

Institution: University of Stirling		
Unit of Assessment: 28. History		
Title of case: Landscape Legacies: co-producing the recording, understanding, and commemoration of the mining industry		
Period when the underpinning research was undertaken: 2010 - 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:
Catherine Mills	Lecturer	2009 - Present
Period when the claimed impact occurred: 2019 - December 2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact The former coal-mining landscapes of central Scotland have usually been treated as derelict land, abandoned or redeveloped with their diverse legacies – their histories and heritage – often rendered invisible. University of Stirling (UoS) research has enhanced community understanding of these lands: preserving, interpreting, and sustainably presenting these culturally important legacies (Impact 1). This was achieved via the UoS-led community co-production of the Landscape Legacies of Coal Heritage Walks App: a novel form of heritage recording and presentation that provides 213km of curated, research-informed heritage walks across former coal-mining landscapes. This co-production, in turn, has empowered local residents, former miners, community groups and heritage organisations to engage with the dynamic record of rapidly disappearing landscape legacies and industrial archaeology (Impact 2). Collaborators and app users have increased their local cultural understanding of their mining heritage, created new cultural artefacts, and been inspired to further engagement with the history of their communities.		
2. Underpinning research Decline of the coal industry, particularly from the 1960s, led to pit closures, demolition and subsequent dereliction, and repurposing or redevelopment of post-extractive sites. This last stage erased many remaining industrial archaeology and landscape features. Coal-mining's image as dangerous and polluting has meant its rich heritage is often neglected. Our research has challenged this predominant interpretation of de-industrialisation as one of necessary decline and deterioration. Rather than focusing on urban sites, we have addressed the semi-rural mining landscapes of Clackmannanshire in central Scotland. We have conducted research that traces the multiple environmental, historic, and heritage legacies of coal-mining in this area, have demonstrated the diversity of engagement with the heritage of mining in these communities, and have developed a methodology of co-production that makes knowledge about these legacies available to local communities. Specifically, through interdisciplinary research (co-authors Simpson and Adderley submitted to UoA 14; McIntosh submitted to UoA 20) we have investigated and charted, from the perspectives of environmental history, geoarchaeology and social anthropology, the traces left in the landscape in Clackmannanshire coal-mining communities. (R1) A previous project, 'Lead Legacies', facilitated a more nuanced understanding of mining landscapes and their historical value. On that basis, we have analysed the diverse ways in which local coal-mining communities have engaged with the landscape legacies of their mining. (R3) And third, our ethnographic research has shown how a methodology of co-production helps local communities to engage productively with the landscape legacies of mining in their communities. (R2) 'Industrial Devon' (see stir.ac.uk/4n9), a year-long community history initiative delivered in 2013/14 with local primary schools, helped schoolchildren explore the industrial and environmental histories of the River Devon corridor in Clackmannanshire, Scotland through 'learning to be landscape detectives'. This project enabled a better understanding of best practice for community engagement and collaboration. It established key factors for successful public participation, including the necessity of co-production and community ownership of the project; the ease with which local people engage with their physical environment once they are aware of its past and understand how to interpret the limited physical remains. It also		

demonstrated that attitudes towards, and perceptions of, post-industrial sites needed a long-term mechanism to ensure sustainability.

This work has informed the development of a mobile application (app) that enables the co-production of research about the landscape legacies of coal and makes that preservation of local heritage accessible and sustainable (**R4**, hereafter 'Coal App', see Figure 1). The Coal App was developed on the basis of Mills's involvement in a community heritage initiative themed around coal that was organised and funded by the Macrobert Arts Centre at the University of Stirling. Her brief was to work with the local community, providing the project with both a historical perspective and longevity beyond its own delivery period of September/October 2017. This allowed the opportunity to both enhance cultural understanding of the significant role the industry played in Scotland's historic economic and social development, particularly at a local level, and to produce a dynamic record of its rapidly disappearing landscape legacies.



Figure 1. Landscape Legacies of Coal App

This 'Landscape Legacies of Coal' project (see stir.ac.uk/4e6) delivered the key mechanism for the co-production of knowledge through the development of the Coal App. Findings (**R3**) showed that communities in former coal-mining centres of Stirlingshire and Clackmannanshire display ambivalent and more complex relationships with post-extractive landscapes than previously thought, often attributing strong cultural, social and emotional value to such landscapes, including a distinct role in local leisure pursuits. These findings are reflected in the routes and places of interest (see section 4) in The Coal App (**R4**), which are underpinned by archival and ethnographic research conducted by Mills and community stakeholders.

3. References to the research

- R1.** C. Mills, I. Simpson and P. Adderley, 'The Lead Legacy: The Relationship between Historical Mining, Pollution and the Post-mining Landscape' *Landscape History*, 1, 35, (2014) 47-73. DOI: [10.1080/01433768.2014.916912](https://doi.org/10.1080/01433768.2014.916912) **Funding:** Mills (PI), The Lead Legacy: The Relationship between Historical Mining, Pollution and Post-mining Landscape, Carnegie Trust, 2012, GBP720.
- R2.** C. Mills, I. Simpson and J. Geller, 'Industrial Devon: Reflections and learning from schools-based heritage outreach in Scotland', *Journal of Community Archaeology and Heritage*, 6, 3, (2019) 172-188. DOI: [10.1080/20518196.2019.1602967](https://doi.org/10.1080/20518196.2019.1602967) **Funding:** Mills (PI), Industrial Devon, Strathmartine Trust, 2013, GBP900.
- R3.** C. Mills, I. McIntosh, Ian, 'I see the site of the old colliery every day': Scotland's landscape legacies of coal (June 18, 2020). First made publicly available December 2020 at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3751430. Published in *Landscapes*, DOI: [10.1080/14662035.2020.1864095](https://doi.org/10.1080/14662035.2020.1864095)
- R4.** C. Mills et al. 'Landscape Legacies of Coal Heritage Walks', Smartphone/Table App, freely available at app stores: [Android](#) or [Apple](#) (or search 'Landscape Legacies of Coal'). **Funding:** Mills (PI), Coal App, Macrobert Arts Centre, (2018) GBP5,000.

4. Details of impact

Impact 1. Enhanced community understanding of coal-mining landscapes: preserving, interpreting, and sustainably presenting culturally important legacies

We have created impact by co-producing enhanced cultural heritage preservation and interpretation through the medium of our mobile phone app. This has resulted in a greatly enhanced understanding of former-coal mining landscapes among local stakeholders that would be otherwise unvalued and often forgotten. The Landscape Legacies of Coal App (hereafter 'Coal App') was launched in April 2019 (**R4**, Fig 1). The Coal App features 15 discrete co-curated heritage walks (as of 31 Dec 2020, see the app or this overview: <http://stir.ac.uk/4e9>). The routes stretch across the former coal mining heartlands of Scotland's central belt. If combined, the walks currently total 213km (133 miles). By way of comparison, the West Highland Way is only 154km (96 miles).

These **routes represent a new method of collaborative heritage research, recording and publication** by involving individuals who engage in their own history through contributing stories and memories to established routes, or suggesting or even creating new walks, with Mills exercising editorial and research control. The digital format of the app allows the rapid and flexible (compared to traditional interpretation boards at historic sites) recording and interpreting of points of interest with detailed text, numerous photographs, maps and audio/video media, that can be rapidly updated (there is a combined total of approximately 820 points of interest with a combined word count of 175,000; see Figure 2 for an example). Routes and points of interest are presented interactively via an embedded GPS-enabled Google Map. As one review on the Apple App Store states, the Coal App provides a “Fascinating insight into the industrial history and archaeology of Scottish coal mining. Well written and organised, atmospheric photographs and lovely old maps. Warmly recommended, a good day out!” (S6a)

The Coal App’s extremely rich interpretation of historic landscapes has **promoted a greatly enhanced awareness, knowledge and understanding among community stakeholders and Coal App users**, which has been generated by walking the routes or by exploring the routes virtually on the app from home. The Coal App was installed 1,157 times (Google and Apple devices) between its launch in April 2019 and 31 December 2020. (S5a) The value of this unique form of heritage preservation, interpretation, and presentation to local communities is highlighted by Dr Miles Oglethorpe, the Head of Industrial Heritage at Historic Environment Scotland (HES):

“The great thing about the Coal Landscape App is that it helps people identify and appreciate these remains [of the coalmining industry], preserving and recording them digitally as they change, and putting them into the context of the real histories of their own communities. This in turn encourages them to respect and care for the surviving remains of their past, heightening people’s awareness of the importance and inspirational nature of their histories.” (S1)

This observation by a heritage professional of the app’s impact on local communities is borne out by the qualitative value in using the app that users have highlighted in their feedback: the majority of respondents to a feedback survey indicate that the Coal App has **changed their perception of the history of coal mining in Scotland and made them more aware of landscapes and industrial archaeology that are in danger of being forgotten**. One respondent remarked that it was “[g]reat that focus is local and based on a largely neglected heritage,” (S6b) another wrote that “[a] lot of the things we see on a regular basis we just take for granted but never ask why they developed the way they did. Makes a lot more sense now that I know what was going on underground in my area.” (S6b)

Yvonne Weighland Lyle, a visual artist who went from Coal App user to collaborator on the project, emphasises how significant this novel form of preservation is in its impact on central Scotland’s coalmining communities:

“...the app has an extremely important role in how the public understand the mining heritage of their communities. We are on the cusp of the passing away of the former miners. Folk who can remember where pits [sic] buildings used to be within the landscape and how things looked and smelled, when lived experience is lost if not recorded.” (S2)

Through the flexibility of the app, the co-produced knowledge about the local mining communities has also become much **more accessible** to a wider range of local and regional stakeholders, from walkers, to local heritage organisations to heritage professionals. Weighland Lyle comments:

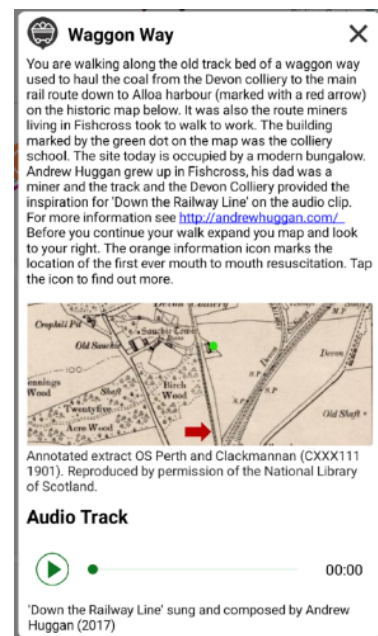


Figure 2. Example of a Point of Interest on the Devonside route (one of 50 on the route)

“It’s really handy to have this quickly accessible app with this variety of information; it’s a pre-existing research resource that means people are not dependant on finding everything out and organising everything for themselves, you simply download the app.” (S2)

The app thus made co-produced knowledge accessible to those with little prior knowledge of coalmining history as well as those who were already interested: “[I] didn’t know it was such a huge and widespread industry and of such economic importance”; “Always been interested in industrial archaeology but the app has introduced me to a much larger and more diverse collection of industrial landscapes”, are two representative comments. (S6b)

Murray Dickie, President of the Clackmannanshire Field Studies Society (CFSS: cfss.org.uk), who collaborated on 8 routes for the app, also highlighted:

“It’s very difficult to do colour photographs onto the paper routes, it [the Coal App] allows us to do considerable expansion and ... also it ... actually allowed us to have more detail because the trouble with a paper route is there comes a point in time where there’s just too many words on the piece of paper. ... I think that [collaborating on the routes] worked out extremely well and the four other members of my group felt [it] was a really worthwhile experience.” (S3)

The Coal App and its routes also had an impact by making this co-produced knowledge available to traditional history organisations, most notably in the collaboration with the National Mining Museum Scotland (NMMS). As David Bell, Assistant Curator NMMS states:

“The app compliments [sic] the museum experience by focussing on the historical influence of the colliery on the local environment and village”, and by providing “stimulating learning and discovery activities based on the collections.” (S4)

Bell also points out that the Coal App has had an impact on NMMS’s work by enabling it to forge stronger partnerships with other institutions, including the University of Stirling, to develop NMMS’s range of users, and thus significantly improve the accessibility and use of the Museum’s collections, raising awareness of the Museum more generally. (S4)

The Coal App’s impact as a novel form of community recording and preservation was also in evidence when it was presented at the ‘Mining History and Archaeology: Towards a Research Strategy’ event in October 2019. This event was organised to explore ways in which communities can best promote their mining heritage. The event led to the formation of the Southern Uplands Mining Heritage Organisation. Mills was elected to its Management Committee to take a lead on “encouraging an interest in Southern Uplands mining heritage, by working with local schools, community groups and government.” (S10)

Impact 2: Empowering through Education

A survey of Coal App users (S6b) showed the App, by offering an accessible and flexible education tool, had an **empowering effect**. This impact can be traced on several levels. The Coal App, according to the *Scotsman*, was “providing a much needed release [from lockdown restrictions] while also enabling people from further afield to virtually explore the Central Belt coalfield.” (S9) A surge in downloads (337 in Apr/May 2020 versus 78 in Feb/Mar 2020) during the national lockdown and travel restrictions (S5) suggests that communities found value in using the Coal App from their “armchair” (S3) and during daily exercise. **Educational benefits** came with some users stating they “have become keener on local history”, they now “look more closely at the landscape when out walking”, and that they were “Amazed how far the industrial area was in the village [Newtongrange].” (S6b)

Creating and researching routes for the Coal App was also an **empowering process for local heritage groups** like CFSS, giving them the confidence and the means to extend the reach of their heritage engagement work and allowing that work to be presented in a more in-depth yet accessible manner. This success was shown by the desire of collaborators to encourage others to take this approach:

“... what we would like to see happening is ... more of this. I'm trying to encourage other groups to see that this is a way forward... We're going to go to [local history/heritage] groups and saying [sic] 'we think you should do this.'” (S3)

This process of **empowerment through increasing cultural participation** is particularly apparent with Royston Goodman, an ex-coal miner who worked at the Dollar and Longannet mines. Collaboration with Goodman was pivotal in the development of the 'Royston's Way' Route which follows the path of an underground cable belt on which he used to work. Goodman observed that his participation involved deeper research than he would otherwise have engaged in, and that by “creating this simulation [app routes] we are preserving a moment in industrial and mining engineering which would otherwise be lost.” (S7) Although already very knowledgeable in local mining history, Goodman stated that he had “discovered routes that I didn't know existed from using the app.” (S7) This collaboration also empowered Goodman to pursue research into local Second World War history: by engaging the local community, he has developed four walking routes on this theme and now plans to collaborate with local historians to develop a similar heritage walking app for this area of history. (S7) For Mark Cranston, curator of the private Scotland's Brick History archive and database (www.scottishbrickhistory.co.uk/ - winner of a Scottish Heritage Angel Award), collaboration on the Coal App provided a new platform for showcasing and integrating brick history into wider industrial history. For example, information on Cherryton Brickworks drawn from Cranston's brick history archive is now featured as a point of interest on the Linn Mill Route. (S5b)

The Coal App, and the co-produced research reflected within it, have also had an impact beyond central Scotland by empowering other mining communities to rediscover their heritage. For example, the community group 'Coal Mining in Leicestershire' states that,

“so far the Leicestershire communities have been very engaged about the app and they think it is amazing to have and keep our heritage alive as in Leicestershire it has disappeared. They [the community] are learning so much about the heritage and feel it [creating routes on the app] is one of the best things to happen.” (S8)

The ability of the Coal App project to inspire is also evidenced in the **new cultural artefacts** that have been produced during collaborations on route design. One such example is the creation of the song 'Down the Railway Line', a track from the album of the same name by Clackmannanshire singer-songwriter Andrew Huggan, and which now features on the Devonside Route on the app (Figure 2). Yvonne Weighland Lyle was inspired to create the exhibition 'Descendants: Interconnections' (yvonneweighandlyle.format.com) (part of the series Under Threat: Artists' respond to the Environment). Weighland Lyle spoke of the personal meaning she found imbued in the Coal App routes: “... in particular the old photographs of sites...”. “...my grandfather was killed in a colliery accident in Lingerwood in 1962, and I had found it difficult to visualise exact locations until I used the app.” (S2)

Future

The Coal App will continue to expand beyond the current REF period, with collaborations under development in Leicestershire, (S8) Kent, and Lancashire. Collaboration with the Leven Project (<https://www.theleven.org/>) will create a river walk with an inter-generational group of volunteers. Routes on the Coal App will therefore evolve into a series of interlinked local eco-museums with significant potential to create a full national eco-museum of coal in the future.

5. Sources to corroborate the impact

- S1. Testimonial: Dr Miles Oglethorpe, Head of Industrial Heritage, Historic Environment Scotland.
- S2. Testimonial: Yvonne Weighland Lyle, visual artist and collaborator.
- S3. Testimonial: Murray Dickie, President, Clackmannanshire Field Studies Society.
- S4. Testimonial: David Bell, Assistant Curator, National Mining Museum Scotland.
- S5. a. Coal App analytics from Google and Apple. b. Linn Mill Route, 'Cherryton Brick Works' Point of Interest text
- S6. a. Coal App Apple App Store Review. b. Feedback survey responses.
- S7. Testimonial: Royston Goodman.
- S8. Testimonial: Coal Mining in Leicestershire.
- S9. David Mclean, *Scotsman* (24 April 2020): <http://stir.ac.uk/4vl>
- S10. Southern Uplands Mining Heritage Organisation correspondence