

## The Glasgow Natural History Society Brownfield Biodiversity Conference, June 2022: origins, organisation, experience and proceedings

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### INTRODUCTION

In May 2021, Scott Shanks (Royal Society for the Protection of Birds) gave a talk to Glasgow Natural History Society (GNHS) on brownfield biodiversity, highlighting some of the sites of interest in and around Glasgow, and posing questions about the importance of such sites for wildlife, in the context of pressures to utilise “unused” land for purposes such as housing. Scott’s talk stimulated the idea for a conference and the Society’s Council discussed and accepted the broad idea at its September meeting. A subcommittee comprising the authors plus Scott Shanks then set about putting the idea into effect. Unfortunately, pressure of other work prevented Scott from taking part further than the first meeting. Since the COVID-19 pandemic was still a factor, our organising meetings proceeded via the online platform Zoom, with correspondence via e-mail.

We soon agreed that the conference would be a contribution to the 2022 Glasgow Science Festival, thereby essentially fixing the date as Saturday 4th June. Another early decision was that we would offer two excursions to Glasgow brownfield sites on Sunday 5th June, as a follow-up to the conference. We realised that people differed over their responses to the continuing pandemic and therefore that it would be sensible to make the conference a “hybrid”, delivered mainly in-person but with on-line attendance an option. We had not attempted this before, but were assured that the University of Glasgow’s facilities, available in the Graham Kerr Building’s lecture theatre 1, would make it feasible. Having the conference in that building also allowed the use of the Zoology Museum as a poster display venue.

Assembling a set of high quality speakers and topics was the responsibility of Savanna van Mesdag, who is working towards a Ph.D. in the field of anthropogenic biodiversity and geodiversity, and who therefore knows researchers around the country who work in the field. Two of the speakers who agreed to participate were to describe brownfield sites in Glasgow which had been transformed to benefit wildlife: both agreed to lead excursions to their sites on the day following the conference: Martin Faulkner to Hamiltonhill Claypits, and Gemma Jennings to Malls Mire. Through his role at the Glasgow Biological Records Centre, Richard Weddle was in touch with people knowledgeable about

many relevant sites, and he took responsibility for encouraging the submission of poster presentations. Roger Downie chaired and minuted the meetings, wrote and submitted a funding application to the Blodwen Lloyd Binns Bequest (BLB) grants committee, and liaised with Glasgow Science Festival, whose EventBrite booking system was used to register members of the public wishing to attend the conference and/or the excursions. The BLB grants committee awarded the conference up to £1,000 to cover speaker expenses, refreshments (so that these could be free to all attendees), speakers’ lunches and Glasgow Science Festival registration. As part of the Festival, there was no room hire charge. In the event, costs were a little under £700.

After much correspondence, nine speakers agreed to give talks on the day, one of them (Liam Olds) remotely from south Wales. Most were able to send talk titles and abstracts in advance for the printed conference programme. Eight agreed to present posters, some online (and shown during refreshment intervals) and others physically in the museum. Over 60 people signed up to attend in person, but this decreased to around 40 on the day: the beautiful June weather was perhaps a factor, as well as the Royal Jubilee holiday. We also had about a dozen sign-ups for attendance online, but around six actually turned up. Several members of GNHS kindly volunteered to staff the registration desk and the refreshments stall. Andy Wilson (GNHS photography convenor) generously agreed to take photographs of the event (Fig. 1). Twenty four attendees completed Festival feedback forms, nearly all rating the conference as excellent or very good, with a mean score of 4.4 out of 5. We limited attendance at the excursions to 25 for logistic reasons and, on a beautiful day, around 20 were shown around the Hamiltonhill Claypits in the morning, and a similar number around Malls Mire in the afternoon, some people attending both.

Roger Downie chaired much of the conference, with help from Suzanne Burgess, and provided a brief introduction and summing-up. Suzanne had pointed out that the conference was in some ways a follow-up to the Urban Biodiversity meeting that GNHS had organised in 2010 (Proceedings in *The Glasgow Naturalist* 25, part 4, 2012), and which she had spoken at (as S.Z. Bairner: MacAdam & Bairner, 2012), as had Gemma Jennings



**Fig. 1.** The conference in session. (Photo: Andy Wilson)

(Jennings *et al.*, 2012). As well as providing case-histories of brownfield biodiversity from sites and areas around the country, the current conference included an introduction, by Dominic McCafferty, to a major Natural Environment Research Council-funded project recently underway in Glasgow: “GALLANT- Glasgow as a living laboratory accelerating novel transformation”. It will be of considerable interest to watch for the results of this project over the next few years.

In assembling the conference proceedings published here, we found that not all speakers were able to provide written-up versions of their talks. Where this is the case, we provide below only the abstract that was included in the printed conference programme. In one case (Martin Faulkner’s paper on Hamiltonhill Claypits), the paper we publish is significantly different from the talk given on the day: the written-up version is a detailed history of the site and the process by which it has been converted into a Local Nature Reserve. To supplement this, Emma Plant has kindly written an account of the site’s biodiversity, given in the proceedings but not on the conference day. In another deviation, Gemma Jennings was unable to provide a written-up version of her account of Malls Mire, but this has been produced by her successor at the site, Nicole Digruher. The providers of posters at the conference have been encouraged to develop their presentations into Short Note format papers, and these therefore have become valuable permanent accounts. Roger Downie and Richard Weddle have acted as referees for all these papers and Short Notes, with additional oversight by the Editor. Finally, for completeness, we include brief accounts of the two excursions.

## PROGRAMME

### Talks

**10.00 Roger Downie:** Welcome and introduction.

**10.15 Savanna van Mesdag:** Anthropogenic biodiversity and geodiversity (full version in proceedings).

**10.40 Suzanne Burgess:** Invertebrates on Falkirk brownfields (full version in proceedings).

**11.05 Liam Olds:** Invertebrates of colliery spoil.

### Abstract

To the north of the Welsh cities of Cardiff, Newport and Swansea lie the South Wales valleys, a landscape of

deep river valleys, steep valley sides, and populated valley floors. Here, the landscape and its communities have been shaped by coal mining. The scars of this heavy industry were everywhere to be seen but over time, nature has acted and the valleys are green once again. The black coal tips have been transformed into visually spectacular havens for wildlife, and so too have the former colliery sites. These symbols of a once destructive industry are now, rather ironically, symbols of hope during a time of unprecedented biodiversity loss across the world. Today, these sites support some of the best examples of semi-natural habitat anywhere in South Wales. Given an opportunity, natural processes are both strong and effective. If we make space for nature, it can recover, even in the harshest of environments. In recent years, research by the Colliery Spoil Biodiversity Initiative, National Museum of Wales and Buglife Cymru has highlighted the important invertebrate conservation value of these sites in South Wales. To date, over 1,000 species have been recorded on these sites, over 20% of which are species of “conservation importance” in the U.K. This talk discussed the results of this research thus far, highlighting key habitats and species associated with these sites, and the issues surrounding their conservation.

**11.45 Emma Williams:** Fungal diversity in coal spoil habitats (no abstract or full version).

**12.10 Ellie Kent:** The small blue butterfly in south Cumbria.

### Abstract

The Back on Our Map Project (BOOM) is supported by the National Lottery Heritage Fund. It is a four-year project led by the University of Cumbria, and is delivered in partnership with Cumbria Wildlife Trust, Natural England, Forestry England and Morecambe Bay Partnership. BOOM is a multispecies restoration project aiming to reinforce and reintroduce a collection of locally threatened or extinct species into the lowland fells of south Cumbria and the coast of Morecambe Bay, reversing biodiversity decline through community action. One such species is the small blue butterfly. There is, currently, a very healthy population of small blue residing on the post-industrial slag heaps of Barrow after a translocation to the site in 2015. The nutrient poor limestone slag provides wonderful growing conditions for their one and only larval food plant, kidney vetch, which is a poor competitor and often gets shaded out in more nutrient rich areas. The slag banks have an unusual topography of steep sided slopes and unpredictable mounds of rock which provide pockets of warm air and shelter from prevailing coastal winds. These slopes, alongside a wealth of nectar filled plants, such as bird’s-foot trefoil and wild strawberry, abundant kidney vetch and tall grasses upon which the butterflies like to roost, provide the perfect habitat for a large population. Therefore, the slag banks have unsurprisingly been selected as a donor population site for our small blue project and as part of BOOM we hope to support the population there through habitat management works, continuous monitoring and kidney vetch planting before conducting a translocation into new sites within the area in the final year of the project. Brownfield sites are incredibly important for the small blue butterfly but in

being so put their population at risk through the constant threat of development.

**13.35 Liz Parsons:** Grassland water voles' colonisation of brownfield sites in the northeast of Glasgow.

#### Abstract

In 2008, it was discovered that a population of water voles was living in grassland in the East End of Glasgow, a kilometre away from any water. Recent research by the University of Glasgow and surveys by ecological consultancies have found that populations are thriving in very unusual locations including brownfield sites, school playgrounds and in parks. The talk discusses the habitats, survey techniques and the spread of these fossorial water voles and the habitat management taking place in Glasgow to protect and enhance this unusual population.

**14.00 Martin Faulkner:** 770 metres as the crow flies (full version in proceedings as "Hamiltonhill Claypits Local Nature Reserve- a funder's perspective" followed by Emma Plant's "Biological recording at Hamiltonhill Claypits").

**14.25 Gemma Jennings:** Malls Mire Local Nature Reserve (full version in proceedings as Nicole Digruher's "Malls Mire Community Woodland").

**15.15 Dominic McCafferty:** Glasgow as a living laboratory- the GALLANT project.

#### Abstract

GALLANT is a NERC-funded (£10.2M) five-year partnership between the University of Glasgow and Glasgow City Council and will use Glasgow as a living lab to trial new sustainable solutions throughout the city. While addressing the city's key environmental challenges, this project will consider the co-benefits and trade-offs for public health, wellbeing and economy. The project brings together over 50 multidisciplinary researchers with 29 public and private sector partners across the city region. Together GALLANT aims not only to bring nature back into the city, but make meaningful, lasting change that embeds sustainability across major policy decisions and empowers communities as stewards of their local places. GALLANT will work with local partners and communities to transform the city into a thriving place for people and nature. The project will help Glasgow achieve its goal to be carbon neutral by 2030 and aid climate resilience. The focus of our work involves "Biodiversity and societal benefits of "natural" urban habitats: Nature-based Solutions in an integrated urban-habitats network" and will investigate how cities can play a key role in halting biodiversity loss by restoring and connecting currently isolated habitat patches (see example of green space in North East Glasgow: Fig. 2). We will undertake field studies examining ecosystem services provided by open spaces in the Glasgow region and examine connectivity of these areas for urban wildlife. Local communities and project partners will play a key role in helping researchers to map key species that will inform management practices in open spaces to increase connectivity between habitats.



**Fig. 2.** Urban biodiversity site near Inishail Road, North East Glasgow, Scotland. (Photo: D. McCafferty)

#### Posters

- Z. Weir & I. McLaren: Havoc Meadows and Brucehill Inland Cliff proposed local nature reserve, Dumbarton, Scotland (full version in proceedings).
- J. Birkin: Transforming Scotland's urban landscape into wildlife havens: South Lanarkshire's new local nature reserves (full version in proceedings).
- A. Park: Holmhill Wood community park local nature reserve, Cambuslang, Scotland (full version in proceedings).
- N. Digruher: Fernbrae Meadows Local Nature reserve: biodiversity on a rewilded golf course in Glasgow, Scotland (full version in proceedings).
- E. Plant: Urbanisation had no negative impact on the body condition and size of two bumblebee species (full version in proceedings).
- B. Philp: The Garnock Estuary and Ardeer Peninsula: Scotland's first brownfield SSSI? (full version in proceedings).

#### Excursions

R.B. Weddle & J.R. Downie: Brownfield Conference visits to Hamiltonhill Claypits and Malls Mire (account in proceedings).

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#### REFERENCES

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