

With a World of Heritage So Rich

Lessons from Across the Globe for U.S. Historic Preservation in its Second 50 Years

The steps to prioritizing and undertaking action at sites threatened by climate change – incorporating a citizen science approach into heritage management in Scotland

By Tom Dawson

Background

The sea poses one of the greatest natural threats to cultural heritage sites. There is a fear that future sea level rise will result in monuments becoming drowned, but perhaps of more immediate concern is the catastrophic damage that may occur during severe storms. Wave action during a storm can remove many metres of the coast edge at a time. As the land crumbles, all upstanding and buried heritage sites will be permanently lost.

Coastal change is natural and shorelines have always shifted, but there are warnings from climate scientists that problems will become more acute in the future as sea levels rise.¹

Managing the problem

Many thousands of Scottish heritage sites have already been damaged by the sea. Perhaps the most famous is Skara Brae, a Neolithic settlement discovered after a storm in the nineteenth century and now a World Heritage Site.² The scale of the threat to Scotland's coastal heritage prompted Historic Scotland (now Historic Environment Scotland)³, to formulate plans and strategies to manage the problem.⁴ These developed after almost a century of survey and recording by two organisations that had been compiling inventories of the sites and monuments; the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) and British map makers, the Ordnance Survey.

Coastal Surveys

Historic Scotland recognised that the coastal zone deserved special attention due to the level of threat and that a specialised survey of the coast was required. In 1996, Historic Scotland published guidelines for undertaking rapid Coastal Zone Assessment Surveys (CZAS).⁵ These were designed to enhance existing records, gathering data on the condition and threats to all sites and monuments in the intertidal zone and within a 100 metre corridor from the coast edge, together with information on the geology, geomorphology and erosional state (as observed on the day) of the coast. Between 1996 and 2010, 28 surveys covering 5,000 km of Scotland's coastline were completed. The surveys recorded over 12,500 sites, many of which were previously unrecorded, and 3,700 sites included a recommendation for further action.⁶

Prioritisation

Between 2005 and 2010, a series of reports were prepared by the SCAPE Trust and the University of St Andrews on the coastal surveys.⁷ This included a study that analysed the previously collected data and prioritised action at vulnerable sites.⁸ Prioritisation was undertaken by combining the actual or potential *value* of each heritage site with the *level of threat* it faced using GIS (Geographical Information System) software. The analysis was followed by widespread

consultation with local and national heritage managers, an inclusive process that led to revisions of the prioritised list. The final product was a database of prioritised sites that included a staged list of suggested actions to be undertaken at each site.

The study, together with accompanying field trips, revealed that the condition of many heritage sites had worsened since the original coastal surveys (and in some cases, the sites had been totally destroyed). It was also noted that storms frequently revealed new discoveries or unseen elements of known sites, but only for a very short period before they were covered again with beach sediment. The first staged recommendation made for each prioritised site was therefore a visit to record its current condition.

Citizen science

The report highlighted almost 1,000 high priority sites that needed re-assessment, spread across the mainland and numerous offshore islands of Scotland. Building upon the long tradition of community archaeology and the strong interest in local heritage in the UK, the 'Scotland's Coastal Heritage at Risk Project' (SCHARP) was initiated. The project was made possible by a grant from HES⁹ and an innovative British funding stream, the Heritage Lottery Fund, which distributes profits from a national lottery to fund cultural projects.¹⁰

SCHARP is a two-stage project that adopts a citizen-science approach to heritage recording. The team, based in St Andrews, supports local groups to gather information, including immediately after storms, when new exposures are most likely to be visible. It also recognises that compiling lists of sites alone does not actually protect them from harm, and the second stage of the project encourages local action at vulnerable sites.

Updating information - ShoreUPDATE

The first stage of SCHARP involved working with volunteers to revisit sites on the prioritised list and update information about them. This necessitated making the heritage data accessible to the public. In many countries around the world, locational and other information is restricted due to fears about sites being harmed.¹¹ In the UK, heritage data is publicly available and so it was possible to design a mobile app so that the public could both access the CZAS data and update it. The freely-available app includes maps so that people can navigate to sites, and it enables a two way exchange of information between the public and the project team. In order to allow use in areas with no mobile signal (a common occurrence in remote places), the app allows site records and map tiles to be cached for later use in the field.

The app uses the device's GPS to allow volunteers to navigate to sites, where they take photographs and use a simple multiple choice recording form to update records. Information is stored on the device and is sent directly to the project team once contact with a network has been re-established. Alternatively, paper copies of the recording form are downloadable from the project website, which also contains an interactive portal where all records and photographs can be viewed.¹²

The SCHARP team travels widely to recruit volunteers and provide training and guidance, and there is regular contact and support for local groups. In addition, 'How To' guides and videos are available on the website. Records, once received, are checked and verified by the project team and all updated information and photographs are uploaded to the online database and shared with local and national archives, thus updating the national picture. The SCHARP team have found photographs particularly useful as they often reveal information which might not be obvious to

non-specialists. Images also provide a point in time record for comparison with previous photographs.



Figure 1: A ShoreUPDATE training event with SCHARP Project Manager, Joanna Hambly. Note the eroding structures in the coastal dune behind the group.

In the first three years of the project, 1,100 volunteers have submitted over 3,500 photographs, updated 1,000 site records and recorded 350 new sites. This latter point is important as it demonstrates how the public can help inform heritage managers about new discoveries, especially those exposed after storms.

Practical projects - ShoreDIG

The ShoreDIG element of the project asked the public to nominate prioritised sites which were locally-valued, and projects were developed that created genuine partnerships between communities and heritage professionals. Detailed discussions were held with groups which outlined the possible options for work at the nominated sites, and it was the community who made the final decision on the course of action to be undertaken. All work was done with the active participation of community members, working in collaboration with heritage professionals, and on-site training helped to ensure the transfer of skills.



Figure 2: SCHARP Project Officer, Ellie Graham, helping to record a prehistoric well during the community excavation of an Iron Age building uncovered during a storm in Shetland.

A total of fourteen projects have been initiated to date, and the scope of each project has been very different, both in scale and ambition¹³. Several groups have worked with archaeologists to undertake traditional archaeological excavations that have rescued artefacts and information. The digs have provided a wealth of information at sites that would otherwise have been destroyed, but at which there was no developer or other body to pay for recording. The community rescue excavations have been done to high scientific standards and are helping to provide an insight into how people adapted during previous periods of environmental change.

In addition to excavations, a range of other projects have been undertaken. For example, the community on the island of Sanday, Orkney recorded and relocated Bronze Age structures exposed after a storm. After detailed recording, they transported the stones away from the beach and rebuilt them next to the Sanday Heritage Centre. The rebuilt structures form a focus for heritage interpretation and although the original context has been lost, the action was deemed appropriate as the alternative would have been the total destruction of the site.



Figure 3: Volunteer members of the Sanday Archaeology Group recording the Bronze Age Burnt Mound at Meur as part of their relocation project.

The group at Wemyss, Fife combined laser scanning, 3D photogrammetry, video production, oral history recording and other techniques to record numerous ancient Pictish carvings contained within seven former sea caves, making the digital archive accessible to the world via the internet.¹⁴

Video making featured in most projects¹⁵, and interpreting discoveries for the public, either at the original site or in a nearby heritage centre, was also an important element.¹⁶ The projects also employed social media (including blogs) to ensure that information about the projects was made widely available.¹⁷

Conclusion

Following on from the coastal surveys and the prioritisation project, local communities have now become stewards of threatened sites.¹⁸ Working in partnership with heritage professionals, they have helped to manage the vulnerable resource by reporting and documenting damage to known sites and recording new discoveries. The follow-on ShoreDIG projects have preserved, recorded or interpreted locally-valued sites for future generations, providing information on past societies which would have been otherwise lost.



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- ¹ http://ipcc-wg2.gov/AR5/images/uploads/WGIAR5-Chap5_FINAL.pdf - accessed 12th June 2016.
- ² <http://whc.unesco.org/en/list/514> - accessed 12th June 2016.
- ³ In October 2015, Historic Scotland and RCAHMS came together to form a new lead public body, Historic Environment Scotland, charged with caring for, protecting and promoting the historic environment. As much of the work referred to in this article was undertaken before the merger, the former organisations are referred to throughout.
- ⁴ For example, Ashmore, P J 1994 *Archaeology and the Coastal Zone: Towards a Historic Scotland Policy* and Barclay, G J & Fojut, N 1995 *The Management and Conservation of the Built and Maritime Heritage in the Coastal Zone* Historic Scotland, Edinburgh.
- ⁵ Historic Scotland 1996 *Coastal Zone Assessment Survey: Historic Scotland Archaeological Procedure Paper 4* Historic Scotland, Edinburgh.
- ⁶ Dawson, T 2014 'A View from Scotland's Coast' in *The Public Historian* Vol 36, No 3. University of California Press.
- ⁷ Dawson, T. 2006 *Archaeology and coastal erosion in Scotland: The current state of knowledge and future directions*. Internal report for Historic Scotland, Edinburgh, Scotland, UK.
- Dawson, T. 2007 *A review of the Coastal Zone Assessment Surveys of Scotland, 1996–2007: Methods and collected data*. Internal report for Historic Scotland, Edinburgh, Scotland, UK.
- ⁸ Dawson, T. 2010 *A system for prioritising action at archaeological sites recorded in the Coastal Zone Assessment Surveys*. Internal report for Historic Scotland, Edinburgh, Scotland, UK.
- ⁹ Additional funding came from The Crown Estate and the University of St Andrews.
- ¹⁰ <https://www.hlf.org.uk/> - accessed 12th June 2016.
- ¹¹ See National Register Bulletin 29, 'Guidelines for Restricting Information about Historic and Prehistoric Resources', prepared by the National Parks Service.
- ¹² See the Sites at Risk map on the SCHARP website, <http://scharp.co.uk/> - accessed 12th June 2016.
- ¹³ As of June 2016: For details of projects, see <http://scharp.co.uk/shoredig-projects/> - accessed 12th June 2016.
- ¹⁴ <http://www.4dwemysscaves.org/> - accessed 12th June 2016.
- ¹⁵ See the SCHARP website for a link to videos - <http://scharp.co.uk/>
- ¹⁶ For example, interpretation boards at Eyemouth Fort and an interactive display in Eyemouth Museum, Scottish Borders.
- ¹⁷ <https://scharpblog.wordpress.com/> - accessed 12th June 2016.
- ¹⁸ In line with Principle No. 4 of the Society for American Archaeology - Principles of Archaeological Ethics.