



# Short term target audience engagement strategy for 2023

## Avon Gorge and Downs Wildlife Project

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### Background

The Avon Gorge and Downs Wildlife Project (AGDWP) has many areas that it would like to focus on with regard to engagement of the people of Bristol and the surrounding area. It is important that AGDWP continues to use its time and staff resources efficiently and delivers its core elements effectively. It is a hallmark of the AGDWP to be known for quality engagement and delivery in formal education services and in the community events programme, the latter as it is a source of funding as well as engagement for the project. There are a great many areas of engagement which the project would like to pursue to expand its target audience. However, in order not to spread its resources too thinly these will be pursued in a timely fashion, either during 2023 or over the next few years.

AGDWP aims to facilitate an understanding in people that ecosystems are made up of connections between different plant and animal species, and that people have an impact on these species and hence ecosystems. Our biodiversity within our ecosystems keeps our biospheres stable enough for humans to successfully thrive.

### Formal education and learning 2023

#### Secondary schools and colleges and AGDWP

The formal education provision of AGDWP is currently limited to primary schools age. This is a substantial reach; ages four to eleven, but this reach can be expanded to widen our formal education target audience.

- 49 secondary schools in Bristol City Council (30,997 students 2023).

There is a requirement for secondary schools to carry out practical surveying techniques and evaluation of collected data in several year groups in the subjects of biology and geography. AGDWP has the facilities to offer this provision to secondary schools and colleges as part of a single school fieldwork trip, fulfilling the school's objective to meet the appropriate section of the curriculum requirement in one go.

From the Conservation Education Centre we have easy access to a suitable site where surveying and sampling can be carried out effectively and pertinently to obtain useable data; certain areas of the Downs, the Gully and the 'lake' in the UoB Botanical Garden. AGDWP can use their tutors to provide guidance and tutelage, and has the use of an appropriate inside space/classroom following fieldwork to carry out required statistical analysis. Most teachers prefer to carry out statistical work on the same day and under the guidance of the same tutor who ran the fieldwork. What currently prevents us from offering this service to secondary schools is the lack of nearly all suitable required fieldwork equipment. The cost of such equipment is estimated as £2000. For curriculum links detail please see Appendix A. For cost details please see Appendix B.

## Primary schools and AGDWP

AGDWP aims to target primary aged children in some areas of Bristol where there may be less opportunity to engage in a green natural space as highlighted by certain ‘domains of deprivation’ in the Index of Multiple Deprivation, the official measure of relative deprivation for small areas in England. These relevant domains of deprivation are Health, Education and Living Environment (Bristol City Council, 2019)<sup>1</sup> as demonstrated in Figure 1 below.

*There are 7 domains of deprivation, which combine to create the Index of Multiple Deprivation (IMD2019):*

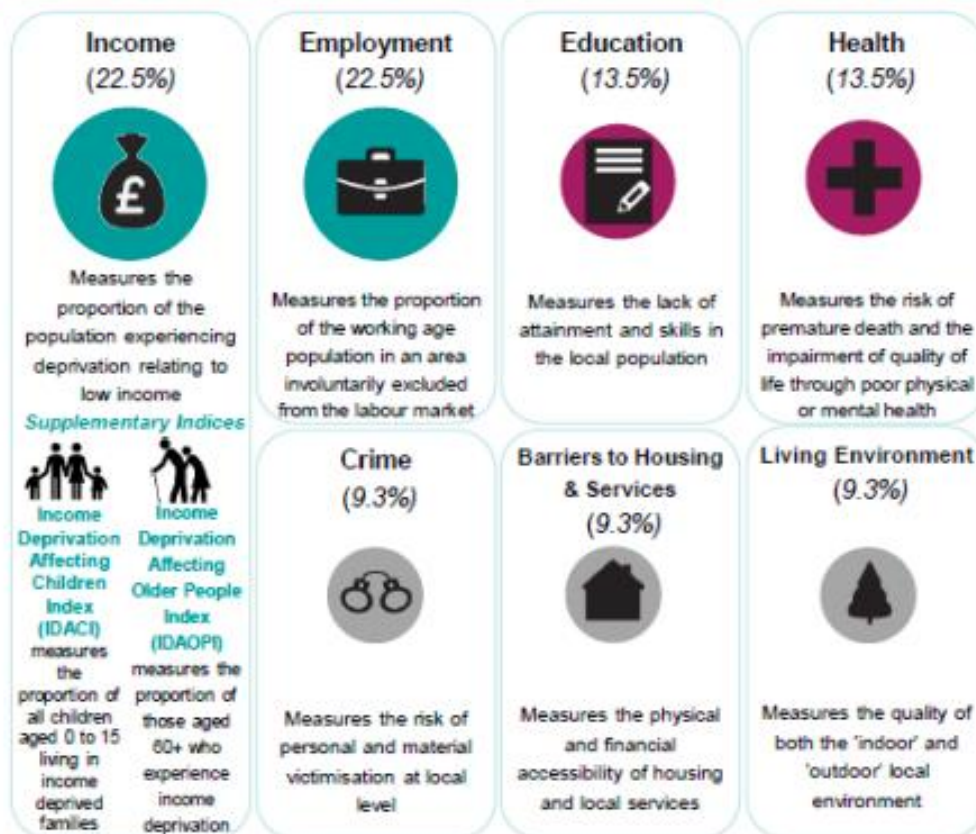


Figure 1. English Indices of Deprivation 2019 (ID2019), Ministries of Housing, Communities & Local Government.

<sup>1</sup> Bristol City Council (2019) *Deprivation in Bristol*. Available from: <https://www.bristol.gov.uk/files/documents/1905-deprivation-in-bristol-2019/file>.

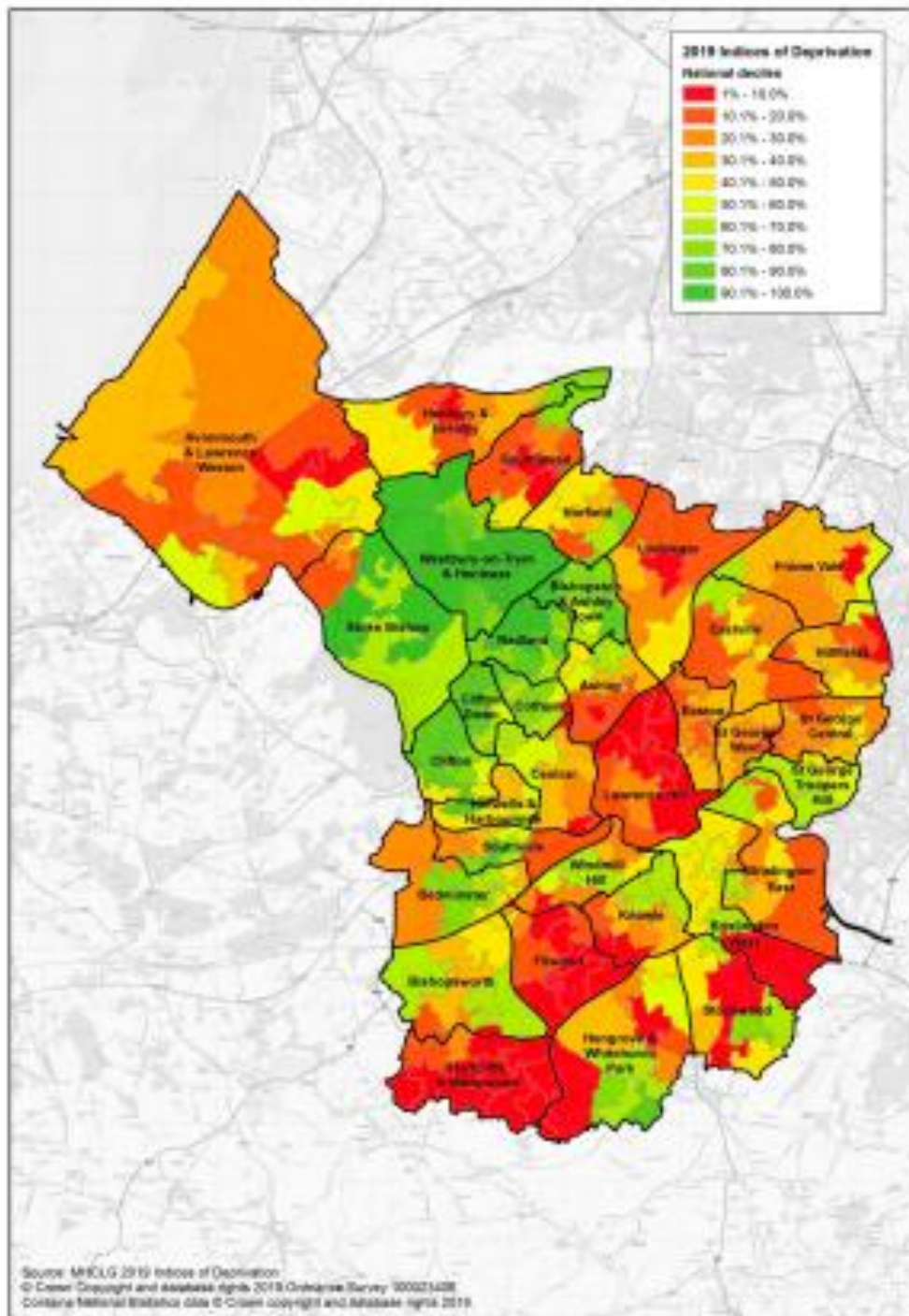


Figure 2. 2019 National Deprivation Deciles by Lower Layer Super Output Area (LSOA)<sup>2</sup>.

As seen in Figure 2. the ten most deprived neighbourhoods in Bristol are all in the South Bristol areas of Hartcliffe, Whitchurch Park and Knowle West. At ward level, the greatest levels of deprivation in Bristol are in the wards of Hartcliffe & Withywood, Lawrence Hill and Filwood (Bristol City Council 2019)<sup>1</sup>.

<sup>2</sup> MHCLG (2019) *Indices of Deprivation* Available from: <https://www.bristol.gov.uk/files/documents/1905-deprivation-in-bristol-2019/file>.



AGDWP is connecting with Knowle Park Primary in Knowle West by engaging with the after school club at the school and initially offering two sessions in-school this term. We will consequently aim to encourage different year groups from the school to visit us on the Downs for curriculum linked school visits. In addition Ilminster Avenue E-Act Academy in Knowle West are visiting AGDWP on the Downs with two of its year groups this term.

AGDWP has also been in contact with the Cathedral School's Trust to identify which of its primary schools will benefit most from engaging with AGDWP. In terms of highest levels of deprivation these are identified as Stoke Park Primary School (32% FSM) in Lockleaze and Headley Park Primary School (19% FSM) in Bishopsworth, both areas highlighted in red/orange in Figure 2. The aim with these two schools initially will be to offer assemblies to the whole school in the autumn/winter 2023 with a further option for different year groups to experience in-school workshops. Visits to the Downs for curriculum linked learning in autumn 2023 or spring 2024 will hopefully follow.

These two engagement strategies are pilots for AGDWP to establish whether these methods of delivering first in-school are successful in building a long term relationship with primary schools in areas of high deprivation, and who may not feel able to visit the Downs due to cost issues. AGDWP would like to take the Downs and Avon Gorge to communities which do not feel able to visit.

In all cases above it may be the case that the schools will need financial support with their transport if they are to visit AGDWP on the Downs.

## **Community Outreach**

### **Pre-school sessions on the Downs or at Leigh Woods**

AGDWP currently does not offer any provision to those children below school starting age and we aim to reach a target audience in the age range three to four, plus carers.

From experience, providing regular sessions for this age group, with a carer/parent also attending, leads to a lifelong engagement with the natural world and an understanding of the connections between wildlife, ecosystems and humans.

When a child attends from the age of three and continues to attend for up to two more years, they discover the natural patterns of our seasons. The focus in each session is on the wildlife and how it is responding to the time of year. For example, in May we focus on waking up from winter and the hibernating mammals of England; in February and March we focus on birds' song, mating and laying eggs in nests; in September we focus on nocturnal mammals; in July we focus on butterflies; in June we focus on leaves of trees; in April we focus on flower colour; in October we focus on minibeasts and getting ready for winter.

Experiential learning, fun and engagement with activities to demonstrate the ecological connections within an ecosystem facilitates a love and appreciation of the natural world in a child. As a child grows they hold onto these values which may then form ecological behaviours to the benefit of the natural world. These values may also then be taken forward into adulthood. From experience a child will go on to attend other activities run by AGDWP throughout childhood and grow their knowledge and understanding of the natural world.



As a child attends with a parent or carer, that adult is also exposed to ecological learning and this is often a new experience for the adult. They also then may begin to change their behaviours for the benefit of biodiversity and increase their engagement with the natural world as their child grows. They may attend family and adult engagement activities with AGDWP to enhance their knowledge and connection with wildlife.

A tutor may need to be employed to run these pre-school age sessions, estimated cost around £1000.

### **Sparks**

Sparks is a Bristol partnership project with Natural History Consortium and Artspace Lifespace and Global Goals Centre – a creative sustainability hub in Bristol City Centre which is inspired by the UN Sustainable Development Goals.

It markets itself as a playful welcoming space to give people easy ways to address the climate, ecological and cost of living crises. It will run from 13<sup>th</sup> May 2023 to a minimum of December 2023. There are spaces related to art, sustainable clothes shopping, waste as well as the natural world.

AGDWP feels this an important space to be represented within as it will reach children whose schools may not normally engage with our regular sessions on the Downs but may attend a more generic setting with a multiple partner offering.

Due to its location in Broadmead children and adults will enter the project from the street to discover what is going on inside. They may have an unrelated aim coming in, but leave with an understanding and behavioural change resulting in a positive impact on the natural world.

As a project representing the valuable biodiversity so important to Bristol, AGDWP believes it to be essential to be represented in the space. The project will reach thousands of people due to its proximity to the main shopping area of Bristol and the length of time it will run for.

### **AGDWP will offer:**

- A recurring schools and general public workshop in conjunction with 'Step into the Amazon' delivered initially during (May)/June/July once every fortnight or three weeks; into the summer holidays and on into the autumn term. This will offer an exploration of our very local biodiversity on the Downs and in the Avon Gorge with an interactive element to complement a contrasting exploration into the biodiversity of the Amazon in Brasil. A thought provoking exploration into how we are losing biodiversity, how the ecosystems are affected in both regions on opposite sides of the planet and what we can all do to help biodiversity in our own local area and beyond?
- Cost of workshop space is £20 per hour, estimated cost £400.
- An installation with interactive materials to sit in the entrance foyer area in conjunction with UoB Botanical Garden and BCC to highlight the biodiversity of the Downs and Avon Gorge. This should catch people's attention as they come in to lead them through a hands-on activity.
- This activity should be reward based so people have an incentive to take part with the result being a behaviour change to positively impact biodiversity.



- It is currently hoped that the design/build of this can be met by Sparks designers and this is under discussion.

### **Citizen Science**

The UK has for some time been a world leader in using citizen science to monitor its biodiversity through events such as the Big Garden Birdwatch led by the RSPB since 1979, the Big Butterfly Count led by Butterfly Conservation and BirdTrack led by BTO. The City Nature Challenge has been in existence since 2016 and has grown into an international event in more recent years, in order to obtain a comprehensive record of wildlife in cities.

AGDWP will be taking part in this event in 2023 by encouraging the general public to record and upload wildlife sightings on the Downs and in the Avon Gorge using the iNaturalist app. We have set up a designated project area on the app so that any wildlife record in this area on iNaturalist will automatically be uploaded into the AGDWP project. We can then go onto our project online to look at species recorded over the allocated time and beyond. Species are verified by experts around the world up to research grade.

We will have two stands for AGDWP on Saturday 29<sup>th</sup> April – one at the Suspension Bridge Learning Annexe and one up at the café on the Downs. At these we aim to reach a large cohort of the general public who we may not otherwise engage with our Downs and Avon Gorge wildlife. We will show people how to download the app, how to record different species and talk to them about our wide variety of common and rare species, what they can do to help conserve and live alongside biodiversity effectively.

### **Finance**

AGDWP may decide to charge for pre-school sessions and secondary sessions to increase income into the project. In such a case it may also be that attendees are more likely to book with AGDWP and value their engagement when they are paying.

### **Outreach to be further explored later in 2023 and into 2024**

- Social prescribing
- Family friendly tree trail
- Nature Works mental health charity for young people aged 11-25.



## **Appendix A**

Some relevant detail on the Curriculum links in England pertaining to AGDWP follows below, taken verbatim from the Department for Education Subject Content April 2014.

### **A level/AS level (sciences)**

#### **General**

The skills, knowledge and understanding of each specification in the subject must .... include the requirements set out below, and be integrated into the mandatory content indicated in the relevant appendix and any content added by the awarding organisation

- use appropriate methodology, including information and communication technology (ICT), to answer scientific questions and solve scientific problems
- carry out experimental and investigative activities, including appropriate risk management, in a range of contexts
- analyse and interpret data to provide evidence, recognising correlations and causal relationships
- evaluate methodology, evidence and data, and resolve conflicting evidence.

#### **Working scientifically**

Specifications in biology, chemistry and physics must encourage the development of the skills, knowledge and understanding in science through teaching and learning opportunities for regular hands-on practical work. In order to develop the necessary skills, knowledge and understanding, students studying A levels in biology, chemistry and physics will be required to have carried out a minimum of 12 practical activities, which will contribute towards the Practical Endorsement.

These skills, knowledge and understanding will also be assessed in A level written examinations in the context of these, and other, practical activities. The written examination for AS will also assess students in relation to their practical skills, knowledge and understanding. Specifications for biology must give students opportunities to use relevant apparatus to develop and demonstrate these techniques.

#### **Practical techniques to be completed by candidates - examples**

- use appropriate apparatus to record a range of quantitative measurements (to include mass, time, volume, temperature, length and pH)
- use appropriate instrumentation to record quantitative measurements
- produce scientific drawing from observation with annotations
- use sampling techniques in fieldwork.

#### **Mathematical requirements and exemplifications**

- Understand the principles of sampling as applied to scientific data - Candidates may be tested on their ability to:
  - analyse random data collected by an appropriate means, e.g. use Simpson's index of diversity to calculate the biodiversity of a habitat.
- Understand the terms mean, median and mode - Candidates may be tested on their ability to:
  - calculate or compare the mean, median and mode of a set of data, e.g. height/mass/size of a group of organisms.



- Use a scatter diagram to identify a correlation between two variables - Candidates may be tested on their ability to: • interpret a scattergram, e.g. the effect of life style factors on health.
- Select and use a statistical test - Candidates may be tested on their ability to select and use: • the chi squared test to test the significance of the difference between observed and expected results • the Student's t-test • the correlation coefficient.
- Substitute numerical values into algebraic equations using appropriate units for physical quantities - Candidates may be tested on their ability to: • use a given equation e.g. Simpson's index of diversity  $[D = 1 - (\sum(n/N)^2)]$ .
- Plot two variables from experimental or other data - Candidates may be tested on their ability to: • select an appropriate format for presenting data, bar charts, histograms, graphs and scattergrams.

Some relevant detail on the Curriculum links in England pertaining to AGDWP follows below, taken verbatim from the Department for Education Science Programmes of Study September 2013.

### **Key Stage 3 (sciences)**

#### **General**

Pupils should understand that science is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review. Pupils should decide on the appropriate type of scientific enquiry to undertake to answer their own questions and develop a deeper understanding of factors to be taken into account when collecting, recording and processing data. They should evaluate their results and identify further questions arising from them.

#### **Working Scientifically – pupils should be taught to within experimental skills and investigations:**

- ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- make predictions using scientific knowledge and understanding
- select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate
- use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
- make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
- apply sampling techniques.

#### **Subject Content examples**

Interactions and interdependencies - Relationships in an ecosystem

- the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
- the importance of plant reproduction through insect pollination in human food security
- how organisms affect, and are affected by, their environment, including the accumulation of toxic materials.





## **Appendix B**

Estimated purchase cost of secondary equipment to carry out surveying and sampling techniques:

Quadrats x10 100 square (£22), 25 square (£20), x1 open circa (£16) £450

Sweep nets x 10 circa £140

Pooters x 30 circa £84

Magnifiers x 40 £385

Tape measures x4 circa £160

Hygrometers x10 circa £235

Soil thermometres x10 circa £130

Light metres x3 circa £186

Clinometres x2 circa £34

Test tubes x100 circa £32

barium sulphate / universal indicator fluid / spatulas / pipettes £105 circa

Goggles x10 £50

Latex gloves

ID charts x9 circa £30

Trowel

Butterfly net circa x1 £40

Metre rules x10 circa £85

**Total: £2041**