changes to the way we work and the things that we do.

Adaptation

Flood risk

The changes we have made in light of the heightened risk of flooding include:

- Increasing the span and height of bridges to make them better able to cope with sudden fluctuations in river level
- Use of a different design of bridge produced by Forestry Commission. A light weight open lattice supporting structure which is less likely to present resistance to rising waters and a fine timber structure capable of spanning wide gaps without the need for columns.
- Assessing the need for bridges – where possible and appropriate, using stepping stones or fords to cross waterways
- Clearing debris from the watercourse to lessen the likelihood of rising waters becoming trapped and building up into a more destructive mass
- Blocking grips to hold water on the moor and slow the speed of run off.

Fire risk

To ready ourselves for periods of high fire risk we have:

- Worked with Natural England on the development of fire risk monitoring systems.
- Drawn together emergency services, landowners, recreation providers, conservationists into a fire liaison panel which agrees a graduated response to levels of risk, measures to be taken to raise awareness and best practice in prevention. Early measures have included development of fire plans for all moorland estates to be held at local fire stations, joint training exercises, work with highways authorities to manage litter and vegetation alongside laybys, discussed and promoted best practice in moorland management to prevent the easy spread of fire and a protocol for use of helicopters in fire fighting.
- Developed new techniques for quick re-establishment of moorland vegetation following wildfire.

Coastal Erosion

We accept that we are largely powerless to prevent the continuing erosion of North Yorkshire's coastal cliffs. We have chosen rather to take measures that make it less likely that a collapsing cliff will take with it a route or that, if it does, it is an easy task to re-establish the path.

- Where possible, the establishment of moving path agreements where the line of the path is agreed to move and follow the cliff top as it recedes.
- Agreement of a fixed route but within a wider margin of access allowing for some erosion to occur before the path is threatened.
- Set back, agreeing the line of the path some metres back from the cliff edge.

In the longer run it is hoped that new coastal access rights will establish in law a new class of linear access route which can move with the receding cliff.

Resources for recovery

Another important element in our ability to deal with the impacts of climate change has been quickly and effectively finding the resources necessary for recovery.

Following the floods of 2005, we worked with our colleagues in the County Council to secure resources from the Government's emergency relief fund, the Belwin Fund. We have since worked with the protected areas team at DEFRA to ensure that National Park Authorities were included in the list of bodies eligible to secure help from the fund in their own right.

Also following the 2005 floods we were able to secure substantial recovery assistance from the regional development agency, Yorkshire Forward. This hinged upon the appreciation by Yorkshire Forward of the huge value of the public rights of way network to the local economy.

Mitigation

As outdoor recreation managers there are a number of things that we might consider doing as part of a plan to reduce the contribution that our work makes to climate change. Some of the measures that we use include:

Car park charges

Flat rate charging (it costs as much for an hour as it does for a day) may discourage visitors from moving on from car park to car park. This is combined with refund of parking charges for those travelling on into the National Park by the buses or trains which call at every charged car park.

Public transport

We are not the only authority to operate a tailor made bus service encouraging visitors to leave their cars at home and making the area accessible to some people who would otherwise not be able to visit. Our most recent calculations suggest that the Moorsbus service prevented car miles equivalent to travelling to

the moon and back five times and saved 400 tonnes of carbon being released into the atmosphere.

Greening public buildings

We have recently embarked (as have many others) on a programme of reducing the impact of our recreational facilities, installing energy and water saving features in visitor centres and public toilets.

Internal “corporate” action

There is also a great deal we are all doing to reduce our corporate footprint. From reducing energy consumption through simple measures such as issuing fleeces to cold staff (rather than turning up the heat), or more contentious actions such as removing essential car user allowance and providing a fleet of greener vehicles, encouraging car sharing and introducing comprehensive recycling schemes

All in all, climate change, despite the long term nature of most forecasts, is already having a considerable impact on our work and is a key factor to be embedded in our management planning and activity. Our response needs to be well considered, based upon the best available information regarding the impact on our particular area, immediate and wide ranging including both mitigation of the causes of climate change and adaptation to the impacts of climate change.

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Georgina Combes
Senior Consultant
Futerra

A hot topic

In Al Gore's *An Inconvenient Truth* presentation he introduces new terminology for what has been described as the 'biggest challenge of our times'. In particular he talks about the 'climate crisis'. Despite this seemingly negative choice of words, Mr Gore uses the Chinese meaning of crisis that is made up of the symbols for danger *and* opportunity. All too often messages created by the green movement focus on the doom and gloom of environmental destruction and the frustrated despair of pioneering greens. Instead, to inspire people to make everyday changes, communicators need to be more positive in their messaging focusing on the opportunities for tackling climate change.

People now almost unanimously agree that climate change is a reality and the activities of mankind are to blame. To put it into some sort of perspective, in less than 200 years our actions have doubled the atmospheric concentration of greenhouse gases relative to pre-industrial levels. And on our current emissions trajectory the only way is up! However, engaging the public with this type of scary, inconceivable statistic is rather futile. Unless your audience is a group of scientists whose world revolves around graphs, spreadsheets and scientific facts, the hockey stick curve, parts per million and carbon dioxide equivalents will fall on

deaf ears. What we need is recognisable climate change ambassadors like Lisa Simpson, Barbie, or the now ubiquitous green celebrity. All these icons talk about climate change in a way that feels familiar, using language we associate with and understand. Whereas, the graphs, charts and scientific analysis of climate change belong to the climate specialists and thereby alienate ordinary people like you and me.

Effective messaging

Many climate-related campaigns have successfully communicated to their audiences in non-alienating ways by using inclusive, warm language such as the Lake District's *Love the Lakes* messaging. This example marks a shift towards celebrating the beauty of our landscape encouraging us to respect and protect it, rather than just pointing out how our activities are destroying it. Devon's tourism marketers have used a similar tactic with their *The Perfect Answer to Global Warming? Devon Chillin'* messaging and captivating photography that has helped to put Devon on the map as a cool, popular holiday destination. It has been so successful that a recent World Travel Markets Global Trends Survey ranked Devon alongside Brazil and Los Vegas as the most popular destinations for UK travellers.

Another successful sustainable travel-related campaign that uses behaviour change tactics is the *Had Enough?* Campaign from responsibletravel.com. The aim of their messaging is to get people to take their holidays in places that 'haven't been ravaged by mass tourism' and won't be damaged as a result of their visit, whether it's from air or road travel or the type of activities they indulge in during their stay. The campaign effectively uses humorous images of lobster-like holiday-makers filling every square centimetre of a public swimming bath to highlight the myth that this type of holiday is a relaxing break. Using humour circumvents the need to preach and reduces the likelihood of an automatic 'sod-off' reaction.

It is important to tailor messages to your target audience for best effect. A telling example is the story behind the *Don't Mess With Texas* campaign. The state of Texas had a litter problem which initially authorities thought could be dealt with through a public campaign highlighting the effect of littering on the local wildlife.

This had very little impact. So the campaign team went back to the drawing board and began by looking at who were the worst litter offenders and then considering what this group care about. Once they had discovered that young men were behind the problem and that they are staunchly patriotic to the state, tailoring the campaign messages to the target audience was much easier. The resulting campaign fronted by the strap line *Don't Mess With Texas* was hugely successful because it hooked into the young men's frame of reference.

In promoting more environmentally-friendly ways of travelling it's important to recognise and reward the people who have committed to reducing their travel-related carbon footprint. The Stop Urban 4x4 campaign group had traditionally taken direct action against owners of gas-guzzlers by pointing out the damage their vehicles are having on the environment. However last year they changed the tack of their messages and ran a positive messaging campaign. It was centred around Valentine's Day with cards for drivers of hybrids and electric cars displayed the strap line *We love your car* and thanking the drivers for caring about the future.

Giving thanks and feedback is powerful too. Without recognising 'good' behaviours people don't know that they're doing the right thing. Feedback reduces anxiety and reinforces positive behaviours. The Lights Out London campaign did this by saying 'Thank you London' following the Capital Radio-promoted hour-long switch off of lights in homes, offices and prominent landmarks such as Buckingham Palace and the London Eye one evening last year. The campaign's success was in part down to the tangible, visible and attention-grabbing nature of the call-to-action, as well as the feedback it gave to those who took part.

Another tool for engagement is the pledge concept. Pledges have parameters, meaning that the more people you make your commitment to the more likely you are to uphold it, especially when you know those people or person will hold you accountable and care whether you stay true to your word.

Climate change language

Despite surveys showing that public awareness of climate change is increasing, the language we (scientists, the press, technical specialists) use to describe it, is

at best confusing and at worse contradictory. We have got a hard job on our hands with terminology like inter-generational equity, mitigation and adaptation, and the precautionary principles to communicate. Also, we are not always rigorous and use global warming and climate change interchangeable when they do not mean the same thing. We are also guilty of focusing on the negative impacts 'Climate Fear' as opposed to the positive solutions 'Climate Hope' for climate change. The problem with creating fear is that it's more likely to lead to apathy if individuals have no agency to act upon the threat. We must use the fear message with great caution.

Who are you talking to?

When communicating any message it is essential to know who you are talking to. The more personally tailored the message the greater the chance of it having the desired impact. For instance, there's the example of the hotel that wanted to encourage its guests to re-use their towels rather than sending them to the laundry on a daily basis. The most effective message was the most personally directed one:

People in this room have helped save the environment by re-using their towels, as opposed to using wording such as People in this hotel... or Help this hotel save the environment by re-using your towels.

Even if a high percentage of the UK public feel personally concerned about the impact of climate change only a small proportion, less than 10%, think they can have a large influence of limiting climate change¹. Instead they expect industry and government to be taking action. People believe the problem is too large to be alleviated by their individual actions.

One way of segmenting the public is using the values modes model devised by Chris Rose and Pat Dade (Defra. Base: 3,000 people). They categorise people into three groups; settlers, prospectors and pioneers. Settlers represent 21% of the population and are the backward-looking traditionalists who believe yesterday

was better. Their role model is the Queen. Prospectors represent the largest group at 44% and include many young people. They are characteristically motivated by success and respond to fashions, trends and high-status behaviours, such as Princes William and Harry. Finally are the pioneers, the second largest group where the traditional environmentalists sit. Think Prince Charles. They like change and self-discovery and have inner directed needs. Traditionally messages around green behaviours have had a low take up because it had been the pioneers trying to talk to the prospectors and settlers without recognising that they talk a different language.

Why bother?

Research into motivating conservation behaviour change in the tourism and outdoor recreation sector has shown that childhood experience of nature is the single most important factor in developing personal concern for the environment. This is a great starting point for encouraging awareness and understanding of environmental issues. However the important thing to remember is that people do not go about leisure activities with the intention of learning about climate change so to get messages across they must be framed within the context of outdoor recreation.

Other challenges for the sector include the fact that climate change is not seen as a here and now issue, and the use of complicated language to describe the problem means that it's not seen as a human issue. Climate change messages also need to compete with other day-to-day issues faced by rural communities.

Influencing tactics

To overcome these challenges there are a number of communication tactics we can use. Here is a selection from Futerra's publications: *The Rules of the Game* and *New Rules: New Game*. <http://www.futerra.co.uk/downloads/>

Don't rely on concern about children's future or human survival instincts. That is not to say we cannot make use of this concern in our communications but that we should not rely on the belief that people are concerned about their children's future and so will behave in their best interests. Research has shown that people without

children may care more about climate change than those with children. A good analogy is the example of the behaviours provoked by Jamie Oliver's healthy food in schools campaign. Although most mothers were supportive of the campaign some were found to be feeding burgers and chips to their children through the school railings despite the school meals being a healthier choice for their children.

Don't create fear without agency. Fear can create apathy if individuals have no agency to act upon the threat. Use fear messages with caution.

Balance language. We must use balanced language when talking about climate change. Communicators are being accused of pushing 'climate porn'. That is, the language we use to describe climate change challenges is huge, hyperbolic and almost pornographic, but the language of solutions is often small, cheap and easy. To change behaviour we need to make the solutions sound more heroic by using grander terms and making the scale of the solutions sound equal to the scale of the problem. This is akin to making good behaviours sound normal and bad ones sound rare.

Make clear, direct requests. Be clear and specific about what you want people to do to tackle climate change.

Empathy and imagination are power tools. We have more empathy for people and animals than landscapes. The power is in the eyes. If places are threatened by climate change show the people and animals in these landscapes who are in danger.

Catch me when I'm open to change. People are far more open to change during transition zones, such as getting married, buying a house, and the start of the year because their habits are in flux. Less significant times of personal change work well too, such as during the summer holidays. Catch people with behaviour change messages when they are changing already.

"Preparing for Climate Change in the Outdoor Recreation Sector"

Make climate change action a pleasure. We make less time for 'admin' and much more time for leisure, pleasure and fulfilment so we need to make positive behaviours part of this time, not a 'chore'.

Beware the impacts of cognitive dissonance. If you confront someone with the difference between their attitude and their actions, for example pointing out that they say they care about the environment but drive a large car, then they are more likely to change their attitude than their action.

Feedback is crucial. If you don't give feedback or thank people, how do they know they are doing the right thing? Feedback reduces anxiety and reinforces behaviours and helps people believe that action makes a difference.

Label people. If someone undertakes a climate-friendly behaviour such as cycling instead of driving (whether they intended to do it for environmental benefits or not), say "thank you, you're clearly someone who cares about the climate". Once people have been labelled they are more likely to continue to behave in that way.

Remember

If you remember three things about communicating climate change they are to be: positive, targeted and creative.

Finally, we remember Martin Luther King because he had a positive vision. Would we still be talking about him if he'd had a nightmare vision of racial segregation?

APPENDIX A

Preparing for Climate Change in the Outdoor Recreation Sector Seminar

**30 January 2008
Priory Rooms, Birmingham**

PROGRAMME

09.30 Registration and refreshments

10.00 Welcome by Chair - *Andy Maginnis, Worcestershire County Council*

**10.15 The Impact of Climate Change
Climate Change and the "Outdoors" : implications and options for
adaptation"**
Dr Mark Broadmeadow- Forestry Commission

10.45 Case Study 1
William Crookshank- Environment Agency

11.05 Refreshments

11.30 Case Study 2
John Atkinson- The National Trust

11.50 Case Study 3
Richard Gunton- North York Moors National Park Authority

12.10 Question and Answer Session

12.30 Lunch

13.30 Workshop 1: Scoping the impact on your operation

14.15 Workshop 2: Preparing an action plan

For the workshops, the audience will be split into 2 groups. Both groups will work simultaneously on workshop 1 followed by workshop 2. Workshop facilitators are Mr John Watkins from CCW and Mr Chris Gordon from Natural England.

15:00 Refreshments

15.20 Communicating Climate Change
Georgina Combs- Futerra

15:50 Summary (Chair)

16.00 CLOSE

APPENDIX B

BIOGRAPHIES OF SPEAKERS

PREPARING FOR CLIMATE CHANGE IN THE OUTDOOR RECREATION SECTOR

**30 January 2008
The Priory Rooms
Birmingham**

CHAIR

**Andy Maginnis
Acting Countryside Manager
Worcestershire County Council**

Andy Maginnis is Acting Countryside Manager for Worcestershire County Council. He represents the Local Government Association on the Countryside Recreation Network and the Countryside Management Association on the Country Parks Network.

Dr Mark Broadmeadow
Climate Change Programme Manager
Forestry Commission

Mark Broadmeadow is the Climate Change Programme Manager for Forestry Commission England. His responsibilities include the drawing up of a climate change adaptation strategy as part of the Delivery Plan for England's revised forestry strategy '*England's Trees, Woodlands and Forests*', ensuring that the FC's contribution to mitigating climate change is maximised and that the FC plays a full role in meeting obligations under the Water Framework Directive.

Previously, he led the Climate Change Impacts and Forest Carbon Dynamics research programmes for Forest Research (the FC's Research Agency), which he joined in 1993.

Mark is a plant physiologist by training, having received his PhD from Newcastle University with a thesis entitled '*Carbon isotope discrimination in forest canopies*'.

William Crookshank
Recreation Policy and Process Manager
Environment Agency

William is currently the Recreation Policy and Process Manager in the Environment Agency. Covering England and Wales, coordinating the delivery of the Agency's statutory duties for recreation on or near inland and coastal water, namely to promote it and ensure Agency land and projects are managed to take access into account. He is managing the delivery strategic planning for water recreation in two pilot regions, the South West and East of England, for Defra and in Wales for Welsh Assembly Government. This can be seen at: www.brighton.ac.uk/waterrecreation)

William has been with the Environment Agency and its predecessor the NRA since 1991 and has worked in Fisheries, Conservation and Water resources in the Agency's North West and North East Regions. Prior to this he worked in the private sector managing countrysports, including managing a large trout fishery. In his spare time he looks after his two children and enjoys being in the outdoors as much as possible. He is passionate about seeing more people using the outdoors.

**John Atkinson
Upland Access Project Manager
The National Trust**

John was born and brought up in the Lake District and his family have lived there since records began, as well as working for the Trust John is a hill farmer and is involved with several farming organisations.

John's main role within the Trust is to manage the current Heritage Lottery FixtheFells project, which followed on from the Upland Restoration Project. Both are a joint venture with the Lake District National Park and other partners. The aim of the project is to reduce the level of path erosion in the Lakeland fells to a sustainable level over a ten-year period. This involves overseeing the whole project, which is spread over several properties, and raising funds to match the HLF funding as well as plan for the future. The role also involves standard setting, advising on upland access and land erosion issues, promoting good practice as well as organising training for all staff connected with access work.

John is the National NT representative on the committee of the Dry Stone Walling Association and is therefore the first point of contact for walling issues.

John also sits on the Health and Safety committee as the rep for Estate, Path and Campsite staff as well as the crew of Gondola.

John's main aim is to improve the level of understanding within the Trust as to the importance of erosion control and landscape protection and improve liaison with other organisations throughout the UK.

Richard Gunton
Director of Recreation and Park Management
North Yorkshire Moors National Park Authority

Richard is a graduate Human Ecologist and Rural Practice Chartered Surveyor. Having started working life in psychiatric nursing he took to protected area management in the mid eighties when he spent a year as shepherd and waller in the Peak District National Park.

After studying land management whilst working firstly with Lamport Hall Preservation Trust in Northamptonshire and then on the farms and country parks of Leicestershire County Council he returned to the Peak District National Park Authority to join their land agency team in 1990. In 1992 he joined the Broads Authority where he managed the Countryside Team and worked on many of their sustainable tourism and social inclusion initiatives.

In 2001, Richard moved to North Yorkshire and joined the North York Moors National Park Authority as Director of Recreation and Park Management managing recreation and access, rangers and field services and the volunteer services. He now also manages the Authority's Sustainable Development Fund and Community Renewable Energy Initiative and he chaired the UK National Parks Sustainable Development Working Group for its first three years.

John Watkins
Recreation Policy Section Head
Countryside Council for Wales

John Watkins is the Recreation Policy Section Head for the Countryside Council for Wales. He has worked on recreation in the Countryside Policy Directorate for over 5 years, including a two year secondment to the Adfywio tourism grant scheme.

Previously John worked for the Ramblers Association, Denbighshire County Council, and as an outdoor pursuits instructor. John is currently the Vice Chair for the Countryside Recreation Network.

**Chris Gordon
Recreation Specialist
Natural England**

Chris Gordon is the Recreation Specialist for Natural England's Social and Economic Evidence team. Chris originally trained in Geography and has an MSc Countryside Recreation Management. Throughout most of his career he has worked on projects linking the natural environment and peoples lives. He has worked for a diverse range of organisations including Groundwork in Salford and Trafford, Shropshire Wildlife Trust, The National Trust, Sheffield City Council, The Wildlife Trusts UK national office, The Countryside Agency and English Nature. Chris is also a long standing Green Flag Parks judge, and panel member for the Community Foundation Lincolnshire's Local Network Fund. He also enjoys running, Tai chi, is married with two children and enjoys the odd pint of Guinness!

**Georgina Combes
Senior Consultant
Futerra**

Georgina is a Senior Consultant at Futerra, a communications agency specialising in environmental and social change. With her current position in the "Engage" team she develops strategies and runs internal campaigns for clients ranging from FTSE100 companies to small charities, international government departments and environmental organizations. The engagement tools she works with include making short films, developing online games, facilitating workshops and running training on effective sustainability communications.

Georgina's varied career, with stints in both the corporate and charity sectors in the UK and Africa, help her find creative ways of communicating complex messages that engage employees in sustainability issues. New media - short films and vox pops – are some of her favourite channels.

APPENDIX C

"Preparing for Climate Change in the Outdoor Recreation Sector"

APPENDIX D

"Preparing for Climate Change in the Outdoor Recreation Sector"

APPENDIX E

"Preparing for Climate Change in the Outdoor Recreation Sector"

Workshop Session Notes

Flip Chart Transcriptions

Group 1. Facilitator - John Watkins, Countryside Council for Wales

Achieving a degree of consensus on both the scoping of impact and preparation of an action plan was an ambitious challenge to the workshop participants. The diversity of organisations in the group, and that recreation is only an emerging consideration in climate change terms, ensured that a wide range of issues were put forward for debate. What emerged from the grouping of these issues was that they could be considered either opportunity or threat to recreation depending on how well the sector anticipated, planned for, or responded to them.

Climate change arguably introduces the recreation practitioner into a new field of science, new technologies, new priorities, and new pressures to reframe what we do.

The following key points emerged from the discussion:

We need a strong social science evidence base about recreation users, their preferences, and expectations. Predicted cultural changes from migrating populations (be that climate related, economic, or other reasons) will challenge the established norms of recreation management. It will challenge what little we already know about recreation demand, preferences, supply, and conflict.

We need to ensure that the supply of a diverse range of recreation opportunities is properly accommodated into future planned changes for land-use. It is likely that responding to climate change issues will lead to new land values, which will encourage the use of land for some purposes, whilst restricting others. The importance of securing recreation spaces needs to be incorporated into all aspects of land use planning.

We need flexible and responsive means of providing for recreation opportunities. Examples of paths being lost to coastal erosion, as well as the carbon footprint of travelling long distances to seek out a recreation experience were amongst those cited to justify a need for a more dynamic approach to supply.

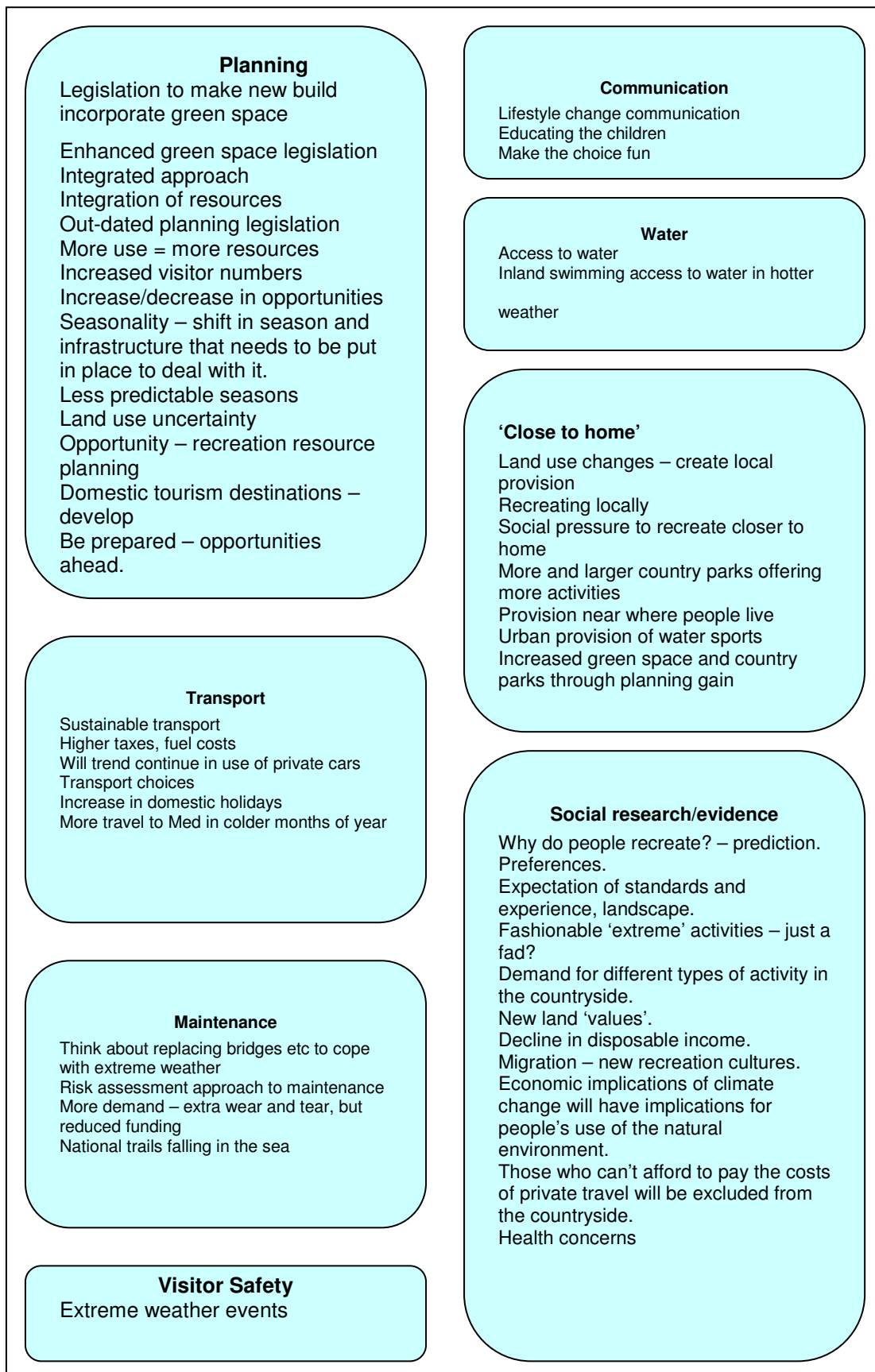
We need to adopt a light touch approach to the infrastructure that supports recreation opportunities, both to reduce future maintenance costs and to avoid the inertia to change in provision that comes with large-scale investment in a particular activity or facility.

The recreation sector must be able to change, learn, and seize opportunities if it is to benefit from climate change policies and responses. An evidence base combined with

responsive provision. Then, even if the sector might not always be able to plan and predict for change, it will be able to react.

Will recreation in terms of its governance, management and provision be responsive and smart enough to predict, react, respond, or take advantage of the changes ahead?

Figure 1: Clustered Issues



"Preparing for Climate Change in the Outdoor Recreation Sector"

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