



Natural Talent Case Study – Lichens as Air Quality Indicators

Name: Frances Stoakley

Age: 37

Traineeship: Lichens as Air Quality Indicators

Dates of traineeship: 19th January 2015 – 18th January 2016



About your traineeship

Can you give an overview of your Natural Talent UK traineeship? (What organisations are you placed with/type of work you will be involved in?)

Lichens are one of the UK's most important contributions to international biodiversity with around 2,000 species, 1,500 of which are found within Scotland. These often under-recognised and un-noticed species are not only extraordinary organisms which are made up of two individual organisms; a fungal body and algal food source working together in partnership. But they are also bioindicators of ecosystem health. This is because they are highly sensitive to atmospheric pollution and the presence or absence of certain species can indicate the health of an environment.

My traineeship focusses on lichens as indicators of air pollution within the city of Edinburgh. I will be based at the Royal Botanic Gardens Edinburgh (RBGE), where with close mentoring by RBGE staff I will undertake training in specialist scientific skills to develop my expertise in taxonomy, fieldwork and research, alongside transferable skills in data analysis and methodological approaches. This training will contribute towards the Edinburgh Living Landscapes Initiative to help improve Edinburgh's green infrastructure and will engage with local communities and hard to access marginalised communities through delivering workshops on the use of lichen pollution indicators and active engagement activities to empower individuals and communities around biodiversity and its links with local environmental health and human well-being.

Why did you apply for a Natural Talent traineeship?

I am in the process of making a career change. Some years ago I realised that I wanted to re-direct my career path in order to actively be involved in protecting the natural environment and this led to my completing a full time three year BSc in Countryside Management & Conservation degree. I feel this traineeship offers me the opportunity to take the next step in this transition from a theatre performing background into conservation work, whilst in a supportive environment. I was particularly attracted to this traineeship because of the fantastic array of high level training in specialist skills it offers in combination with key public engagement work. I could see how this will allow me to bring together transferable skills from my past career with those skills learnt at University and build on them to realise my full potential in helping to protect less well known species and thus biodiversity.



What kind of employment were you in before undertaking a Natural Talent traineeship?

My previous career was in theatre as an actress, but just prior to my traineeship I was studying on a three year BSc in Countryside Management at Aberystwyth University.

What voluntary experience had you done prior to your traineeship?

I have worked extensively as a volunteer over the last fourteen years, both in the UK and overseas. Whilst at University I volunteered with the RSPB at their Ynys-hir reserve in Wales where I undertook practical conservation in habitat management and estate maintenance. With The Vincent Wildlife Trust I assisted the People and Pine Martens officer to locate new sites for surveying Pine Martens, and monitored grey squirrel hair traps. Most recently I have also volunteered on several citizen science days conducting woodland surveys, assisted in leading nature walks with mental health groups and have been a volunteer education leader on an outdoor learning for sustainability project through Outdoor Learning Wales and the Real World Learning Network.

Overseas I have volunteered with Willing Workers on Organic Farms (WWOOF) both in Spain and British Columbia (Canada), where I undertook a range of jobs in organic farming and gardening. I also worked with the Wilderness Committee Western Canada with whom I took part in an international volunteer project to build a traditional Native Indian dwelling within a Native Indian Community.

What are you most looking forward to during your traineeship?

Up until now my knowledge base has been very broad so I am really excited to hone my skills and develop an expertise in lichens and bryophytes. I am particularly looking forward to working and learning with and from the experts at both RBGE and The Conservation Volunteers (TCV) and exploring how my existing transferable skills and newly acquired skills can help me to connect people with the natural environment, inspiring them to want to protect less well known species and their habitats.

What skills do you anticipate this traineeship will give you?

I think this traineeship will give me a broad range of specialist and transferable skills both practical and academic which will enable me to gain a successful career in conservation. These skills will include: fieldwork - survey methods and recording techniques, data analysis, species identification - taxonomy and systematics, laboratory and microscopy, IT and GIS, habitat restoration and management, landscape scale approaches plus a whole host of public engagement skills, particularly with marginalised communities and in delivering citizen science within communities.

How do you feel your traineeship benefits the conservation sector in the United Kingdom?

Lichens and bryophytes are often un-noticed and under-recognised for their incredible contribution to global biodiversity; as vitally important ecological components of ecosystems and as being bioindicators of ecosystem health. A desperate shortage in people with expertise in these less-well



known species and the habitats that support them is a major barrier to their conservation and protection. This traineeship will enable me to develop an expertise in lichens and bryophytes, so that I can actively contribute to their conservation. Through the public engagement work within this traineeship I will share this scientific knowledge and understanding, making it accessible to the public so that others may recognise the importance of these species within their own neighbourhoods, connecting people with local biodiversity, human well-being and thus contributing to global biodiversity conservation.

What career path do you see yourself pursuing and how will this experience help you?

I believe passionately in raising public awareness and understanding of the natural world around us in order that we may live more sustainably and harmoniously with this planet we share, and I intend to pursue a career path which enables me to do this. This traineeship offers me the opportunity to take a big step towards professionally achieving this through developing my expertise in a perfect blend of specific skills in scientific and ecological understanding and public engagement. I also feel that the opportunity to work and learn with professional experts within two highly respected organisations (RBGE & TCV) will stand me in very good stead for a career path in the conservation sector.