The Games We Play
The practical, political and psychological legacies of sport

“The legacy lays in those intangible qualities such as the stories that people have to tell now because of the Games.”

Cathy Freeman, Olympic athlete and torch bearer, speaking about the 2000 Sydney Olympics
In his classic book on *Sports Geography*, John Bale suggested that this subject is concerned with the exploration of where sports activities take place, the changing characteristics of the sports landscape, and the making of spatial and environmental change in the sports environment. Since then, geographical interest in sport has grown substantially, and the scope of geography of sport has widened.

As international sport draws our attention this summer – including the European Football Championships, the Wimbledon Tennis Championships, and London 2012 Olympics and Paralympics – in this issue we ask questions which portray the reach of geographical inquiry, and which may or may not be addressed in the substantial global media interest these events generate.

Do sports help define a nation or does a nation define its sport? How much does geography shape the sports we’re good at? Is investment in sport a route out of poverty and a way to improving the health of communities?

Many nations are moving away from traditionally and culturally embedded sports towards those with the highest visibility. But whilst we might wish we were better at football and rugby, what are the sports in which we are actually considered world leaders? According to one international website, there are eight sports in which the UK is number one in the world, and they might not be the ones that immediately come to mind – equestrian, road cycling, snooker, sailing, rowing, netball, triathlon and squash.

Is there some physiological or cultural or socio-economic reason that drives this? Or are they predictable responses to our environment – our hills, rivers, roads, coasts, and of course our weather (even if it is just to avoid it)?

And what is the effect of major sporting events, as an example or as a vehicle for addressing wider concerns? Do events encourage volunteering and involvement, encouraging communities to make use of the venues and infrastructure of such events?

The Barcelona Olympics in 1992 have often been billed as the first to attempt to address social deprivation through hosting the Games, aiming to leave a legacy for future generations. Legacies of course can potentially come in many forms, from infrastructure to improved health to participation, and they can reportedly impact upon wider perception, behaviour and the economy. But how much difference can they really make? And how can we learn from London 2012, and from previous examples, in order to maximise the benefits of the Commonwealth Games in 2014 to Glasgow and beyond?

As we admire the sporting prowess of athletes in different sports this summer, it is worth reflecting on just how many geographical topics (and questions) are raised by such events.

Dr Robert Rogerson & Mike Robinson

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The views expressed in this newsletter are not necessarily those of the RSGS.
Cover image: Cyclist Kevin Stewart carried the Olympic Torch in Perth. © Mike Robinson.
Masthead image: Scottish Women’s rugby team in action. © SWRU.

Volunteers Wanted
Due to interest from a range of groups, we are seeking volunteers who would be happy to give talks in their local area about the RSGS and its work, to local Rotary, Probus and other groups. RSGS will provide a prepared PowerPoint presentation with a suggested script and any necessary training. Please contact Fiona Parker at RSGS HQ if you would like to help.

Rune Gjeldnes FRSGS, Mungo Park Medallist

Rune Gjeldnes was presented with the RSGS’s Mungo Park Medal at an event in June.

Rune received the Medal in recognition of his record-breaking achievements. He is the only person to ski across both Poles and Greenland without re-supplies. Until recently, he also held the records of the longest ski journey without being re-supplied, and the longest ski journey generally.

Present at the awards ceremony were Rune’s former Commanding Officer of the Norwegian Special Operations Command, Captain Jan Berglund, and Former Chief of the Navy Staff Royal Norwegian Navy, Commander Jacob Barresen. Also in attendance were representatives from Norwegian Consulates in Scotland, Perth & Kinross Council, RSGS Patron members, and geography teachers, head teachers and pupils from local schools.

Rune Gjeldnes with Captain Jan Berglund.
NEWS People • Places • Planet

Spring Clean 2012
Thank you to all those members and supporters who contributed to our Spring Clean 2012 Appeal, raising money towards the restoration and conservation of items in the RSGS collection; your generosity has resulted in donations of more than £12,000, for which we are very grateful.

We have purchased some filing cabinets and Mylar folders for safe storage of slides and papers, and we are now arranging for a specialist in London to look at the Burn-Murdoch globe, to assess the restoration work that is possible. Once we have a firm estimate of that cost, we will know how much we have available to spend on other collection-related work.

Thank you for your help.

John Pilkington FRSGS
In April, we were delighted to award the RSGS’s Honorary Fellowship to John Pilkington. John is a well-seasoned traveller and storyteller, and is one of the RSGS’s most popular speakers, with a wealth of travel experiences and good humour to draw on. We are pleased to welcome John back for the 2012-13 Inspiring People talks season; he will be speaking to RSGS audiences in Aberdeen, Dundee, Dunfermline and Edinburgh in January 2013.

Professor Alexander Fenton CBE
In May, Scotland lost one of her most eminent and internationally known ethnologists, with a very wide range of other cultural interests. Sandy Fenton was an amazing scholar, a polymath with huge and wide interests in the culture of Scotland. Among other things, he had been Director of the National Museum of Antiquities, Edinburgh, in 1978, and then Research Director of the National Museum of Scotland in 1985. He became Director of the European Ethnological Centre (which he founded) in 1989, and then brought it under the wing of the University of Edinburgh. He was appointed to the University of Edinburgh’s first Chair of Scottish Ethnology, and served as Director of the University’s School of Scottish Studies from 1990 to 1994. He also wrote widely, and made an enormous contribution to Scottish culture. He was awarded the Fellowship of RSGS in 1991.

John Muir Way
A new long-distance route for walkers is being planned for central Scotland. The John Muir Way, named after the 19th century naturalist, will run from Dunbar in East Lothian, through central Scotland to Loch Lomond and Helensburgh. Walkers will also be able to branch off from the proposed trail to other walks, such as the West Highland Way. The new path will be an extension of the existing John Muir Way in East Lothian.

Pen Hadow’s New Arctic Challenge
British explorer and RSGS Vice-President Pen Hadow plans to take polar exploration to a new level, by undertaking a unique scientific survey of Arctic sea ice while making the first unsupported and unassisted solo crossing of the Arctic Ocean from Russia to Canada via the North Pole.

In February 2013, Pen will begin the 1,000 mile coast-to-coast traverse, on foot with no re-supplies or machines, dogs or kites. He will face some of the most extreme weather conditions on Earth, while enduring repeated long distance swims between the ice floes. “It’s all about combining the spirits of adventure and science to get the important message out that the Arctic Ocean environment is rapidly changing, and the impacts will be coming to many of us, sooner rather than later.” he commented.

The expedition is the definitive example of modern scientific exploration, where environmental data of special scientific value can only be accessed by dedicated explorers collaborating closely with scientists, to enable advances in scientific and public understanding of the natural world. During the 100 days of the trek, Pen will make up to 50,000 observations of the sea ice, to enable an updated assessment of the total volume of sea ice in the Arctic Ocean, which can inform models forecasting the timeframe for the sea ice cover’s complete seasonal disappearance.

The World in Books
The RSGS held an authors’ evening in the Fair Maid’s House on Monday 23rd April to Celebrate World Book Night. Writers Gavin Francis, Linda Cracknell and Jamie Grant collectively transported their audience to Antarctica, land of the emperor penguin, to the mountains of Switzerland and Norway, and to the Bolivian Altiplano, on personal journeys with myths, memories and geography at their heart.

Gavin Francis is the author of True North – Travels in Arctic Europe, and talked about his forthcoming book, Empire Antarctica – Ice, Silence & Emperor Penguins; Linda Cracknell gave a reading from her recent walking pocket-book, Following our Fathers: Two Journeys Among Mountains (in Norway and Switzerland); and travel writer Jamie Grant read from The Bolivian Diaries – Travels in the Altiplano, featuring his trials after his father.

Euro 2012 Collection
To coincide with the 14th UEFA European Football Championships (Euro 2012), Routledge (publishers of the Scottish Geographical Journal) have collected over 100 leading academic articles focusing on key themes surrounding football and mega events in general, covering issues from biomechanics to gender studies, geography to politics, and sport to tourism. See www.tandf.co.uk/journals/offers/euro-2012 for information.
Arctic Ocean Plant Life

NASA's oceanographic expedition ICESCAPE has found Arctic Ocean waters richer in phytoplankton than any other ocean region on Earth. The finding reveals a new consequence of the Arctic's warming climate, and provides an important clue to understanding the impacts of a changing climate and environment on the Arctic Ocean and its ecology. “Part of NASA’s mission is pioneering scientific discovery, and this is like finding the Amazon rainforest in the middle of the Mojave Desert,” said Paula Bontempi, ocean biology and biogeochemistry programme manager for NASA.

The phytoplankton (the microscopic marine plants essential to all sea life) were extremely active, doubling in number more than once a day. Fast-growing phytoplankton consume large amounts of CO₂. The study concludes that scientists will have to reassess the amount of CO₂ entering the Arctic Ocean through biological activity if the under-ice blooms turn out to be common. Previously, researchers thought the Arctic Ocean sea ice blocked most sunlight needed for phytoplankton growth. But in recent decades, as younger thinner ice has replaced older thicker ice, shallow ‘melt ponds’ have become more extensive, acting as ‘windows’ and letting in large amounts of sunlight.

“The discovery certainly indicates we need to revise our understanding of the ecology of the Arctic and the region’s role in the Earth system,” Bontempi said.

See www.nasa.gov/topics/earth/features/ocean-bloom.html for more information.

Car running on air

With fuel prices soaring, Tata Motors is set to launch MiniCAT, a car that runs on compressed air, developed by Formula One engineer Guy Nigre in Luxembourg for MDI. Unlike traditional petrol and diesel engines, the MDI technology doesn’t use any form of internal combustion. Instead, it involves four steps:

1. air stored at around 300 bar is used to push the pistons (each requiring only 30 bar of pressure);
2. heating expands the air to a factor of three to five times which is then injected on to the smaller piston, achieving a pressure which is twice as effective as a traditional internal combustion engine;
3. the MDI active chamber, consisting of two pistons per modular engine head, then doubles the energy efficiency;
4. ‘cool combustion’ – the sudden cooling of air means that low-grade heat generation can be stored and used to recharge the compressed air storage.

Reports suggest that Tata will launch MiniCAT in India at the end of 2012, with an estimated price tag of Rs 6-700,000 (c£7-8,000). The car apparently has a travelling distance of 300km per tank, with a maximum speed of 105km/hr, and each refill of compressed air will cost Rs 100 (c£1.16) – cheap driving with zero emissions.

Growing rubbish mountain haunts Beijing

The Beijing suburb of Tongzhou has had to learn how to live with rubbish. In one neighbourhood that was once surrounded by fields, a huge landfill site covered by tarpaulins rises like a green mountain amid apartment buildings and factories. “All the trash from Beijing comes here every day,” explains a middle-aged shopkeeper whose store is near the site.

While China produces far less rubbish per capita than countries such as the US, its total production, at more than 300m tonnes annually, according to studies, is the largest in the world – and growing. While most of the waste is placed in landfill, policy makers are shifting toward incineration as volumes increase, despite some protests from residents and environmental groups.

Big cities are favouring incineration as a way to deal with the rubbish, and China is expected to build about 90 plants during the next three years that will generate energy by burning waste. Beijing, which burned just 10% of its waste in 2010 and plans to raise that to 40% by 2015, is building Asia’s largest incinerator.

Academics warn that the best long-term solution is reducing the amount of waste that cities produce. “To deal with the municipal waste issue, you have to think of trash reduction, recycling and management; everything from start to finish,” says Nie Yongfeng, a retired professor and waste expert at Tsinghua University. “You can’t solve the problem by focusing only on trash disposal.”
Climate Justice Fund

In June, Mary Robinson, former President of Ireland and former UN High Commissioner for Human Rights, joined First Minister Alex Salmond to launch Scotland’s Climate Justice Fund, and called for other countries to share Scotland’s ambition on climate change, by both reducing their carbon emissions and implementing climate justice.

The Scottish Government is providing £1 million per year for the next three years, above and beyond existing aid budgets, to support water projects in Malawi, Rwanda, Tanzania and Zambi, increasing communities’ resilience to the impacts of climate change. The Fund is backed by the Stop Climate Chaos Scotland coalition, the 2020 Climate Group, and the Network of International Development Organisations of Scotland, and has attracted cross-party support from the Scottish Parliament.

Mary Robinson, who champions climate justice through her own foundation, welcomed the announcement, saying, “Creating a new narrative based on climate justice, which amplifies the voices of the vulnerable, can inject the necessary urgency and ambition into the international negotiations to reach a new legally binding agreement by 2015. Scotland’s Climate Justice Fund acknowledges that those who contributed least to the causes of climate change are bearing the brunt of its impacts.”

Geodiversity Charter gets off the ground...

In June, Stewart Stevenson MSP, Minister for Environment, launched Scotland’s Geodiversity Charter, drawn up by the Scottish Geodiversity Forum which formed after the highly successful RSGS, BGS and SNH backed Conference on Geodiversity in Edinburgh in 2010, and signed by more than 25 organisations.

Mr Stevenson said, “Geological diversity is often taken for granted but it is key to our environment and our quality of life – the importance of its sustainable management should not be underestimated. I welcome Scotland’s Geodiversity Charter which not only encourages understanding and appreciation of our geodiversity but also promotes awareness and more integrated management of something so fundamental to all our lives.”

Angus Miller, chair and driving force of the Scottish Geodiversity Forum, said, “Our geodiversity impacts on everyone in Scotland, and has a key role to play in how we respond to future challenges.” Mike Browne, chair of GeoConservationUK, said, “Our association welcomes what we believe to be the world’s first ever Geodiversity Charter, and hopes that other nations in the British Isles, Europe and elsewhere will be inspired to build on this example of good practice.”

New Great Glen Canoe Trail - A Scottish First

Scotland’s first formal canoe trail has been launched. The 60 mile Great Glen Canoe Trail follows the 200-year-old Caledonian Canal from Corpach, near Fort William, to Inverness. The route takes in the canal and four lochs, including Loch Ness. Paddlers can also switch to white-water river sections. An estimated 2,500 canoeists already use the canal each year, according to British Waterways Scotland.

Inspiring People 2012-13

The next season of Inspiring People talks is beginning to shape up, with more fascinating speakers eager to share their experiences with RSGS audiences.

Extreme sportsman Tim Emmett will share his extreme quest to seek out adventure and push the envelope of psychological and physical performance. Mike Parker, author of Map Addict: A Tale of Obsession, Fudge & the Ordnance Survey and presenter of BBC Radio 4’s On the Map, will speak on Mapping and National Identity, a topic extremely relevant to Scotland as the independence referendum looms. Explorer Julian Monroe Fisher will join us in the midst of his project, The Great African Expedition, retracing the expeditionary routes of famed Victorian explorers and performing a comparative ethnographic study. Ocean rower Roz Savage became the first woman ever to row across three oceans last year when she rowed solo across the Indian Ocean from Australia to Mauritius, having previously crossed both the Pacific and the Atlantic, and she will tell tales of her life on the seas.

RSGS members can still attend any of the Inspiring People talks for free, so please renew your membership now if it has expired. Or consider giving RSGS membership as a gift to a friend or family member – it makes an excellent retirement or anniversary present!

Martha’s Meals

A school kitchen is to be built in Malawi and named ‘Friends of Never Seconds’, thanks to school dinners blogger Martha Payne. Nine-year old Martha’s ‘NeverSeconds’ blog started in April 2012 as a writing project with her dad. She published photographs of her Lochgilphead Primary School lunches, giving each meal a ‘food-o-meter’ and health rating, and counting the number of mouthfuls it took her to eat it.

Martha became an internet sensation after Argyll & Bute Council banned her from posting photos of her school meals. The ban was later overturned after a storm of protest, resulting in a flurry of interest from around the world, with the blog recording more than six million page views and raising more than £100,000 for the charity Mary’s Meals.

4/90 - could do a lot better!

Only four of the 90 most important internationally agreed environmental goals have seen “significant progress”, the United Nations Environment Programme warned in early June. Its fifth Global Environment Outlook (www.unep.org/geo) is the UN’s main status report on the health of the world’s ecosystems, and was released two weeks ahead of the Rio+20 UN Conference on Sustainable Development in Brazil (www.earthsummit2012.org). Only in the areas of stopping ozone-layer depletion, removing lead in fuel, improving access to water and marine pollution research has there been any major advance in line with promised objectives, the report says.
Egg throwing bid for official sport status rejected

Sport England has rejected the initial bid by organisers of a Lincolnshire egg-throwing contest who want it recognised as an official sport, because it failed to fully meet their criteria, including having an official constitution.

The World Egg Federation said it was disappointed but would bid again. A spokesman said he had hoped to have egg-throwing included as a demonstration sport in the 2012 Olympics. Federation president Andy Dunlop said, “I believe four of the egg throwing disciplines do meet the requirements: the two person throw-and-catch, static relay, target throwing and egg trebuchet. But we might look at the Russian egg roulette again – even though it takes great skill to smash the egg onto the forehead.”

Missing water in sea level rise found

Climate change, with its associated melting ice caps and shrinking glaciers, is the usual suspect when it comes to explaining rising sea levels. But a recent study shows that human water use has a major impact on sea level change that has been overlooked.

During the latter half of the 20th century, global sea level rose by about 1.8mm per year, according to data from tide gauges. The combined contribution from heating of the oceans, which makes the water expand, along with melting of ice caps and glaciers, is estimated to be 1.1mm per year, which leaves some 0.7mm per year unaccounted for. This gap has been considered an important missing piece of the puzzle in estimates for past and current sea level changes and for projections of future rises.

It now seems that the effects of human water use on land could fill that gap. Researchers reported in *Nature Geoscience* that land-based nature water storage could account for 0.77mm per year, or 42%, of the observed sea level rise between 1961 and 2003. Of that amount, for projections of future rises.

What a Relief

One of the most direct ‘legacies’ for sports involvement seems to be growing in success. BBC Sport Relief 2012 inspired more than a million people to run a mile, and more than 25,000 to make the ‘big splash’. This participation was in part inspired by the high-profile efforts of three celebrities – David Walliams swimming the Thames, Helen Skelton battling her way to the South Pole, and John Bishop cycling, rowing and running from Paris to London.

Sport Relief 2012 also raised over £62 million for humanitarian and other work.

National Parks

Duncan Bryden, Board Member of Cairngorms National Park Authority, was keen to clarify that approximately 25km of the Beauly-Denny line is currently being constructed in the Cairngorms National Park, and that Loch Lomond & The Trossachs National Park operates with full planning powers while the Cairngorms National Park is not a full planning authority but operates call-in powers for applications deemed to be of general significance to the aims of the park.

Geography’s Baccalaureate Successes!

Erica Caldwell, Convener, RSGB Education Committee

It seemed that all the hard lobbying done by RSGB with SAGT and university geography departments a few years ago had been for naught, but we are delighted to see that geography has now appeared in the new version of the Science Baccalaureate as a ‘broadening course’. It also has a place in the Social Sciences Baccalaureate as a ‘core course’, proving what we all know... geography is such a versatile and useful subject!

It is interesting to note, however, that Geology is a ‘core course’ for the Science Baccalaureate, and yet SQA has decided to abolish it in the new Curriculum for Excellence Highers and Advanced Highers.

RSGS Local Groups

The RSGS has 13 local groups or ‘centres’ across Scotland. Local group committees of volunteers help to represent the RSGS in their area, by running the Inspiring People talks, and helping with local publicity, promotion and fundraising activities. Some of the groups also arrange extra events, such as additional talks or guided walks.

To get involved, or to find out more about the RSGS in your area, please contact these local group contacts:

Aberdeen: Mr Iain Rankin (iain_rankin@btinternet.com, 01346 561283)
Ayr: Mr Jim Stewart (jasrstewart@aol.com, 01292 283422)
Borders: Mr David Langworth (david@maps.myzen.co.uk, 01896 822102)
Dundee: Mr Colin Mitchell (c.mitchell90@btinternet.com, 01387 820455)
Dundee: Dr John Rowan (j.s.rowan@dundee.ac.uk, 01382 384024)
Dunfermline: Mr Scott Carswell (enquiries@rsgs.org, 01383 872343)
Edinburgh: Miss Margaret Wilkes (margaret.wilkes@rsgs.org, 0131 447 1486) or Professor Alison McCleery (am.mccleery@napier.ac.uk, 0131 455 5004)
Glasgow: Mr Don Cameron (enquiries@rsgs.org, 0141 884 7451)
Helensburgh: Dr David Forrest (david.forrest@glasgow.ac.uk, 0141 330 5401)
Inverness: Mr Robert Preece (rpreece@onetel.com, 01463 236916)
Kirkcaldy: Mrs Lesley Weaver (lesleyglass@hotmail.com, 07788 791199)
Perth: Mr Richard Davison (richard.brenda@btinternet.com, 07402 666656)
Stirling: Mr Peter Ireland (petermireland@aol.com, 01738 455050)

We are pleased to welcome Peter Ireland as the new Chair in Stirling, and to thank the previous Chair – Scott Baxter – for all his sterling work over many years on behalf of the RSGB. We are also pleased to welcome Alister Hendrie as the new Chair of the Local Groups Committee at national level, and consequently also as a new member of the RSGS Board.
Let’s Celebrate 365

Let’s Celebrate 365 is a unique photographic exhibition of global festivals and celebrations by the award-winning photojournalist Jeremy Hunter. It features more than 50 prints, highlighting an extraordinary archive of over 10,000 rare images taken in more than 60 countries, which Jeremy has amassed during a distinguished career spent at the forefront of geopolitical, cultural and religious world events.

The RSGS will present this exhibition in Perth this summer. The Let’s Celebrate 365 exhibition will be based in the Fair Maid’s House, but will also turn Perth’s city centre into a gallery. The images will be exhibited throughout the city, scattered between cafés, retailers, restaurants, pubs and other public buildings for an eight-week period, with visitors encouraged to visit them all.

Running from Thursday 12th July to Monday 3rd September 2012, the exhibition will close with an illustrated talk by Jeremy, explaining the fascinating, intriguing, horrifying and moving stories behind each of his wonderful pictures, at Perth Concert Hall at 7.30pm on Tuesday 4th September.

“Let’s Celebrate 365 is a photographic exploration of the DNA, beliefs and faiths of many of the world’s cultures and communities and provides an insight into the need for us to respect the differences in these cultures,” said Jeremy. “After 35 years of extraordinary, uplifting experiences, this is a snapshot of a world of truly disparate cultures. Perhaps it will help create a better understanding of the essential ‘glue’ that binds all societies together. And with the approach of London 2012, Let’s Celebrate ably reflects Baron de Coubertin’s Olympics vision of promoting ‘friendly understanding among nations for the good of humanity’. Gods or no gods, understanding cultural diversity surely enlarges us all.”

We are grateful to The Forteviot Charitable Trust, Perth Common Good Fund and Perth City Centre Management, whose financial support has helped to make this exhibition possible.

PUBLIC TALK WITH PHOTOGRAPHER JEREMY HUNTER ON 4TH SEPTEMBER IN PERTH
Contact 01738 621031 for tickets - £10 Adult, £6 RSGS Members, £4 U18s/Students
Sporting events, legacy and communities

Dr Robert Rogerson, University of Strathclyde, and Legacy Research Co-ordinator for the 2014 Commonwealth Games

Scotland will host the Commonwealth Games in 2014 for the third time; a mark of the esteem in which Scotland is viewed in world sport. Although sporting achievement and the performance of elite athletes will continue to be at the heart of the festival, the Glasgow 2014 Games will be very different to the first Games held in Scotland more than 40 years ago, leaving a different form of legacy.

The 1970 Games in Edinburgh left their mark on the city, on sport, and on the organisation of such mega-events. The ten sports were held mainly in Meadowbank Stadium and in the purpose-built Commonwealth Pool; the latter bearing testimony to the foresight of the designers, for it continues to serve not only as a venue for international sporting events but also as a local community resource. In terms of sporting technology, the 1970 event was one of the first to use photo-finish technology, a resource which is so essential nowadays when success is measured in fractions of seconds in some events. And the Edinburgh 1970 Games marked the first time that a unique Games trademark logo was marketed, the Games emblem being intertwined with a St Andrew’s cross and a thistle.

In the intervening decades, the nature and significance of multi-sporting and major international sporting events has changed considerably. In 1970, the emphasis was on success in the events, and on ensuring a warm welcome was received by athletes and spectators. More recently, events such as the Olympics, the FIFA World Cup, the Rugby World Cup, the Commonwealth Games and the Asian Games, to name but a few, have become much more than mere sporting endeavours. Barcelona in 1992 was the first city to recognise and capitalise on the wider significance of hosting such an event, using the Olympics to regenerate the city as it emerged from the dark years of the Franco regime. Sydney in 2000 utilised the ‘Millennium Olympics’ to help reposition it as a global city and showcase its cosmopolitan character, and the hosting of the 2010 FIFA World Cup by South Africa was used to boost its international image.

Sporting events have become a means of transforming – venues for sport, physical areas of cities, images and perceptions of places – and a commercial enterprise where the economic and social prizes are as important as sporting medals. Alongside such economic regeneration potential come risks, including the increasing politicisation of events. A number of countries declined to compete in the 1980 Moscow Olympics because of the Soviet invasion of Afghanistan. And the second time the Commonwealth Games returned to Scotland, in 1986, the Edinburgh Games were boycotted by 32 nations, in protest to the UK Government’s approach to sport in South Africa (that is, their not supporting the anti-Apartheid ban on sporting engagement), relegating the sporting achievements and casting a shadow of large financial losses despite the relatively limited investment in sporting infrastructure. Financial losses and underused venues have also become synonymous with some events. Increasing demands by international organising bodies such as the IOC and FIFA, keen to retain the commercial value of the ‘brand’ of their event, have placed ever-increasing specifications for host cities, resulting in venues having to be designed to meet needs which are seldom required for post-event use. In the aftermath, stadia lie empty, having to be re-designed and revamped, or in some cases demolished. Large areas of public space remain underused or vacant.

Generating legacy

With increasing costs of hosting such mega-events, unsurprisingly politicians as well as local organising committees have had to find other ways to justify the large public investment required. Greater emphasis has rightly been placed on planning for the post-event use of space and facilities, transforming them from ‘white elephants’ to meaningful legacies.

The London 2012 Olympics is one of the first mega-events to place legacy as a central part of its planning. As part of the bidding process, the London team viewed the sporting event as a catalyst for change and inspiration – in regenerating the Lea Valley and the creation of new communities, in encouraging young people into sport, and in increasing sport participation across the country. Through the Olympics, the intention is that after the event, new facilities, homes and inspired people will emerge, not just in East London but across the UK. However, such legacy will take time. The Olympic and Paralympic Village will be transformed into thousands of new homes, and new community facilities (including health centre, and educational campus) will be built after the event. Planning for this has only recently started. The transformation of the Olympic Park into a community park will result in the area being closed for at least 12 months, and the new homes will take longer.

Glasgow 2014’s vision

In contrast to previous major sporting events, Glasgow 2014 is helping to re-define the notion of legacy and legacy planning. Above all, those involved in Glasgow 2014 believe that legacy benefits for communities should start well before the Games arrive in Glasgow. Unlike London 2012, sporting venues are being designed as much for community use as for the Games themselves...”
the venues housing the 17 sports already exist and are in use.
In contrast to London, where new organisations have been created to oversee the planning of the Olympic Games (both before and afterwards), management of the legacy planning process remains within the orbit of the City Council and Scottish Government. This is ensuring that learning and partnerships are able to be transferred to other areas of working, and that planning is aligned with longer-term economic and social strategies. This is particularly relevant in the area of health and wellbeing, for both Glasgow City Council and the Scottish Government want the Commonwealth Games to help increase overall levels of physical activity and help reduce some of the health and lifestyle issues which have blighted communities.
Legacy does include physical regeneration – especially in the East End communities around Dalmarnock and Bridgeton – but there is much less emphasis on large scale regeneration and more emphasis on creating sustainable and longer-term change. Even the athletes’ village is being designed and built so that, within a few weeks of the event finishing, the houses can be refitted to be available for rent and sale.

And success will be....
Like all other major sporting events, Glasgow 2014 is an opportunity to get global coverage in the media, and to showcase Scottish and other national sporting talent. For those involved in shaping legacy the ambition is, however, much wider. For sportScotland and Glasgow Life (which delivers sport and culture in the city), legacy will be translating a successful sporting event with Scottish athletes triumphing, into sports clubs and organisations actively encouraging communities to engage with many sports, and citizens of Glasgow being more active in their local facilities.
For the business community in Glasgow and Scotland, the Games will help them to compete on the international stage and encourage citizens who struggle to enter the labour market to feel encouraged and supported. And for East End communities, legacy is about a real sense of being part of transformation – in housing, in employment, in wellbeing and having a future in a positive Glasgow.

Achieving legacy?
The research evidence from previous major sporting events suggests that past approaches to legacy planning fail to inspire many to change their lifestyles and engage with physical and sporting activity. Studies also point to the poor use of sporting facilities after the Games festival of sport ‘leaves town’. Those involved with Glasgow 2014 are working hard to ensure the latter criticism cannot be levelled at Scotland, but bringing about a step change in health and wellbeing will ultimately lie with the Citizens of Glasgow and Scotland. There will be many incentives to be more active and to change lifestyles, but will this be enough? The question is, if hosting Glasgow 2014 cannot instil change in underlying health and physical activity, what else can?

...past approaches to legacy planning fail to inspire many to change their lifestyles and engage with physical and sporting activity.”
Most of the literature on the economics of major sports events has concentrated on the economic impact generated from hosting such events. More recently, attention has focused on the legacy of such events, that is, what is left after the event has finished. Gratton and Preuss (2008) identified six major legacy effects of major events: infrastructure; knowledge, skill development and education; image; emotions; networks; and culture. Here, just two of them – infrastructure and image – are considered in relation to the Beijing 2008 Olympic Games.

Infrastructure
Infrastructure obviously means the sport infrastructure for competition and training, but also the general infrastructure of a city, such as airports, roads, telecommunications, hotels, housing (athletes, media and officials), entertainment facilities, parks, etc.

Beijing 2008 is often referred to as the most expensive Olympics ever staged, with the often-cited figure of $40 billion of infrastructure investment. In general, there are two areas of infrastructure cost often discussed with regard to the Olympics.

Firstly, there is the sport infrastructure cost. As this part of the cost is directly attributed to the Games and is largely funded by public money, both the total cost and the post-game use of the infrastructure are important as far as the event legacy is concerned. According to China’s National Audit Office’s report, total investment in the Beijing Olympic venues amounted to 19.49 billion RMB (€2.86 billion), covering 102 projects in Beijing and other co-host cities. The 102 projects consisted of 36 competition venues and 66 training sites. The two most iconic stadia, the Bird’s Nest and the Water Cube, rather than continuing as sports stadia were opened to the public as tourist attractions in October 2008.

By May 2009, 3.5 million had visited the Bird’s Nest Stadium, generating 210 million RMB in revenue, and 2.7 million had visited the Water Cube. At that time, these were the second and third most popular tourist attractions in Beijing, with the Great Wall being first.

Secondly, there is the cost of improving general infrastructure. This is by far the largest part of the infrastructure cost. The Beijing Olympics led to substantial upgrades in the infrastructure in general, and in transportation in particular. The newly-built airport terminal increased capacity by 24 million. Three new underground lines and one new express link from the airport to the city were built. The Beijing subway was extended from 42 kilometres to 200 kilometres.

Image
Mega sport events have tremendous symbolic significance and form, and contribute to the repositioning or solidifying of the image of a city, region and country.

There is little doubt that the Beijing Olympics had a huge beneficial effect on China’s image in the rest of the world. The opening ceremony shocked the world in its ambition and spectacle. Nothing like it had ever been seen before. The Bird’s Nest Stadium and the Water Cube also set new standards for international sporting venues and provided wonderful images that all the world saw.

According to the market research firm Nielsen, the Beijing Olympics attracted record numbers of TV viewers both at home and abroad. It is said that about 94% of the Chinese audience watched the Games, and in total it attracted about 4.7 billion TV viewers worldwide, surpassing the 3.9 billion who watched the 2004 Athens Games and the 3.6 billion of the 2000 Sydney Games.

It is difficult, if not impossible, to put a monetary figure on the value of such image change, but increasingly many countries and host cities see this as the main benefit of hosting such events.

Conclusions
The benefits of hosting major sports events go beyond economic impact and are quite wide-ranging. Whether the value of these benefits justifies the large investment required to host the Olympic Games is not clear. However, we have seen that most of the investment is on general infrastructure such as airports, rail and road transport infrastructure. Beijing needed a new airport, a new link from the city to the airport, and an expanded subway system. Hosting the Olympic Games simply brought this investment forward. The investment made by Barcelona in 1992 now supports a tourism market that has doubled since then, in part because the 1992 Games changed the image of Barcelona. Changes in infrastructure and image leave a long-run legacy that generates real economic returns.

Further Reading
Sport mega-events and their legacies
Professor Scarlett Cornelissen, Department of Political Science, Stellenbosch University, South Africa

Internationally, a wide-ranging discourse has developed on the need to optimise mega-events’ positive legacies while reducing their negative impacts, and on possible means of doing so. ‘Legacy’ has been variously defined in this discourse. The IOC, for instance, offers a very specific interpretation of the legacy of the Olympic Games by regarding it as the totality of sports infrastructure or facilities and public expansions that are left after a Games and handed over to host communities in the wake of the event. This definition assumes a positive association between the development of event infrastructure, its longer-term impacts and community development.

Numerous cases can be cited where the long-term legacies of a sport mega-event were positive. The 2000 Sydney Olympic Games is widely regarded as a successful event, with few negative ramifications for the host city. Germany’s 2006 FIFA World Cup is seen to have had long-lasting tourism and image benefits for the country. There are many examples, however, of infrastructure lying underutilised, not being regarded as part of the local cultural assets by communities, and continuing to be a fiscal burden. The 1976 Summer Olympic Games, for example, is notorious for the high level of public debt it generated for the city of Montreal, a debt that was only paid off three decades later. Similarly, the city of Athens invested vast volumes of resources to host the 2004 Summer Games. Although the city benefited from the improvement in public transport, many of the Olympic venues are today unused. In Japan, co-host of the 2002 FIFA World Cup, many of the stadiums built for the tournament were significantly downscaled or in some instances even dismantled.

Mega-events, then, can potentially leave a range of tangible and intangible and primary and secondary legacies. Primary legacies relate to the effects on a host that can be directly attributed to the event, such as competition venues, stadiums and event tourist lodgings, and other facilities to accommodate visitors during the event. Secondary legacies are the indirect and induced effects that arise as a result of wider infrastructural investments. Secondary legacies can include changes in transportation networks and nodes, alterations in the design of a city, broader infrastructure development (such as telecoms or upgrading ports of entry), environmental improvement, general beautification of an area, contributions to ‘urban culture’ (such as expansion of leisure, entertainment and recreational facilities), increases in tourist arrivals, and changes in local governance or political structures. The process of planning and delivering these events can also result in enhanced skills and capacity in the public and private sectors, and within local and voluntary communities. Each Olympic Games since the late 1970s at least has had an extensive volunteer programme and/or saw the launching of sports education and life skills projects to help create a broader social legacy.

Some comprehensive studies of Olympic impacts have shown that secondary legacies are influenced by the scale and duration of pre-event infrastructure investments: where the period of investment is longer, the period of impact is extended, up to 18 years. However, a prolonged period of impact could also have negative repercussions for a host city and the national economy – in the case of rapidly expanding economies, contributing to rising property prices in the long run.

Importantly, some sport mega-events have been associated with negative social and environmental legacies and have been criticised for redirecting public funds away from social programmes such as housing delivery or the expansion of health care infrastructure. They therefore always have opportunity costs. Most hosts invest heavily to stage such events, without due consideration of the longer-term ramifications.

And South Africa
A case in point is South Africa’s hosting of the FIFA finals in 2010.

Staging the World Cup required vast amounts of public investments and organisational preparation. Many commentators queried the wisdom of this, given the levels of inequality and kinds of social challenges that exist in the country. In the years before the tournament, political leaders emphasised that the event could have positive employment and growth impacts, and public anticipation was high. In official post-event assessments, the national government quickly claimed that the tournament was a success. Yet the picture is more complex.

In the short term, economic sectors such as construction benefited from lucrative tenders to upgrade or establish event-related and broader infrastructure. However, independent studies show that this does not seem to have led to widespread or permanent employment in that sector, nor does it appear that other economic sectors saw notable rises in employment or growth.

The event’s longer term impacts on urban and social development will only be visible in time, but it is questionable that the tournament significantly reshaped South Africa’s urban landscape or removed apartheid’s continued racial and spatial footprints in the cities.”

Team GB – Scots to look out for at the London Olympics and Paralympics
Name: Stephen and Peter McGuire (25, 27)
Sport: Boccia
From: Hamilton
Achievements: Brothers Stephen and Peter play in the Boccia Pairs competition; together they won Gold at the European Championships in 2009, and Silver at the World Championships in 2010.

Both images © World Wide Images Ltd
Oddities of the World’s Olympic and non-Olympic Sports
Jasper Winn

“Despite the many fascinating sports from around the world they could have chosen from, the Olympic Committee have decided to add rugby and golf to the roster of events for the 2016 Games in Rio.”

How the 26 sports due to be contested during the 30th Olympic Games, held in London this summer, were chosen is the result of a complex intermingling of past fashion, present politics, history, myth, culture and – to an extent – omission. Since the first modern Games, in 1896, only five sports have been included in every summer Olympics; athletics, fencing, swimming, gymnastics and – perhaps surprisingly – cycling. Of the events no longer in the Olympics, shooting live pigeons is unlikely to be reinstated, but it does seem a pity that the ‘swimming obstacle race’, rope climbing and tug-of-war events of the past are unlikely to be contested again.

Chariot and horse racing aside, the original Ancient Hellenic events were based on running, jumping, throwing and fighting. All were sports which require little kit other than basic clothing (or no clothing at all in the original Greek form), and the equivalent of a stick or a heavy rock to either throw or lift. They were the kind of physical tests that make up the core physical activities that are roughly the same worldwide, allowing many nations to merely adjust their national sports a little to enable them to fit the Euro-centric definitions of an Olympic game. Iranians have been paramount in weight-lifting because many start their careers exercising with the hugely heavy and outsize symbolic weaponry used in traditional zoor khane, ‘houses of strength’.

Though taking a natural ability to the Olympics doesn’t always work out. Until the advent of Ethiopians, Kenyans and Moroccans, long-distance running at the Games was rarely contested by peoples who actually ran as part of their culture, but the Tarahumara tribe of north-west Mexico were an early exception. In their arid mountainous territory they cover huge distances on foot at speed to travel between far-flung villages, and also run ceremonial ‘races’ that can last for two days and cover a hundred miles and more. Two Tarahumara were sent to represent Mexico in the 1928 Amsterdam Olympics. They came in at disappointing 32nd and 35th placings, but only because they assumed that the race would be far, far longer than a mere 26 miles. Indeed they kept on running beyond the winning post, still relaxed and full of energy, and had to be chased down to bring them to a stop.

Other nations have stuck to the purity of their own national or regional sports, and thus Olympic spectators are denied such events as Dutch, or more accurately Frisian, fierljeppen. Derived from the skills of farmers who vaulted across ditches using a pole, modern ‘far-jumping’ has evolved into a complex sport where a measured width of water is bounded by a high running-board on one bank and a sand landing area on the other. The pole, around 12 metres in height, is balanced upright in the middle of the water. A competitor sprints up and jumps off the launch board to fling him- or herself out to grab the pole. Even as it starts falling towards the far bank, the leaper shins even further up it to get more distance before finally vaulting off as it approaches the ground at the far end. Coordination, agility, strength and a good jump can give a ‘leap’ that approaches the current record of over 22 metres. But failure in just one part of the complex whole can lead to spectacular dunking from a height into muddy water.

The games of the Inuit, too, are likely to remain regional. Most of them are stylised combat, demanding huge resistance to pain yet played out in movements small enough to be contested inside a winter igloo. A favourite is the ‘mouth pull’, where two players sit shoulder to shoulder, each putting an arm round behind the other’s head and reaching around to hook a finger into their mouth. They then pull at each other’s cheek until one admits defeat. Another, similar, game involves a thin leather chord looped around the ears of two players facing each other, and then them pulling back against each other until one gives up or an ear becomes too bloodied and damaged to continue. The double-leg kick, though, is a real test of agility and high-jump power, involving a run and a leap and then a jack-knife movement to bring both feet up high enough to hit a suspended target – more than two metres up for elite athletes –
Oddities of the World’s Olympic and non-Olympic Sports

Jasper Winn

...before landing without falling over.

Perhaps the sport least likely to feature in future games, yet with arguably one of the most compelling pedigrees for inclusion, is Central Asia’s buzkashi. Memorably described as ‘rugby on horseback with a dead goat for a ball’, it’s a truly international game, that’s thrilling for spectators and has the complexity of rules to satisfy even the most demanding of side-line pundits.

At the 2004 International Championship of Kokboru (as the Kyrgyz call buzkashi) in Bishkek, teams represented Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China and the host nation. The respected Afghanistan team failed to make it. Talking to Bolotbek Sherniyazov, then Member of Parliament and a committed ambassador for kokboru, I learnt of the frustrations of trying to get a sport recognised by the Olympic Committee. Apparently a deputation had been sent to their HQ in Lausanne to make the case for at least allowing buzkashi as a demonstration sport. But explaining its role as the national sport of so many countries, and detailing the sports long history and formalised rules was to no avail.

Watching several days’ of kokboru matches from the grandstand gave me an appreciation of the complexity and skill of the game and a questioning of the IOC’s verdict. Kokboru games were started by throwing the goat carcass – 30-40 kilograms in weight – on the mid-line. Teams galloped towards it and then entered into a struggle to give one of their members room enough to be able to lean down from the saddle and pick up the goat and tuck it under their leg. From that point on, opposing riders could use almost any means to pull, drag or grab the ‘ball’ from the holder, whilst the latter’s team tried to protect him so he could gallop to the far end and drop the goat into a raised tub-like goal. The result was like a mix of rugby scrum, cavalry warfare and circus trick-riding.

Despite the many fascinating sports from around the world they could have chosen from, the Olympic Committee have decided to add rugby and golf to the roster of events for the 2016 Games in Rio. In many ways buzkashi – drawing on horsemanship, martial valour, agility and the strength needed to lift a weighty goat carcase from the ground with one arm – would be as much or more in the spirit of the original Hellenic Olympic Games as rugby.

Whilst if one just wanted an activity that would bring joy and amusement to spectators, then surely the heroic athleticism mixed with missed poles and tumblings into muddy water that defines fierljeppen, is far more compelling for inclusion than golf?
Are the 2014 Games *simply a distraction?*
Dr Gerry McCartney, Head of the Public Health Observatory Division, NHS Health Scotland

In 2007 the Scottish Government and Glasgow City Council submitted, and won, a bid to host the 2014 Commonwealth Games. The justification for bidding to host the Games was clear. It was about catalysing economic growth, inspiring healthier lifestyles amongst Scots (and Glaswegians in particular), and regenerating Glasgow’s East End. The difficulty with this logic, and with the spending of several hundred million pounds of public money, is that there was little or no evidence that such impacts had been realised in any other host cities in the last 30 years. Although there was a lack of good evaluations, the very absence of evidence for positive legacy benefits seems quite startling considering the noise made by the Games advocates. Where you would expect to find evidence of health benefits, there are only a couple of studies looking at physical activity rates (one which shows an increase for the ten years before the 1992 Olympics and for the two years after, the other which shows a decline after the Manchester 2002 Commonwealth Games), and some short-term benefits arising from traffic restrictions. Where economic studies have been conducted, they have largely been of poor quality and have failed to take account of the opportunity costs (that is, they have simply added up the money spent and multiplied it through the economy). Those which have taken account of the opportunity costs showed relative economic decline rather than growth, and it certainly doesn’t seem to have done much for the Greek economy following the 2004 Olympics. However, it isn’t all doom and gloom. There is some evidence from Norway that the winter Olympics may have enhanced civic pride. This is particularly relevant to Glasgow, since the community engagement exercise conducted around the health impact assessment of the 2014 event suggested that this was a priority outcome for the city’s citizens.

Certainly, Glasgow is not without its problems and its people feel like they are collectively blamed for them. Glasgow suffers from high deprivation and poverty rates, from the worst mortality rates in the UK, and from gaping gaps between its richest and poorest areas. Yet, faced with all these problems, why have politicians decided that a major sports event is a solution? Perhaps there is an analogy with the decision to have a baby as a solution to marital difficulties: rather than deal with a difficult problem, there is an attraction of an improbable solution and a problem deferred. Unfortunately, the evidence for both solutions is weak. For health, the theory is essentially that the athletes will provide inspiration which will change people’s lifestyles and engender a new health consciousness. For public health professionals, this is simply implausible and flies in the face of years of what we know works, and doesn’t work, to encourage healthier lifestyles. Sure, the folk who are already taking part in sport might switch to something new which they have witnessed as part of the event, but it isn’t a realistic proposition for the rest. For the economy, the theory is that the event will facilitate inward investment from multinational companies and create a space for international networking and export trade for Scottish business (and that the net impact of these factors will be greater than the costs of playing host). This suggests that the problem faced by Scottish business is that they haven’t had the chance to meet the right people, perhaps not the understanding of most economists.

At least the bid minimised the number of white elephants through the use of existing stadia (Hampden, Ibrox, Celtic Park and the Kelvin Hall) rather than building all facilities anew. However, opportunity costs remain: facilities for elite athletes rather than public use will be built (for example, two 50m swimming pools adjacent to one another whilst other community pools close); the time and energies of numerous public sector workers will have been diverted to the Games; and much money will have been spent. The priorities for Glasgow and Scotland should be improving health, reducing inequalities and becoming sustainable. The Games must not become a distraction from these important collective tasks.

**Further Reading**
McCartney et al: *How will the 2014 Commonwealth Games impact on Glasgow’s health, and how will we know?* (forthcoming)

Team GB – Scots to look out for at the London Olympics and Paralympics

**Name:** David Florence (29)
**Sport:** Canoe Slalom (C1 and C2 (doubles with Richard Hounslow))
**From:** Aberdeen/Edinburgh, now Nottingham

**Achievements:** David is an Olympic Silver Medallist from the Beijing Olympics. He won two Golds at the Canoe Slalom World Cup, the first athlete ever to have won in both the individual and double canoe competitions.
Hosting the Commonwealth Games in Glasgow 2014 is a once-in-a-lifetime opportunity for Scotland. From the early stages of bidding, there has been an emphasis on the positive and lasting benefits that could be achieved through the hosting of Glasgow 2014, both for Scotland as a whole and for Glasgow specifically. Glasgow 2014 brings with it a wealth of opportunities for everyone in Scotland, for our diverse communities and for our nation.

To create a lasting and positive legacy from Glasgow 2014 and other major events in Scotland is a top priority for the Scottish Government. We set out our ambitions in A Games Legacy for Scotland, launched on 1st September 2009. The legacy plan is set around four themes – ‘Active, Connected, Flourishing and Sustainable’ – and embedded within each are the five underpinning principles of enhancing partnerships, enabling diversity, ensuring equality, encouraging community engagement and embedding sustainability. The bespoke legacy website www.gameslegacy.scotland.org is a one-stop-shop for all activity across the four themes of our legacy plan. With over 46,000 hits by May, it has proven popular since its launch in October 2011.

Legacy is unlikely to happen by chance. We believe that hosting Glasgow 2014 will create an important legacy, but it is essential that this is well planned and delivered, and clearly linked to existing strategies and policies. Since winning the bid in November 2007, we have been working with many partners across Scotland to mobilise our collective effort and maximise the opportunities that Glasgow 2014 brings to create a lasting legacy.

Of course the infrastructure needed to host Glasgow 2014 will bring many significant benefits to the citizens of Scotland. The Glasgow skyline is already being transformed through the building of infrastructure for the Games, leaving a lasting physical, economic and social legacy. State-of-the-art sports facilities will be available for the local community to enjoy. Some will be open for business before the Games have even arrived, and more importantly these will be available at affordable prices. The venues should also enable Glasgow to secure further high profile national and international events in the future.

As a result of Glasgow 2014, road and rail connectivity will be improved through projects which have been or will be completed. This includes the M74 completion, the M80 upgrade, the refurbishment of Dalmarnock Station and the new ‘Clyde Gateway’ (formerly known as the East End regeneration route). All the Games-related transport projects are on course. When they are complete, they will leave a lasting legacy of reduced journey times, lower congestion levels and opportunities for improved public transport that will benefit not just Glasgow but the whole of the West of Scotland.

The effects of Scotland’s Games Legacy will not just be felt in Glasgow, but throughout the country. We hope to use Glasgow 2014 to inspire people the length and breadth of the country to become more physically active and/or participate in sport. Glasgow 2014 will allow us to build the capacity of Scottish businesses so that they can compete better at a local, national and international level, and create more jobs. To this end, the First Minister announced earlier in the year a £10 million sport and physical activity facilities fund. This complements the Government’s target to develop 150 Community Sports Hubs by 2016. At the same time, a £5 million fund was also announced, which will help young people back into employment (including giving up to 2,500 youngsters the opportunity to gain employment in Scotland’s major sporting and cultural events, including Glasgow 2014).

Furthermore, our country and our culture will be on the world stage, providing us with the perfect platform to showcase Scotland as a modern, vibrant and culturally rich nation. And our young people, who will remember Glasgow 2014 in years to come, have an opportunity to learn about Scotland’s place in the world as well as increasing their understanding of our and other countries’ cultures.

To help us assess how this legacy is progressing, we have recently begun an evaluation programme of analytical work which will run from 2012 to 2019. This includes tracking progress on some of our desired outcomes from a 2008 baseline to 2019 across the four themes (and at different spatial levels); a prospective longitudinal study with residents in the East End of Glasgow most directly affected by the Games investment; and the monitoring and evaluation of some of our key legacy programmes.

We believe this will contribute substantially to the (currently variable) evidence base on legacy, both for ourselves, and for future hosts of major events.

These are Scotland’s hopes and plans for a Games Legacy for Scotland. I encourage everyone across Scotland to get involved in this unique opportunity as well as enjoying what will be a world-class sporting event.

As a result of Glasgow 2014, road and rail connectivity will be improved through projects which have been or will be completed.”

Team GB – Scots to look out for at the London Olympics and Paralympics

Name: Sam Ingram (26)
Sport: Visually Impaired Judo
From: Edinburgh
Achievements: Sam won a Bronze medal at Beijing 2008. In 2011, he also won his first VI European title of his career, at the IBSA VI European Championships in Crawley, in the under-90kg category.
How does Team GBR fare in the world of sports?
Nicola Mira, Greatest Sporting Nation (www.greatestsportingnation.com)

The sporting year 2012 is dominated by the prospect of the London Olympic Games. It’s a huge event that will overshadow all others. Still, it’s only part of the sporting calendar, and to have a clear picture of how competitive Team GBR is on the world stage, many other events have to be taken into account. Greatestsportingnation.com (GSN) ranks all countries’ performance in over 80 sports, all year round. Adding up the points earned by the first eight places in over 1,000 tournaments throughout the year, GSN’s Global Cup is a unique tool to establish who’s best at sports.

Between 2008 and 2011, the answer has been clear: the USA has topped the ranking every year, just as Russia has been consistently second. The third place has gone twice to Germany and twice (2008 and 2011) to China. Great Britain is immediately behind the four ‘greats’, and, occasionally, behind France. The good news is that the string is improving: GBR was eighth in 2008, sixth in 2009, seventh in 2010 and fifth in 2011.

On a sport by sport basis, GBR is strong in some traditional sports, including rugby union, but it is sorely lacking in two important sporting areas: team ball sports (football, volleyball and basketball) and the major winter sports.

A glance at the sports ranking for GBR in 2011 (according to GSN points) shows rugby union as the main staple, followed by athletics, golf, swimming and sailing. Of the other team ball sports, football is sixth but basketball and volleyball are no-shows. In seventh to tenth place, we find road cycling, rowing, taekwondo and amateur boxing. No winter sport features in the top 20 for GBR, so it’s no surprise that in the 2012 season, GBR is only nineteenth overall in this group.

To find the lion rampant, with a special eye on Olympic performance, we have tracked British results at the 2008 Beijing Olympics and the Global Cup of 2011: the result is an indication of the best Olympic sports for Britain and, crucially, those in which we can expect excellence in London 2012.

British excellence lies in track cycling, sailing and rowing. In some sports, GBR was first in the Beijing GSN ranking and first (or third) in the relevant Global Cup 2011 ranking. It’s fair to expect a significant number of gold medals in these sports in London.

The sports in green are very good prospects, featuring excellent 2011 results: there’s more cycling to be done, plus amateur boxing, where GBR was strongly placed both in Beijing and in the 2011 Amateur Boxing World Championships.

As for the other sports listed, GBR can hope for a few medals, especially in swimming (ladies) and athletics (men), but no more than an honourable position overall.

Where are those team ball sports? Nowhere on the table, alas, and for good reasons. In the International Basketball Federation’s country rankings, GBR’s Men are currently 43rd (of 82), while the Ladies are 49th (of 73). In the International Volleyball Federation’s country rankings, British Men are 92nd, the Ladies 69th. It’s fair to say that only through being host do the British basketball and volleyball teams have any right to start in the London Olympic tournament.

Nor, it must be said, is GBR a force in any of the ‘minor’ team ball sports, handball, water polo, baseball, with the possible exception of hockey: in Beijing, the British hockey teams combined for a less than satisfactory sixth, but they were on the map at least.

The hope is that the bonus of hosting the Games will lift British performance in some of these team ball sports. This, together with a strong showing in our leading sports, could significantly improve GBR’s overall Olympic ranking, and maybe propel Great Britain into the top four of world sports.

“British excellence lies in track cycling, sailing and rowing.”
**Scotia I**

**Murray Robertson**

The image *Scotia I* was conceived at the request of Creative Scotland to celebrate and promote the launch of The Year of Creative Scotland, which began on Hogmanay and continues until the end of December 2012. The year puts Scotland’s originality in the global spotlight and features a programme of world-class events, festivals, culture and heritage.

Essentially a new iteration of the familiar geographical features of Scotland with a range of diverse cultural imagery, the artwork takes its inspiration from early printed maps of the 17th and 18th centuries, particularly those which include illustrated panels detailing local culture, flora, fauna and geological features of note.

The cartography itself was initially composed digitally by referencing details from 19th century maps of the geology and palaeontology of Scotland (in particular, John MacCulloch’s *Geological Map of Scotland*, 1837, and A K Johnston’s *Geological & Palaeontological Map Of The British Islands*, 1854), combined with a variety of contemporary satellite images, endeavouring to fuse elements from both ancient and modern perspectives.

Several factors influenced the images and text included in the map. Some elements were chosen out of respect for traditional cartographic imagery and mythology such as sea-monsters, mermaids and marine life. Others, such as a cup and ring marked stone from Kilmartin Glen and turbines from Whitlee Windfarm, were chosen to reflect a broad sense of history. The work also features quotations from celebrated Scots writers and poets such as Alasdair Gray, Liz Lochhead and Sorley MacLean.

Traditional and digital printing techniques were used in the production of the artwork at Glasgow Print Studio. The key areas of the image were printed using a large format inkjet printer with high pigment archival inks onto fine art paper. Separations were then made from the digital files and used to screenprint by hand individual colours onto the previously prepared digital print. Some additional hand colouring was also applied.

*Scotia I* is part of a series of works currently in production entitled *Mapping Scotia*, which features maps and related cultural and cartographic imagery. An exhibition of selected works from this project will be on show from 12th August to 11th September 2012 at Café Gandolﬁ, Glasgow.

Murray Robertson is an artist with an interest in traditional techniques and the application of new technologies in fine art. He exhibits widely in the UK and abroad, and is a Master Printer at Glasgow Print Studio. See [www.certainerrors.co.uk](http://www.certainerrors.co.uk) for more of Murray’s work.

*Scotia I*, a screenprint and archival digital pigment print (76 x 56cm) produced in a limited edition of 15 copies signed by the artist, is available to view or purchase at Glasgow Print Studio Gallery, Trongate 103, Glasgow ([www.gpsart.co.uk](http://www.gpsart.co.uk)). See [www.creativescotland.com/news/year-of-creative-scotland-2012](http://www.creativescotland.com/news/year-of-creative-scotland-2012) for information on The Year of Creative Scotland.
An Interview with Peter Nicol MBE
Fraser Shand, RGS Communications Officer

Widely considered to be one of the most outstanding international squash players of all time and arguably one of the finest athletes Scotland has ever produced, Peter Nicol spent five years ranked as the World Number One. From Inverurie in Aberdeenshire, he represented Scotland and England internationally. He’s a four time Commonwealth Games gold medallist – for the men’s singles in 1998 and 2004, and the men’s doubles (with Lee Beachill) in 2002 and 2006. He was awarded the MBE in June 1999.

Peter retired from international competition in 2006, and now helps to train the next generation of players through the Peter Nicol Squash Club in Aberdeen and squashskills.com.

Peter started playing squash competitively aged 11. Not only was it what he was “best at”, but living in Scotland it “made sense considering the winters, the lack of light, and the weather outside.” It was also fantastically popular in Inverurie: “In a 10,000 person town there were 1,000 members and 1,000 on the waiting list, so 20% of the population wanted to be part of a squash club.”

Squash is still a healthy sport, it’s just nowhere as big as when three and a half million were playing in the early eighties. Scotland had three of the world’s top ten. “At one point we were number one and four in the world, Martin (Heath) and I. I don’t know any sports that we have that much success in.”

Peter believes his father was the main driving force behind his success. “He worked at sports, he didn’t just play them. He understood how to improve tactically as an athlete, and the technical elements of the game intrigued him.”

Peter improved through constant competition, first setting his sights on beating his sister, then the older members of his club. “It’s a mixture of having good competition at that age, and also having people who are very kindly willing to give their time to help you.”

Peter’s success stemmed partly from his approach to playing: “It’s not about beating the person you’re playing against, it’s about being the best that you can be at that moment.”

It’s also about learning how to play tactically, something that some squash players don’t learn until they start to lose fitness. One of Peter’s major rivals was the Canadian Jonathon Power: “He was at his worst when he was a bit chubby and unfit because he’d play so well. As soon as he got fit he was actually quite easy to play… it was just a bit hard to beat him!”

The TV schedules in the UK are mostly focused on football, rugby union, tennis, cricket and athletics. Nicol believes this is because “we don’t focus on the sports we’re necessarily good at; we focus on the sports that we think we want to be good at.”

Peter points to Egypt as a country that got it right in terms of funding and profile for squash. The Egyptian people discovered an enthusiasm for the sport because of the man Peter describes as “David Beckham in Egypt”, Ahmed Barada. “He was a world junior champion, he had his portrait on a postage stamp, and he was best friends with Hosni Mubarak – which back in the day was a good thing!”

Barada became a poster boy for squash in Egypt, making it to World Number Two and causing a surge in interest in the sport amongst young Egyptians. Millions of Egyptians watched on television when Peter played against Barada in an open-air court beside the pyramids.

So, what’s the secret to building that same kind of support? “We have to build it up as a sport; we can’t throw the toys out of the pram and ask why no one’s helped us. We have to go to people and knock on their doors and tell them we are worth watching.”

At the vote to decide on a sport to be added to the London Olympics, squash won the vote, but was unable to get the percentage required to be ratified. Peter is keen to emphasise the positive message: “We need to be better, we need to have more coverage, we need to have more players, and we need to be more professional in everything we do.”

His player to watch? “Alan Clyne is doing exceptionally well as a young Scottish player, and he’ll be in the perfect environment for him to excel in at Glasgow in 2014 if he can just raise his game a bit.”

Team GB – Scots to look out for at the London Olympics and Paralympics

<table>
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<tr>
<th>Name: Mike Kerr (30)</th>
<th>Achievements: Mike is the only Scot on the ParalympicsGB Wheelchair Rugby Team; he plays for the North East Bulls, who finished in fourth place in the 2010 Nationals. <em>(or Murderball as it’s affectionately nicknamed)</em></th>
<th>Sport: Wheelchair Rugby*</th>
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<td>From: Glasgow</td>
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Girls’ participation – or lack thereof – in sport in the UK is a major topic of concern to UK governments, PE teachers and public health officials. Accordingly, when I was invited to write a short piece from my PhD research on ‘girls and sport’ for this edition of The Geographer, I was excited by an opportunity to highlight the importance of human geography to understanding girls’ experiences of sport and physical activity.

A number of sources have published that girls’ participation in sport and exercise declines, much more than boys, as they age. Some of these studies consider girls’ participation in all physical activity (including sport and exercise) outside of school (Scottish Health Survey, 2009), while others are concerned solely with girls’ participation in PE (Women Sport and Fitness Foundation, 2012). Cockburn and Clark (2002) have also demonstrated that, while many girls may appear to participate, many of them are unenthusiastic and not fully engaged, just ‘toeing-the line’. As a solution to the ‘problem’ of girls’ participation, sport and exercise providers including PE teachers are being urged to make sport more ‘attractive’ to girls by “introducing more female-friendly activities such as Zumba classes and rollerblading” (Hughes, 2012). Much of the research has failed to ask girls what they feel about the spaces – including the social and tangible aspects of such spaces – in which they do sport and exercise.

My research took an alternative approach, by getting muddy and sweaty on the playing fields with girls in PE classes and during one after-school ‘keep fit club’; it also involved traditional focus groups, revealing that attempts to improve the numbers of girls doing sport by providing Zumba, dance, and other ‘feminine’ activities may prove unsuccessful and serve to widen the gender gap in sports participation. One of the activities that girls discussed in detail was rugby, and how much they enjoyed it but did not often have a chance to play or were no longer allowed opportunities to play.

**Some girls like rugby!**

Contrary to much contemporary belief about girls and sporting preferences, many girls like and want to play ‘traditionally’ masculine sports such as football and rugby, but may not be given the opportunity either during PE or through community sport. Lauren (S3) said “Yeah we got to do rugby for one week… I would have quite liked to do rugby more often and they seem to think that only guys want to do it and I would find it quite fun; same with football…”

Some girls, who had the opportunity to enjoy rugby in single-sex classes, indicated that they liked it “because you can be feisty” (Red, S2). Brandi (S2) likes rugby because “you get to run about more” and Alison (S3) enjoys it because “it’s more physical, more challenging”. These three girls reveal that aggressive and physical aspects of rugby appeal to and are enjoyable to them, contradicting traditional beliefs about girls’ preferences for and stronger enjoyment of aesthetic and performance-based activities such as dance and gymnastics.

While many girls in my study indicated that they had previously played rugby, most of them had stopped playing after age 11 (the age at which they enter secondary school) because it was no longer provided to girls or because sexist behaviour on behalf of boys pushed them away. Katie (S4) had to give up playing rugby for her local club “because you’re not allowed to play with guys past 11 years old, and there was no girls’ rugby team”. Other girls have made the decision to quit as a result of sexist behaviour on behalf of male team mates. Sophie (S2) “used to play” rugby “with the boys when [she] was in P2, P3 and P4, but then they were all like really sexist so [she] quit.”

It is clear from a very small sample of my respondents’ reflections on playing, enjoying and not being availed the opportunity to play rugby, that assumptions about girls’ preferences for sport miss the mark. Any attempt to provide more opportunities for young people, girls and boys alike, to participate in and enjoy physical activity is laudable.

However, increased provisions of dance and Zumba for girls only, and football and rugby for boys only, allow little space for the development of alternative sporting identities for those girls who don’t like dance as well as for “some boys who absolutely hate football” (Ms Brown, PE teacher). Instead of thinking about provisioning for sport in terms of girl-only and girl-specific or girl-friendly activities, if we really want to tackle the problem of non-participation we have to get down on the ground and let girls speak about the sports they enjoy and the spaces which make these enjoyable experiences possible.

**Team GB – Scots to look out for at the London Olympics and Paralympics**

<table>
<thead>
<tr>
<th>Name: Hannah Miley</th>
<th>Achievements: Hannah is European and Commonwealth 400m Individual Medley champion and also the World Silver medallist.</th>
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<tbody>
<tr>
<td>Sport: Individual Medley Swimmer</td>
<td>From: Inverurie</td>
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**“I would have quite liked to do rugby more often and they seem to think that only guys want to do it…”**
Making the Most of Maps!

Over the past three months, we have hosted several educational visits, have worked with rural schools through an outreach programme called ‘Outdoor Journeys’, and have delivered a range of CPD sessions for teachers. Two groups of S3 pupils from Perth High School used the Fair Maid’s House as a base to investigate the Central Business District of Perth. During the morning visit, pupils made use of our extensive local map collection and particularly enjoyed linking this to some outdoor fieldwork. Feedback from pupils and teachers was overwhelmingly positive.

New Higher Course

Erica Caldwell, Convener, RSGS Education Committee

As expected, SQA published the new arrangements for National 4 and 5 in April (to replace the current Standard Grade and Intermediate courses). What we did not expect was to have the Higher course at the same time, since the consultation had only finished in March. The big question was whether comments and feedback from teachers and from groups like RSGS were taken into account.

There is widespread and very serious concern from geography teachers about this new Higher. The lack of content, the very short examination, and the general ‘dumbing down’ of the qualification without apparent consultation with universities is most worrying. Highers have been the ‘gold standard’ for university entrance...does this new Higher reach that standard? How will pupils be prepared for Advanced Higher Geography with lack of knowledge in some of the most popular AH study topics such as sand dune succession?

Part of the all-pervading rationale for Curriculum for Excellence is “All Courses provide opportunities for learners to develop breadth, challenge and application, but the focus and balance of the assessment will be appropriate for the subject area.” Questions remain over whether these current arrangements will prove appropriate for Higher Geography. If you have thoughts on the new courses, we would be pleased to hear them; just contact enquiries@rsgs.org to let us know.

RSGS Bartholomew Essay Competition

Jim Stewart, RSGS Ayr Group

The winning pupils with Anne Mahon of Collins Cartographic.

In March, at the final RSGS talk of the season in Glasgow, prizes were presented to the winners of the 2011 essay competition for schoolchildren. The standard of entries was impressively high, with more entries than usual submitted electronically, including some excellent PowerPoint presentations. Once again, we are grateful for the support of HarperCollins, who generously provided the prizes: atlases and maps for the pupils; atlases and electronic teaching resources for their schools. The prize-winners were Kirsty Watten and Greg Walker (both Bothwell Primary) for P6/7; Ilias Muckli (The Glasgow Academy) and Stuart Campbell (Queen Margaret Academy, Ayr) for S1/2; and Megan Lyons and Rachel Campbell (both Queen Margaret Academy, Ayr) for S3. Congratulations to all winners, and to the teachers and parents who encouraged them.

Details of the 2012 competition are available on the RSGS and SAGT websites, and from me at jasrstewart@aol.com.
University of Aberdeen
Living North Sea

In 2009, an Interreg IVB funded North Sea Region project with 15 European partners set about tackling the lack of knowledge, understanding, and awareness of fish migration around the North Sea, through the Living North Sea (LNS) project, which seeks to identify key issues concerning fish migration, barriers and the different solutions that can be used to re-connect the rivers and deltas around the North Sea Region. A key component of this work involves the development of a Web-GIS to disseminate and communicate project findings to policy-makers, local decision-makers, and the public. The web-based spatial information is an ongoing element of the project, which will provide a resource for fish migration data from sea to source, and the basis for a Fish Migration Atlas as part of the ICAN project. See www.livingnorthsea.eu for more information.

Honorary Professor
Professor Mike Worboys has been appointed an Honorary Professor by Edinburgh’s School of GeoSciences. A mathematician by background, Mike Worboys is one of the leading spatial scientists in the world. He works in the prestigious National Center for Geographic Information and Analysis in the USA, and is Head of the School of Computing and Information Science at the University of Maine.

Scottish snow
Michael Spencer, of the Global Change Group at the University of Edinburgh School of GeoSciences, is undertaking research into mountain snow cover in Scotland. He is working with the Snow Survey of Great Britain records held by the Met Office, and using them to build a picture of Scottish snowline over the past 60 years. See scottishsnow.wordpress.com for more information.

University of Glasgow
The Invisible College: re-inhabiting ruins
St Peter’s College, near Cardross on the Clyde estuary, is widely regarded as Scotland’s finest example of modernist architecture. Abandoned since the 1980s, the forces of weather, fire and vandalism have turned it into a spectacular ruin, much photographed by architectural pilgrims and urban explorers.

Geographers from the University of Glasgow have recently begun ‘The Invisible College’, an AHRC-funded project to explore, document, re-work and re-inhabit this site and its wider landscape. Workshops at the site will bring together local residents and invited architects, artists and academics; an audio walk will also be produced. These activities will contribute to plans being developed by Glasgow-based public artists NVA for the renewal of the seminary and the surrounding woodlands.

Contact Hayden.Lorimer@glasgow.ac.uk for more information.

University of St Andrews
The Big Society, Localism & Housing Policy
A series of seminars will explore the impact of the coalition government’s localism agenda on housing policy across the UK. Localism aims to shift decision-making downwards and empower local people to solve their own problems. However, in an era of restrained public spending, questions can be raised as to whether this may widen existing housing inequalities.

Interdisciplinary workshops will bring together perspectives from academia, policy and practice, drawing on expertise from the University of St Andrews Centre for Housing Research (Dr Kim McKee and Professor Duncan Maclennan), Queens University Belfast (Dr Jenny Muir), the University of Sheffield (Professor John Flint and Dr Ed Ferrari), and the University of Cardiff (Professor David Clapham). The series will open in Sheffield in spring 2013.

Universities of Edinburgh and Heriot-Watt and BGS
Scottish Carbon Capture & Storage
Researchers at Scottish Carbon Capture & Storage (a partnership of the British Geological Survey, the University of Edinburgh and Heriot-Watt University) have published their research into perceptions of climate change and low carbon energy technologies. Ninety-nine members of the Edinburgh public took part in a workshop in September 2011.

Results give valuable insight into how the Scottish public perceive these issues and reveal a strong desire amongst the public to be engaged. Participants showed strong support for renewables in Scotland and pride at the country’s achievements, but were concerned about the affect that low carbon energy might have on their already rising fuel bills.
RSGS Expedition Grants

Since its inception, the RSGS and its members have awarded more than 300 grants towards research and expedition projects. We have part-funded hundreds of students and explorers in their research, both at home and abroad, from the 1885-86 expedition to New Guinea led by ornithologist and botanist Mr H O Forbes, and the 1902-04 Scottish National Antarctic Expedition on the Scotia led by explorer William Speirs Bruce, through 20th century geomorphological and geological studies in Greenland, and analysis of land use and soil-plant relationships in Central America with particular regard to sugar and citrus production, to 21st century research into community renewable energy projects in the UK, and orang-utan response to habitat loss in Borneo.

In 2011, the RSGS established a special Grants Fund, to support the costs of awarding RSGS grants and allow us to fund more geographical research work and expeditions. We welcome donations, legacies and grants from individuals and organisations towards this fund at any time.

Three expedition grants have been awarded for 2012, all to students at the University of Glasgow:

- Environmental Issues and Development Challenges in Tanzania and Pwani Regions.
- To create a biogeographical map of The Reserva Barba Azul in Bolivia which plots distribution of biodiversity in relation to key geographical features.
- To carry out biodiversity inventories for birds, mammals, amphibians and butterflies to assess the effects of varying degrees of deforestation on biodiversity in the Manu Biosphere Reserve, Peru.

Making Connections

An insight into the life of a working geographer

After reading geography at Edinburgh University in the 80s, the actions of multinational corporations, the changing demography of the developing world, environmental degradation, globalisation, the Soviet Union and other geographical concepts felt very abstract, when I started my marketing adventure at Procter & Gamble.

A world of marketing and communications

Twenty-five years later, I now work with these ideas in reality every day, as they drive business thinking. Having worked for multinationals (American, Swiss and Swedish), geography is at the heart of my business training – the nature of ‘flat’ developed markets, the rush for diminishing natural resources, and the expanding developing markets driven by an emerging middle class and rising disposable income.

The only constant is change - and it is accelerating

The role is diverse: I have to answer media questions on sales activities in Botswana and food safety issues in China, while understanding the role and remit of the European Commission. At the heart of it all, I have to consider, and then explain and articulate why broader society should allow my company the licence to operate.

An illustration of how far I have come since my days as a student: at a recent five-day conference in Italy, I was one of 40 middle/senior managers there; 75% came from east of Istanbul and when we did a 1,2,3 cheer, we didn’t do it in English, but in Russian… the lessons of geography, the appreciation of different cultures and of underlying global forces are relevant today if we want to understand the changing nature of people’s lives on this changing planet.

Rupert Maitland Titterton read geography at Edinburgh University between 1984 and 1988. He is Corporate Director for Social Responsibility Communications as well as Communications Director for North Europe for Tetra Pak.
Can a changing climate trigger
earthquakes, tsunamis and volcanic eruptions?

Bill McGuire, Professor of Geophysical and Climate Hazards, University College London

The whole idea that changes in our world’s climate can promote a potentially hazardous reaction from the solid Earth, or geosphere, sounds a bit mad. In actual fact, however, this is not even a controversial notion, with plenty of evidence published in the peer-reviewed literature supporting such a reaction. Most of this comes from the post-glacial period, during which time our world flipped from a frigid wasteland, 20,000 years ago, to the more clement planet we know today. Central to the geosphere’s response is the transfer, during this astonishing planetary metamorphosis, of a staggering 52 million cubic kilometres of water from the great ice sheets to the ocean basins. As ice cover 3km thick at northern high latitudes vanished, so global sea levels shot up by 130m as long-depleted ocean basins were replenished.

As the great ice sheets melted, so an enormous load was removed from active faults beneath, whose activity had been long suppressed, allowing them to rupture and release enormous amounts of accumulated energy in single bursts. In Lapland, the result was a cluster of huge quakes in excess of magnitude 8; events that today would rarely be seen outside of the most active tectonic plate margins.

In Iceland, the loss of 1km of ice cover meant that magma long held captive beneath its weight was able to open new routes to the surface. More than this, the consequent reduction in pressure from above allowed molten rock to form more easily in the magma ‘nursery’ beneath the crust known as the asthenosphere. Together, these two responses led – around 12,000 years ago – to an extraordinary volcanic rejuvenation, with levels of eruptive activity across the island climbing more than 30 times.

The effects of ice loss at high latitudes also had geological ramifications that stretched farther afield. Around 8,000 years ago, an earthquake linked to the loss of Scandinavia’s ice cover triggered a massive submarine sediment slide off the coast of Norway. The tsunami spawned by the formation of the Storegga Slide was more than 25m high when it struck the Shetlands, and 6m high when it crashed onto the east coast of Scotland.

Far more widespread than the consequences of melting ice at high latitudes was the 130m global sea level rise, which loaded the ocean basins and bent the lithosphere (the crust and rigid uppermost mantle together) around their margins. This, in turn, acted to increase the frequency of earthquakes on coastal faults like California’s San Andreas, and Turkey’s North Anatolian, and at the same time squeezed magma out of volcanoes located close to the ocean.

Clearly, then, past climate change seems to have been very effective at waking the ‘giant’ beneath our feet, but what of the future? Is it possible that contemporary climate change could play a similar role? In actual fact, it looks as if this is already happening. In southern Alaska, an increase in the frequency of earthquake activity has been demonstrated, convincingly, to correlate with the thinning of glaciers and ice caps, which has amounted in places to 1km in the last hundred years. Across the world, including in the European Alps, New Zealand and the Caucasus, there have been a notable number of giant landslides in recent decades, many of which have been linked to heat waves, which are increasing as a consequence of climate change. It seems that higher temperatures are melting the ice and thawing the permafrost that are the only things holding the faces of many mountains together.

Looking ahead, the degree to which the solid Earth reacts to anthropogenic climate change is likely to depend upon how well we do in terms of slashing greenhouse gases and keeping temperature rises to the bare minimum. The current picture looks pretty bleak, however, and we are on course for a 4°C global average temperature rise. This is likely to translate to 15°C and more in the Polar Regions, making it difficult to see how the Greenland and West Antarctic Ice Sheets can survive. Researchers are already speculating that melting of the Greenland Ice Sheet may evoke a seismic response on time scales as short as decades, while modelling the loss of Iceland’s Vatnajökull Ice Cap points to a rise in volcanic activity here. Elsewhere, as global sea level rise accelerates and the ocean basins are loaded further, so the potential will grow for an increase in both earthquake and volcanic activity around the margins.

All-in-all, the signs are there that we may be bequeathing to our descendents not only a hotter world, but also a more geologically dangerous one.

“Clearly, then, past climate change seems to have been very effective at waking the ‘giant’ beneath our feet, but what of the future?”

Bill McGuire is an academic, science writer, and radio and television broadcaster. He was a member of the UK Government Natural Hazard Working Group established in 2005, and a member in 2010 of the Science Advisory Group in Emergencies addressing the Icelandic volcanic ash problem. Bill’s latest book, Waking the Giant, is our Reader Offer this quarter – see back page for details.
You can help us to make connections between people, places & the planet by joining the RSGS.

Readers of The Geographer can purchase Waking the Giant for only £11.40 (RRP £18.99) plus £3.00 p&p. To order, phone 01536 452640 and quote the reference ‘RSGS2012’.

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BOOK CLUB

Furthest North
An epic adventure rowing the Arctic to a Pole position
Rod Macrae (Frozen World Publishing, January 2012)

Recounting the remarkable story of the ‘Old Pulteney Row To The Pole’ expedition, from its beginnings through to its exhausting dramatic climax, and illustrated with photographs taken by the crew during the expedition, this is a fascinating book about a unique polar and maritime adventure.

Experts told Jock Wishart that his idea of rowing a boat to the 1996 certified position of the Magnetic North Pole was impossible, even foolhardy. In August 2011, he and his crew of five proved them wrong.

The Hockey Stick and the Climate Wars Dispatches from the Front Lines
Michael Mann (Columbia University Press, March 2012)

In its 2001 report on global climate, the UN Intergovernmental Panel on Climate Change prominently featured the ‘Hockey Stick’, a chart showing global temperature data over the past thousand years. This demonstrated that temperature had risen with the increase in industrialisation and fossil fuel use. The inescapable conclusion was that worldwide human activity had raised CO₂ levels, warming the planet. The Hockey Stick became a central icon in the ‘climate wars’; well-funded science deniers immediately attacked the chart and the scientists responsible for it.

Mann shares the story of the science and politics behind this controversy, introducing industry figures and the media groups who do their bidding to cast doubt on the science. Throughout, he reveals the role of science deniers, abetted by an uninformated media, in diverting attention away from one of the central scientific and policy issues of our time.

Ghost Milk
Calling Time on the Grand Project
Iain Sinclair (Hamish Hamilton, July 2011)

Beginning in his east London home many years before it will be ‘invaded by the Olympian machinery of global capitalism’, Sinclair travels from the mouth of the Thames to Oxford, crosses Morecambe Bay in the footsteps of drowned Chinese cockle pickers, and visits an Athenian, post-Olympics landscape of vast and deserted stadia.

In a story of incident and accident, of the curious meeting the bizarre, Sinclair writes angrily of failed ‘grand projects’, and numerous other half-completed, ill-advised or abandoned structures. Ghost Milk is a road map to a possible future, as well as Iain Sinclair’s most powerful statement yet on the throwaway impermanence of the present.

How the World Works
A hands-on guide to our amazing planet
Christiane Dorion, illustrated by Beverley Young (Templar Publishing, February 2010)

When and how did life begin? Is the earth moving beneath our feet? Why does the weather change? Why does the sea move? How do plants live? Encompassing all of these questions and more, this prize-winning book for children introduces the Earth’s important cycles and processes, and crammed with pop-up models, tabs to pull, flaps to lift, and lots more things to discover, this fact-packed guide reveals the awe-inspiring wonders of our world. The book offers an exciting way for children to learn about geography and science, and encourages children to think for themselves about the impact of human actions on our world.

The World Atlas of Sport
Who plays what, where and why
Alan Tomlinson (New Internationalist with Myriad, May 2011)

From American football to Sumo wrestling, Alan Tomlinson paints sports’ big picture. He charts international sporting events and issues, and the economic structures within which sports operate.

He profiles well-known sports with a global reach and those with a strong cultural base, tracing each sport’s development, analysing its commercial momentum, and identifying its most successful exponents.

Waking the Giant
How a Changing Climate Triggers Earthquakes, Tsunamis and Volcanoes
Bill McGuire (Oxford University Press, February 2012)

Twenty thousand years ago our planet was an icehouse, before an astonishing transformation saw it metamorphose into the temperate world upon which our civilisation has grown and thrived. It was one of the most dynamic periods in Earth’s history. Now there are signs that the effects of climbing global temperatures are causing the sleeping giant to stir once again. Could it be that we are on track to face a fractious one?

In Waking the Giant, Bill McGuire draws together research from different areas and introduces a growing area of research, looks back at the Earth’s past to consider what our future might hold, and demonstrates how the various systems of the Earth interact, showing that the scale and range of hazards from climate change may be greater than we have appreciated.

Reader Offer - save 40% Offer ends 30th September 2012.

Readers of The Geographer can purchase Waking the Giant for only £11.40 (RRP £18.99) plus £3.00 p&p. To order, phone 01536 452640 and quote the reference ‘RSGS2012’.

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