

Section A		
Institution: University of St Andrews 		
Unit of Assessment: UoA28: History		
Title of case study: Learning from Loss: Coastal heritage, climate change and community action		
Period when the underpinning research was undertaken: 2000 - 31 December 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Tom Dawson	Principal Research Fellow	01 April 2000 - present
Joanna Hambly	Research Fellow	05 January 2009 - present
Elinor Graham	Research Assistant	20 August 2012 – 27 September 2020
Period when the claimed impact occurred: 01 August 2013 - March 2020		
Is this case study continued from a case study submitted in 2014? No		
Section B		
		
1. Summary of the impact (indicative maximum 100 words) For two decades, the St Andrews team (SCAPE: Scotland's Coastal Archaeology and the Problem of Erosion) has evolved citizen and community centred approaches to researching coastal heritage that is increasingly threatened by the effects of climate change. This has included a strategic effort to involve the public in the creation of a register of coastal heritage at risk for Scotland, which is now used to prioritise funding by Historic Environment Scotland (HES). Between August 2013 and March 2020, the team's participatory citizen science methods have led to 536 people (volunteers) updating information on the condition of 1,557 coastal heritage sites, and 683 people (volunteers) involved in research and interpretation projects at 16 threatened coastal sites. SCAPE's work is given as an example of best practise in citizen science by the US Parks Service and has been praised by the President of the Society for American Archaeology for shifting attitudes towards the role of local communities in mitigating heritage loss, seeing them as <i>"not only first responders but true knowledge producers"</i> (2016). This impact case study provides evidence of the well-being benefits to individuals of involvement in project activities and gives examples of threatened sites transformed by community action into heritage assets for the future. This impact case study also shows how the team's international reach has been translated into action in new projects based upon their model of participatory research, including by England's Coastal and Intertidal Zone Archaeological Network (CITIZAN), Maine's Midden Minders, Florida's Heritage Monitoring Scouts (HMS) and by projects in Puerto Rico and Iceland.		
2. Underpinning research (indicative maximum 500 words) Climate change is threatening an uncalculated number of archaeological sites globally and those at the coast are already experiencing the most dramatic damage and loss. These contain		

evidence of humanity's past and are an irreplaceable resource of learning for contemporary society. In the face of near certain acceleration of climate change impacts, there is an urgent need for new approaches to manage threatened coastal heritage.

Since 2000, Dawson and his team have evolved methods applied in Scotland that integrate citizens and communities in researching coastal heritage at risk. These methods are increasingly applied in other parts of the world (R1). Much of the work has been in collaboration with SCAPE, a research organisation within St Andrews set up by Dawson.

Between 2000 and 2010, Dawson managed all new coastal heritage surveys on behalf of Historic Scotland. In 2011, he completed a desk-based analysis of over 12,000 documented sites and devised a new method for prioritising action based upon heritage value and vulnerability (R2). This resulted in a database and report, with 940 sites identified as high priority and requiring immediate attention, and many others needing visits to update out-of-date records.

To provide the information needed for management, Hambly, Dawson and Graham launched the nationwide Scotland's Coastal Heritage at Risk Project (SCHARP) in August 2012. With thousands of sites spread around the country, engaging communities was crucial for compiling condition reports, reporting new discoveries and providing estimations of social and intrinsic value (R3). The ground-breaking project web portal (R4) and mobile app allowed the public to update and edit original data, to submit photographs, to make recommendations, and to add new discoveries to the project database.

The updated records were analysed, and recommendations were reviewed by national and regional heritage managers. The resulting report (2017) took a nationwide view and provided the evidence needed to identify the most threatened sites and the coastlines most susceptible to change (R5).

The participatory research approach adopted by the team also brought to the fore the significance communities felt by moving on from monitoring and observation to taking action at locally valued eroding sites. Since August 2013, collaborative research projects at 16 threatened sites nominated by communities have involved archaeological excavation, 3D digital documentation and interpretation, filmmaking and, in one case, the relocation of a site from the intertidal zone to the local Heritage Centre to create a new visitor attraction. These projects demonstrate how community-led initiatives can be very effective in preserving the heritage values of threatened sites through the transformation of the information they hold into new knowledge and experiences (R6).

In 2018, 'Learning from Loss' a research collaboration led by Dawson, brought together communities, academics and heritage managers from Scotland and USA to explore public attitudes to heritage loss as a result of climate change. Their findings, along with the effectiveness of the team's approach in integrating research with community action has influenced policy in Scotland and the US and provided a model which has been adapted and employed internationally (R1).

3. References to the research (indicative maximum of six references)

R1. Dawson, T., Hambly, J., Kelley, K., Lees, W., and Miller, S. 2020 Coastal heritage, global climate change, public engagement, and citizen science. *Proceeding of the National Academy of Sciences*, 117 (15) 8280-8286. DOI: [10.1073/pnas.1912246117](https://doi.org/10.1073/pnas.1912246117). **Peer-reviewed journal**

R2. Dawson, T. 2016 *The steps to prioritizing and undertaking action at sites threatened by climate change – incorporating a citizen science approach into heritage management in Scotland* US/ICOMOS and the U.S. Advisory Council on Historic Preservation.

<https://usicomos.org/wwhsr/> [accessed 10/4/20] **Commissioned essay from world-leading heritage agency**

R3. Dawson, T. 2017 A central role for communities: Climate change and coastal heritage management in Scotland. In: *Public Archaeology and Climate Change* Oxbow Books, pp. 23-33. ISBN: 978-1-78570-704-9. **Peer-reviewed book chapter**

R4. Database and interactive map produced during the prioritisation project and updated through contributions from project volunteers <http://www.scharp.co.uk/sites-at-risk/#zoom=1&lat=7862231.42789&lon=-449143.99347&layers=B00000FT> [accessed 19/3/20]

R5. Hambly, J. 2017 *A Review of Heritage at Risk from Coastal Processes in Scotland: Results from the Scotland's Coastal Heritage at Risk Project 2012 – 2016* <https://scapetrust.org/wp-content/uploads/reports/SCHARP-CoastalHeritage-REVIEW.pdf> [accessed 19 March 2020] **Report for Historic Environment Scotland and others**

R6. Dawson, T. 2015 Taking the middle path to the coast: how community collaboration can help save threatened sites In: D. Harvey, & J. Perry (Eds.), *The Future of Heritage as Climates Change: Loss, Adaptation and Creativity*. Routledge, (Key Issues in Cultural Heritage) p. 248 – 267. ISBN: 978-1-138-78184-9. **Peer-reviewed book chapter**

4. Details of the impact (indicative maximum 750 words).

Heritage sites are valuable archives of past change and adaptation, but globally, approximately tens of thousands are threatened by climate change and coastal processes. We have pioneered a citizen-science approach to heritage research, management and action. Our participatory research has 1. directly engaged and brought benefits to over 1,000 people (individuals and local communities). In addition, 2. our analysis of crowd-sourced data is now used by Historic Environment Scotland when prioritising funding. Finally, 3. our methodologies have been highlighted as examples of best practice and adopted by heritage organisations in Britain, Europe and North America. We are, therefore, helping change attitudes towards heritage management in the face of the climate crisis.

1. Individual and community benefit

Between August 2013 and March 2020 Dawson and team's participatory citizen science methods in researching coastal heritage at risk in Scotland (R3) led to 536 people (volunteers) updating information on the condition of 1,557 coastal heritage sites and 683 people (volunteers) involved in research and interpretation projects at 16 threatened coastal sites, each nominated by the communities. Testimonials based upon evaluation interviews with 50 participants (community members) report significant well-being benefits from involvement, most strongly linked to social factors and skills development. For Simon, in the Western Isles, involvement was ***“one of the factors that's pushed me into doing a Master's degree”***. Pam in Fife said, ***“I have to say the research side has been tremendous...I feel like I've given something back”***. Involvement for John in the Highlands was ***“a big social thing and I think that's very important”***. As a result of her experience, Jenny in Eyemouth reported ***“I've actually found a new lease of life with this project and I think that's been very useful as you get older”*** (S1).

Three community projects resulted in the transformation of threatened heritage sites, which created lasting community assets. Faced with the total destruction of a site on [Sanday, Orkney](#), Islanders relocated prehistoric structures from a beach at Meur to their Heritage Centre. Digital methods were used by the Friends of [Eyemouth Fort](#), who oversaw the creation of an interactive virtual reconstruction of their eroding sixteenth-century fort in the town's Museum; and the Save the Wemyss Ancient Caves Society preserved the heritage values of nationally significant but endangered local heritage in their ground-breaking virtual 4D [Wemyss Caves](#) website and an installation in the East Wemyss Visitor Centre. The action by Sanday residents was used in the most recent Marine Climate Change Impacts Partnership Report Card 2020 as an example of

the ***“importance of community-driven solutions to the loss of coastal heritage assets”*** and ***“indicative of the changing approaches to managing cultural heritage that will be necessary as climate change intensifies”*** (S2).

The examples above show why, in her opening address to the World Archaeology Congress (Kyoto, 2016), the President of the Society for American Archaeology singled out Dawson and his team for ***“reaching beyond traditional heritage management”*** and shifting attitudes towards acknowledging the role of local communities as ***“not only first responders but true knowledge producers”*** in mitigating heritage loss in the face of a growing climate emergency (S3).

Recognition of the team’s work with the public is further demonstrated by their projects winning five accolades in the biennial British Archaeological Awards (BAA) - the British ‘Archaeology Oscars’. They won Best Community Project (in both 2014 and 2018); Best Innovation (2014) and were runner up in Best Presentation (in both 2014 and 2018: S4). This number of awards has not been achieved in the BAAs before.

2. National policy and management

The team’s research into identifying and quantifying Scotland’s coastal archaeological resources and developing robust methods for prioritisation has resulted in management recommendations (R5) used by Historic Environment Scotland’s Archaeology Grants programme ***“in determining where to allocate resources”***. HES adds that ***“we signpost this source of information for potential archaeological grant applications and archaeological contractors”*** (S5). Both the data produced, and SCAPE’s approach, are described by HES as ***“instrumental in the delivery of Scotland’s Archaeology Strategy”*** (S5). The value of such data in strategic management is recognised by the National Trust’s Coast and Marine Advisor for England and Wales, who has argued that a similar approach should be adopted south of the border, stating that ***“the ability to accumulate the type of time-series data that SCAPE can...could help us sort out, for example, where the priorities lie for understanding the historic environment and cultural heritage features as they are impacted by coastal change”*** (S6).

3. International influence and providing a model for others

During the impact period, an audience of 10,916 heard about the team’s citizen and community-based approaches to heritage threatened by climate change in 129 presentations given in village halls up and down the country and at conferences around the world. This has resulted in an international demand for the team’s expertise. Dawson advised the Cultural Heritage Agency of Iceland on the management of threatened coastal sites and the Director of the National Heritage Agency of Iceland states that ***“as a result ... we have formed a group of professionals and volunteers working on the registration of such sites in Iceland”*** (S7). In Puerto Rico, Dawson’s influence was the catalyst for a nationwide campaign to identify coastal sites at risk and identify actions for resilience (S8). In 2019, Dawson was invited to the Faroe Islands to advise the Faroese National Museum and Minister of Culture on mitigation options for eroding coastal heritage, which led to funding for a new project to protect an important site on Sandoy.

The influence of the St Andrews team has also resulted in their model being taken up and adapted elsewhere. This was highlighted by the US National Parks Service (NPS) in their acclaimed Cultural Resources Climate Change Strategy (2016), which states that ***“SCAPE has developed multiple citizen science projects to address the challenges of long coastlines, large numbers of diverse cultural heritage sites at risk from coastal erosion, and limited staff and other resources”*** and notes that adaptations of their model include: ALeRT, (France); CITiZAN (England); Arfordir (Wales); and MASC (Ireland) (S9).

Since the NPS strategy was published, two further projects in the USA, closely modelled on the St Andrews approach have been initiated. In 2017, members of the team were invited to a workshop at the University of Maine which resulted in the establishment of the [Maine Midden Minder Network](#), a citizen-science project involving First Nations people, local communities, academics and heritage managers. The team’s long-standing relationship with the Florida Public

Archaeology Network (FPAN) and its involvement in the establishment of the [Heritage Monitoring Scouts](#) (HMS) originated with a conference presentation in 2016. The importance of the St Andrews work is described by FPAN's Director: ***"Finding out what you and your colleagues at St Andrews have been doing in Scotland to address climate and heritage underscores, I think, the importance of international participation at conferences, which is where we first learned of your program ... I can say thank you without hesitation for your part in making it [HMS] not only exist but succeed ... I truly value the collaboration with you, Joanna, and Ellie at the University of St Andrews. This has truly and significantly influenced, in a very positive way, our program in Florida and how we approach heritage at risk from climate change"*** (S10).

5. Sources to corroborate the impact (indicative maximum of ten references)

S1. SCHARP evaluation interviews with participants: <https://vimeo.com/232626051> The timings are: Simon 18:40; Pam 19:55; John 20:26; Jenny 20:32

S2. Marine Climate Change Impacts Partnership Report Card 2020; Cultural Heritage Science Review *Impacts of climate change on cultural heritage*: http://www.mccip.org.uk/media/2029/26_cultural_heritage_2020.pdf p.631

S3. Opening address of the World Archaeology Congress, Kyoto, October 2016 by Diane Gifford-Gonzalez, the President of Society for American Archaeology: <https://www.youtube.com/watch?v=xomjidSauoY> (play from 6 mins in)

S4. British Archaeological Awards 2014 (winner of 2 out of 5 Awards) and 2018 (joint winner with CITiZAN). p1, 3 and 4. [2014 WINNERS | British Archaeological Awards](#)

S5. Letter from Historic Environment Scotland.

S6. Learning from SCAPE. A comment piece by Phil Dyke, Coastal and Marine Advisor, National Trust (England and Wales) <https://nt.global.ssl.fastly.net/documents/Views-Magazine-2019.pdf> p.75

S7. Letter from Director of the National Heritage Agency of Iceland.

S8. US/ICOMOS website article: 'Puerto Rico's Heritage Community Rises to the Sea's Challenge'. p2. <https://usicomos.org/puerto-ricos-heritage-community-rises-to-the-seas-challenge/>

S9. NPS 'Cultural Resources Climate Change Strategy' (2016) https://www.nps.gov/subjects/climatechange/upload/NPS-2016_Cultural-Resoures-Climate-Change-Strategy.pdf p49

S10. Letter from the Director of the Florida Public Archaeology Network.