Aberystwyth University

Searching for an Anthropo(s)cene in the uplands of mid Wales
Griffiths, Hywel; Goodwin, Gavin; Keevil, Tyler; Salisbury, Eurig; Tooth, Stephen; Roberts, Dewi

Published in: GeoHumanities
DOI: 10.1080/2373566X.2017.1329631
Publication date: 2017

Citation for published version (APA):

General rights
Copyright and moral rights for the publications made accessible in the Aberystwyth Research Portal (the Institutional Repository) are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

• Users may download and print one copy of any publication from the Aberystwyth Research Portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the Aberystwyth Research Portal

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
tel: +44 1970 62 2400
e-mail: is@aber.ac.uk

Download date: 03. Oct. 2020
**Searching for an anthropo(s)cene in the uplands of mid Wales**

<table>
<thead>
<tr>
<th>Journal:</th>
<th>GeoHumanities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript ID</td>
<td>RGEO-2016-0097.R2</td>
</tr>
<tr>
<td>Manuscript Type:</td>
<td>Practices and Curations Submission</td>
</tr>
<tr>
<td>Keywords:</td>
<td>Anthropocene, anthroposcenic, creative writing, dams, Wales</td>
</tr>
</tbody>
</table>

**Abstract:**

This essay presents the responses of four creative writers to the highly modified landscapes of the Cambrian Mountains in mid Wales. Through a tour of the historic mine site of Cwmystwyth and the dams of Cwm Elan our aims were to engage with the concept of the ‘anthropocene’ in a landscape that could be emblematic of the proposed new geological interval. Through poems and prose inspired by these landscapes, the physical, social, cultural and political processes shaping them are explored. The pieces have a strong sense of place, and touch on themes of pollution of the environment by heavy metals, geomorphological impacts of dams, and the human stories associated with those places. We demonstrate the great potential of such places and landscapes as sites where artistic creativity and science can engage and collaborate in order to find ways of communicating concepts such as the ‘anthropocene’ and the ‘anthroposcenic’.

URL: [https://mc.manuscriptcentral.com/geohumanities](https://mc.manuscriptcentral.com/geohumanities)  E-mail: geohumanities@aag.org
Abstract

This essay presents the responses of four creative writers to the highly modified landscapes of the Cambrian Mountains in mid Wales. Through a tour of the historic mine site of Cwmystwyth and the dams of Cwm Elan our aims were to engage with the concept of the ‘Anthropocene’ in a landscape that could be emblematic of the proposed new geological interval. Through poems and prose inspired by these landscapes, the physical, social, cultural and political processes shaping them are explored. The pieces have a strong sense of place, and touch on themes of pollution of the environment by heavy metals, geomorphological impacts of dams, and the human stories associated with those places. We demonstrate the great potential of such places and landscapes as sites where artistic creativity and science can engage and collaborate in order to find ways of communicating concepts such as the ‘Anthropocene’ and the ‘anthroposcenic’.

Keywords: Anthropocene, anthroposcenic, creative writing, dams, Wales
The issue of whether we have now exited the Holocene epoch and entered a new geological interval defined by the actions of humanity – the Anthropocene – is currently the subject of significant scientific debate. While some argue that humans are now the dominant force shaping the surface of the earth, and that the changes we are creating will be preserved in future geological strata (Crutzen, 2002, Waters et al. 2016), others are dubious of the justification, practicality or value of the Anthropocene in a world in which action, rather than definitions, are required (Scourse, 2016). However, the ethical, philosophical and moral dimensions of this debate have taken it beyond the sciences, arguably inspiring a shift in the arts, humanities and social sciences (Lorimer, 2012; Yusoff, 2013; Johnson et al. 2014; Buck, 2015). Matless’s (2016, 18; 2017) proposition of the “Anthroposcenic” foregrounds “the way in which landscape becomes emblematic of environmental transformation.” His proposition focuses on how places, sites and landscapes such as eroding coastlines or melting glacial snouts become “scenes through which processes interrogated under Anthropocene and climate change rubrics become evident” (Matless, 2016, 18) and so provide “a stepping point for Anthroposcenic stories” (Matless, 2017, 2), and “meeting points with science” (Matless, 2016, 18). In so doing, he extends and enriches the Anthropocene concept and offers a new opportunity to creatively explore places and landscapes influenced by human activity.

This article records the responses of four writers to the landscapes of the upper River Ystwyth and Cwm Elan (Elan Valley) in the Cambrian Mountains, mid Wales. Our aims were to engage with the concept of the ‘Anthropocene’ in a landscape that could be emblematic of the proposed new geological interval. Through poems and prose inspired by these landscapes, the physical, social, cultural and political processes shaping them are explored. The pieces have a strong sense of place, and touch on themes of pollution of the environment by heavy metals, geomorphological impacts of dams, and the human stories...
associated with those places. These pieces were written especially for performance at the
“Strata: art and science collaborations in the Anthropocene” symposium, held at
Aberystwyth University in January 2016
(http://cargocollective.com/artscienceclimatechange/Strata-Art-and-Science-Collaborations-in-the-Anthropocene). At the Strata symposium, the pieces were performed and broader
discussions were held about the value of science-art collaboration in engaging and educating
the public about the Anthropocene and related concepts. Prior to the symposium, in
December 2015 we had travelled from the mouth of the River Ystwyth at Aberystwyth to its
upper reaches at Cwmystwyth, one of the most important historical lead mining sites in the
UK (Figures 1 and 2A). We then travelled eastward across the drainage divide into Cwm
Elan, where a series of six large dams (Craig Coch, Pen-y-Garreg, Garreg Ddu, Caban Coch,
Dol-y-Mynach and Claerwen – Figures 1 and 2B) were built between the end of the
nineteenth and the middle of the twentieth century to provide drinking water for the English
city of Birmingham, and later were engineered to produce hydropower. As a group of poets,
writers and geomorphologists, we observed, discussed and mused upon the landscapes that
we travelled through and that surrounded us at regular stopping points along the route.

FIGURE 1 HERE

Gavin Goodwin and Hywel Griffiths’s poems engage directly with the impacts of mining and
dam construction on the physical landscape. Goodwin’s eight evocative quatrains are strongly
influenced by landforms and the processes operating on them. “We travel” he says, “enclosed
by ice-carved hills” and rocks which are “seemingly still” but the rivers are clearly polluted
with “poison” and “swimming with copper and lead.” Standing near a bedrock outcrop over

URL: https://mc.manuscriptcentral.com/geohumanities  E-mail: geohumanities@aag.org
which the natural course of the River Elan flows before being dammed (Figure 2C), he sees
the natural geomorphological processes - the “eddy and swirl of pebbles slowly / burrow
down into the bedrock … with ever-refreshing force.” There are human stories as well: the
lead miners of Cwmystwyth are here, for example (“by thirty three those men were dead”), as
are the labourers who built the dams in Cwm Elan, backs bent by years of building work
(“Measure that pick against that dam / and understand his stone stoop.”)

FIGURE 2 HERE

In a similar vein, Hywel Griffiths’s “Cwm Elan”, presented here in the original Welsh (as a
villanelle) and in English translation (as a kind of vers libre), responds to the direct impact of
dam building on geomorphological processes and explicitly responds to the scientific context
of the Anthropocene debate. The dams are traps for the river’s sediment load, breaking the
links between the sources of sediment on the upland slopes and the ultimate sinks in the
estuaries and seas of south Wales. Where the river used to flow over dramatic, even sublime,
waterfalls in “ribbon-like” currents, the water is now “stricken in surprise” and “it’s quiet
where the waterfall once roared.” The repetition of lines and the form of the stanzas in the
metre echo the build-up of layer upon layer of sediment at the bottom of the reservoirs.
Again, in a poem which predominantly deals with changes to the physical landscape, a
human element is also present; there are fewer signs now of the old farmers of Cwm Elan
ploughing the fields as they used to.
The profound social, cultural and political impacts of the human activities that characterise
the Anthropocene are addressed in greater complexity in Tyler Keevil’s acceptance speech by
a fictional head engineer at an awards dinner and Eurig Salisbury’s satirical take on the text
in a notional visitor guidebook to Cwm Elan. Keevil’s speech is a debate on the advantages
and disadvantages of large dams in evocative microcosm. Keevil portrays the long-lasting
negative impacts of the dam in how the head engineer is haunted by the fate of the eleven
year old “poor Jones lad…” who falls to his death from a high plank at the construction site.
The engineer cannot forget his guilt about the boy’s death (“I think of him sometimes.”), and
sees himself saving the boy when he visits the dam. In this guilt, perhaps we have the
collective guilt of humanity – the architects of climate change and the Anthropocene – about
the impacts we continue to have on the environment. There is irony in the engineer’s
comment: “Many people … have no idea as to the true extent of the costs of these kind of
projects.”

In appropriating and covertly subverting sentences presented to the public on information
boards (e.g. Figure 2D), Salisbury’s poem challenges official attempts to portray Cwm Elan
as “… an unspoilt area where nature thrives / alongside human endeavour.” The cultural cost
of preserving this “unspoilt area” is presented in the otherness of “native” aspects, that is, the
Welsh language, once the language of Cwm Elan communities now displaced by water
management and tourist centres catering for large numbers of English visitors. The few farms
that remain are now kept in “an authentic state of disrepair” and the main cultural reference
point is the poet Shelley, who visited Cwm Elan in 1811– 1812. The seemingly pleasant and
informative texts found on signboards at various points in the valley are undermined by
seeking to portray the area in simple, virginal terms. The landscape is in fact full of humans –
the park rangers, the retired “volunteers” and the tourists who are said facetiously to play a
central role in the modified hydrological cycle – but the only unwelcome figure is that of the
“native”. Here the estrangement and severing of historical links between communities and
landscapes as a result of human activity is clearly seen.

River Dam Quatrains

We travel enclosed by ice-carved hills
these seemingly still Silurian rocks
the first scuttle and blossom of life
on land beside, beyond the water.

A land mined since caligae trod here.
By thirty-three those men were dead. We see
poison leak from the tailing. River
still swimming with copper and lead.
The wind-bowed valley trees,
follow the water back to its source.

Black peat, gravel and heather
bog origin – Ystwyth and Elan.

Iron-stained strata, rust-coloured cascade.
The eddy and swirl of pebbles slowly
burrow down into the bedrock,
burrow with ever-refreshing force.

Vertigo. Follow the rippling sheet
of cloud pouring down from the lake,
pouring in to the giant holding
tank from which a city will drink.
The cold’s now set in my feet. No stamping
or rubbing it out. Hunger. Mist
floats up from the falls and a turbine spins
light from the force.

Measure that pick against that dam
and understand his stone stoop.
In green silence, his back turned
to the white force, the froth and thunder.

We travel back – light over Aber
last light of the short day. Ystwyth
pouring into the harbour
waves stones change in the dusk.
Cwm Elan

Mae’r ffrwd o’r ffridd a’r foryd yn pellhau,
ac yma yn yr haen o waddod du
ysgarwyd y ffynhonnau bach a’r bae.

Roedd egni nad oedd modd ei ganiatáu,
heb inni’i ddal, ac felly o bob tu
mae’r ffrwd o’r ffridd a’r foryd yn pellhau.

Mi wn y tynnwyd arad trwy y cae
ond wela’ i mo hyn, cans man lle bu,
ysgarwyd y ffynhonnau bach a’r bae.

A lle bu Nant y Gro yn bywiocau

dim ond y dŵr yn rhewi’n syfrdan sy’,
mae’r ffrwd o’r ffridd a’r foryd yn pellhau.

Nid oes ceryntau fel rhubanau’n gwau,
mae’n ddistaw lle bu’r rhaeadr a’i ru,
ysgarwyd y ffynhonnau bach a’r bae.
Ar waelod oer y llynnoedd heno mae
haen arall eto’n disgyn oddi fry,
mae’r ffrwd o’r ffridd a’r foryd yn pellhau,
ysgarwyd y ffynhonnau bach a’r bae.

**Elan Valley**
The hillside streams and estuaries estrange.
And down there in a layer of sediment
the sources and the sink are now divorced.

An energy that could not be allowed,
Without a harness, and so, on either side
The hillside streams and estuaries estrange.

I know that ploughs were pulled by men in fields,
but I can’t see them now, where they once were
the sources and the sink are now divorced.

And now, where Nant y Gro was energised
there’s only water stricken in surprise,
The hillside streams and estuaries estrange.

There are no currents weaving, ribbon-like
It’s quiet where the waterfall once roared
the sources and the sink are now divorced
There sinks, tonight, to chilling floors of lakes
another layer, falling from above,
The hillside streams and estuaries estrange.
the sources and the sink are now divorced.

*Hywel Griffiths*

**The Chief Engineer's Acceptance Speech**

Thank you, ladies and gentlemen, for having me here tonight. It is a great honour, to
be recognized like this, for my achievements. But I cannot take to myself all of the
credit. If I have had some success in my field it is because I was raised in a god-fearing household, and its influence has infused everything I have done. As a result I
have worked hard, and steadily, and at the same time been honest and straightforward.
That is the only credit due to me for the accomplishments I’ve engineered.

That was a joke, or a pun, albeit a poor one. But perhaps you were right not to laugh,
or laugh so uneasily; engineering is, after all, a serious business – requiring an
everous investment of time, money, and manpower. I ought to know. Take, for
example, one of my finest projects – the one that made my name, the one I’ll be
remembered for, the one (I might hazard) that has been instrumental in garnering me
this award. I’m speaking, of course, of the Elan valley dams. As you all know, I was
resident engineer for the building of the dams and responsible for all work upon the
watershed. I threw myself wholeheartedly into the project, and did not spend a single
day outside of the valley for eight years. I trudged up and down the building sites for miles, instructing and directing, inspecting every stone, brick, and joint. I don’t think it’s going too far to say I built those dams, though not, of course, singlehandedly. The men were my hands. It was through them I wielded pick and shovel, stick and dynamite. It was through them that I realized my vision – if it doesn’t seem too bold to call it that – like a sculptor working the landscape itself.

I had a great affection for those men, my navvies. They, too, devoted years of their life to my project. I saw that they were handsomely rewarded, of course. In a time when many were going hungry, they earned 4 pence an hour, which might not seem like much, but we provided the opportunity to work 60 hour weeks, so they made out very well indeed. They had enough to feed themselves, and their families, and enjoy themselves in the canteen – some of them a little too much, if you know what I mean. The work, generally, made them honest. But they required a firm hand, and at times I had to make an example. Like when that junior stonemason went to Rhayader to have a drink, and missed the start of his shift. He had to be let go. Or when the canteen keeper went away for two days, at Christmas no less, without permission. I saw that by the time he returned, he’d been replaced. Stern, yes, but fair. If I didn’t take such a line, what was to stop other men from doing the same? They could be as unruly as boys. Some of them weren’t much more than boys, really. Like that poor Jones lad…

But I was talking about the costs. Many people – even knowledgeable folk such as yourselves – have no idea as to the true extent of the costs of these kind of projects.

Before we even started on the dams we had to build a railway, and an entire village to
house our workers. The Ebbw Vale Steel & Iron Company made a complaint about fair payment, but I can assure you they made out like bandits. We paid five pounds five shillings per tonne for the straight rails, five pounds eight shillings for the curved rails, and six pounds twelve shillings for fishplates. Then there were the 36 end tip wagons from Oldbury Carriage and Wagon works, at 361 pounds each, and 100 side-tip wagons, at 577 pounds, plus a bridge to the village (19 pounds) and the village buildings: school (154 pounds), mission room (112 pounds, 5 shillings), canteen (148 pounds 19 shillings), laundry (80 pounds) hospital (300 pounds), bath house (275 pounds), post office (180 pounds). All that before we could begin the real work.

Dare I tell you about the actual construction costs? Perhaps suffice it to say that the total costs of the dam-building projects reached six million pounds. Six million.

Despite our best efforts, there were other costs, as well. Such an enterprise is not without its risks. We were waging a battle, against mother nature herself – reshaping her to suit our own ends. And as in every battle there were casualties. We had safety regulations, but the men could be lax. And in a project of such scale sheer chance dictates that things will occasionally go amiss. I remember their faces, if not their names. There was the lad from Abaty Cwmhir, killed by the train. His brother tried to call to him but it was lost, over the shrill of the whistle. In the Quarry, a man was putting a charge of gunpowder in when it went off. Then there was the Crusher Yard: the one caught by the shaft as he cleared the chute. In Dolau tunnel, a misfire charge shattered that fellow’s skull, and a few weeks later, in the Crushing Yard again, one of the labourers was caught when the crusher broke away through an overload of stone.
There was that boy, too. Jones. *His* name has stayed with me. Maybe because I was on site that day, maybe because of his age. I remember seeing him before, thinking he looked too young. The foremen had a tendency to overlook these things, you see, if the family needed the money, couldn’t afford the extra mouth to feed. I saw him fall, too. I was inspecting a mixture of cement when I heard the cry, and I turned to see his little body floating down through the air. All around him was a barrage of sand, glittering in the sun, as if he were a comet, trailing a tail of particles. Or an angel, descending to earth on a shower of light. He didn’t land like an angel. The wheelbarrow fell atop of him. He’d been pushing it, full of sand, across a plank, fifty feet up. The plank was standard width – 18 inches, very adequate – so he couldn’t have lost his balance. We think it was heatstroke. He’d fainted. In the inquest, when his age came out, there was some disapproval. But you must understand that if his family told him to lie about his age, it is hard for our foremen to prove otherwise. Of course I wouldn’t have accepted him, had I known. Had he been 14, then yes, that would be fine – that was common. 13 or 12, maybe. Depending on the boy’s stature and physique. Many of these boys are quite strong. But 11? 11 was too young. I know that. Don’t you think I know that? Still. Nothing to be done about it now.

Listen to me. Not striking a particularly celebratory note with my acceptance speech, am I? Some of you might be sitting there, thinking that these costs seem too great, that I have regrets. But I can assure you I don’t. You see, you can not think of each individual story. It helps to think of them as a resource, a commodity, an expense. Yes, lives were expended in the construction of the dams. But what about the other column: the lives we saved? Fresh drinking water, for Birmingham. 24 million gallons a day. All the cases of typhoid, of cholera, that it prevented. All the infants.
Hundreds of lives, thousands. And on top of that, I created a monument in that valley that will last, and outlast: not just myself and the men who worked on it, my hands, but all of you seated here today. It was vital work, important work. My life’s work. And I thank you for recognizing that work with this award. I hope I am deserving.

Still. I think of him sometimes. I think of them all, but the Jones boy in particular. I think of his long, endless fall…and when I visit the dam, which I do frequently, I fancy I see him in the water falling over the face of the dam. Silly, isn’t it? I must be going daft, in my old age. I see him in the curtain of water, in the way it parts around the stonework, splitting into two veils, like the wings of a dove. I imagine I’m back there, watching it happen all over again, but this time, I react faster. I’m fast enough to cross the worksite, and get beneath him. When he lands in my arms he is always so small, so light; he smiles at me, grateful that there was somebody there to catch him.

Tyler Keevil

Elan Valley

Welcome
to the Elan Valley Estate,
72 square miles
of the Cambrian Mountains.

This is an unspoilt area where nature thrives
Elan is one of the most sparsely populated areas in the UK and also one of the wettest. This makes it one of the best places to see a wide diversity of native flora and fauna. This makes it one of the worst places to hear a wide diversity of native phrases and sayings. It also made Elan the choice of the Victorians to create reservoirs to collect fresh water to supply Birmingham and mid Wales. This has now developed into a complete hydrological cycle, as the water being drunk in the Midlands is returned to the land as runoff from the thousands of incomers who kindly piss it all back in our lay-bys and friendly visitor centre. By protecting the water supply and the catchment areas, the scenery, tranquillity and wildlife have been mostly saved from the ravages of the 20th century.
Walking, birdwatching, fly-fishing, dogging and just taking in the fine views and fresh air are what visitors come to enjoy. However, it is a fragile peace in these times of rapid change.

Watch out for fragile pieces on the climbs as rapids change.

The red kite has been allowed to prosper to the extent that its population is now large enough to hold its own devolved assembly.

The sheep, often thought to be livestock, are in fact wild native sheep that migrate seasonally across the uplands. Keep an ear out for their distinctive mating calls all year round!

The farm buildings that stud the landscape are in fact empty, and are kept in an authentic state of disrepair by a dedicated army of retired volunteers.
The peace
and unspoilt countryside
have attracted people to the area since
the poet Shelley’s time.
Construction began on the reservoirs
in the year 82 P.S.
(Post Shelley).

The Elan has been kept for quiet enjoyment.
The Elan has been kept quiet for enjoyment.

The Countryside Ranger Service
leads many walks, birdwatching safaris,
wild boar hunting expeditions,
educational school visits
and other events
throughout the year.

Do nothing to pollute the water.
No swimming, boating or camping is allowed.
Take all your litter home.
If you happen upon a native, please leave well alone
and alert the proper authorities.
Leave all plants and animals
for others to enjoy.

If you are cycling, horse-riding or on a geography day trip, please keep strictly to the signposted rights of way.

Please enjoy your visit.

Eurig Salisbury

Matless’s arguably negative definition of the anthroposcenic – those places, sites and landscapes that are emblematic of climate change and its impacts – has extended the concept of the Anthropocene. Our experiences in Cwm Elan suggest an alternative definition of the term, briefly outlined by Tooth (2016). Landscapes such as Cwm Elan are far from natural and are significantly modified in that the natural forest cover has been replaced by grazed grasslands, and the hydrological and sediment systems have been altered by a series of large dams. Nonetheless, these landscapes have come to be viewed as picturesque and scenic, landscapes to be enjoyed as natural and unspoilt. Anthroposcenic landscapes could, therefore, alternatively be defined as heavily modified landscapes, emblematic of the Anthropocene, but which may be positively valued, even revered, by society. “Landscape” is a term which cultural geographers argue inherently speaks of cultural, political and social tensions and human intervention (the “scape”) as well as natural characteristics (the “land” – Tarlo, 2011), and which, by definition, is in some way modified. This does not, however, mean that a landscape cannot be anthroposcenic, as the term necessarily points to an extreme level of human impact beyond those tensions already recognised; on the palimpsest of the landscape
(Tarlo, 2011), we have now left many traces that cannot easily be erased, and in some instances, these traces may be preserved in future geological strata.

We are certainly not the first writers to engage with the dams of the Welsh uplands. As Griffiths (2014) describes, many dams, most notably the Tryweryn dam in north Wales, have been the subject of largely negative portrayals since the middle of the twentieth century, most notably by R.S. Thomas in his poem “Reservoirs.” Other visitors to Cwm Elan may argue that from a utilitarian perspective, the flooding of some sparsely populated valleys can be morally justified as it has provided the people of a large city with clean water, while those currently farming and administrating the present tourist attractions may have more complex views on the changing landscape. Framing our practice in terms of the Anthropocene (regardless of whether or not it is officially adopted) and the anthroposcenic allows our contribution to examine anew the tensions in a landscape. In particular, we demonstrate how there can be opportunities for the creative writer to experience the close observation of the scientist and for the scientist to experience the speculation and astonishment more commonly associated with artistic practice (McKay, 2008). As such, our contribution provides an example of the cross-disciplinary collaboration required to ‘diagnose’ the Anthropocene (Matless, 2017). Magrane (2015, 91) states that “Poetry can do work for geography, …” and McKay (2008) suggests that, as well as encouraging us to realise the impact that we have had on the landscape, using the term Anthropocene also gives creative writers a longer, geological, “deep time” perspective and a provocation to examine the physical, rather than social, cultural and political impacts of dams. Our contribution shows that artistic creativity that harnesses the power of evocative landscapes for inspiration, imagery and metaphor can be highly effective, particularly when these landscapes convey a strong sense of place.

Despite widespread concerns around the direction and pace of change in an Anthropocene, a
positive development may be that creative engagements such as those presented here offer a way of responding, and this may encourage society to take action and/or adapt to the climatic and environmental changes that we appear to have set in motion.

Acknowledgments

The authors are grateful to two anonymous reviewers and to Tim Cresswell for their valuable comments and to Antony Smith for assisting with the production of figures.

References


Figure 1: Map of mid-Wales, showing the Ystwyth and Elan river catchments and the locations of Cwmystwyth and the dams.
Figure 2: (A) The historical lead mines and associated spoil tips at Cwmystwyth (photograph Hywel Griffiths) (B) bedrock outcrop above Craig Goch Dam, the uppermost dam in the Cwm Elan dam complex (photograph Hywel Griffiths) (C) Claerwen dam (photograph Hywel Griffiths) and (D) an example of an information board in Cwm Elan (photograph Stephen Tooth).
Figure 1: Map of mid-Wales, showing the Ystwyth and Elan river catchments and the locations of Cwmystwyth and the dams.

134x73mm (300 x 300 DPI)
Figure 2: (A) The historical lead mines and associated spoil tips at Cwmystwyth (photograph Hywel Griffiths) (B) bedrock outcrop above Craig Goch Dam, the uppermost dam in the Cwm Elan dam complex (photograph Hywel Griffiths) (C) Claerwen dam (photograph Hywel Griffiths) and (D) an example of an information board in Cwm Elan (photograph Stephen Tooth).