

TEACHERS' NOTES

CLIMATE EMERGENCY FILMS

NATIONAL MUSEUMS SCOTLAND

This resource includes three short films focusing on different aspects of the climate emergency. Designed for S1-3, they can be used in class to look at the climate emergency and careers.

This resource was developed with the Science Department and pupils of Castlebrae Community High School.

FILM 1

WASTE AND POLLUTION

This film focuses on pollution and waste as a result of modern living and how National Museums Scotland's collections reflect this. There is a particular focus on transport and fashion but you can discuss any form of pollution and waste with your classes.

QUESTIONS

1 What aspects of modern life can your pupils identify which cause waste or pollution?

- Can they think of a solution to this waste that people would be satisfied with?

2 What is one thing in the school, or their own lives, that the pupils would be willing to try changing to reduce waste and pollution?

DESIGN CHALLENGE

Ask pupils to design a solution to one of the causes of waste or pollution as identified in question 1. Present these designs back to the class.

FILM 2

EXTINCTION AND HABITAT LOSS

This film looks at habitat loss and the corresponding extinction of some species. It will show how National Museums Scotland collects specimens to monitor populations and document changes.

QUESTIONS

1

What aspects of their own lives do pupils think might cause habitat loss and is there anything they can do to reduce this impact?

- Examples could include diet and source of food (e.g. is it local, Fair Trade, Rainforest Alliance etc), walking off paths when out in nature, buying animal products as souvenirs on holiday, using pesticides in gardens.

2

Ask your pupils to discuss how some habitats could be restored and what this might involve. Can they come up with a plan for this which will suit local people, communities and the economy?

- This could be small scale such as planting window boxes or sowing wildflowers around home/school or large scale 'rewilding' with the reintroduction of lost species.

SURVEY

To study the habitat around your local area get the class to carry out a simple biodiversity survey. This can be done by marking out and examining a metre square and recording everything living found within it. Repeat the exercise over a few days or weeks to see if it changes. Present the data in a format that can be used in future years to track change.

FILM 3

CLIMATE CHANGE AND ICE MELT



This film gives examples of the way in which museums collect data to track weather patterns and how these can help us to understand larger changes in climate over time.

QUESTIONS

1 What impact do your pupils think climate change will have on where they live?

- Over what time period do they predict this change?

2 What actions can they think of that they as individuals, or the school, could implement which might slow the rate of climate change?

CREATIVE WRITING TASK

Ask pupils to respond creatively to the question - How will climate change impact your local area over the next two hundred years? They could choose the format for their response including via a comic strip, graphic novel style, poem, story or other medium of their choice.



TEACHERS' NOTES

CAREERS

NATIONAL MUSEUMS SCOTLAND

Climate change affects the entire planet and as a result everything we do on it. Consequently, careers are increasingly including climate action in their roles.

Here are a selection of staff at National Museums Scotland and others who worked on these films, whose job relates to climate change.

Share these profiles with your pupils, ask them to look out for these people in the films, then consider the questions on page 16.

Curator of Invertebrate Biology (Marine Invertebrates)

Fiona Ware

JOB DESCRIPTION

I look after approximately 4 million specimens of marine invertebrates within the National Museums Scotland collections. My job is very varied and involves data management, collection development (sourcing and acquiring new specimens), conservation of historical specimens, engaging with the public (Twitter, blogs, talks and exhibitions), supporting the scientific community (enquiries, loans, student research etc), managing volunteers and scientific research.

SKILLS REQUIRED

Attention to detail is arguably the most important skill I use on a daily basis – whether it is identifying a tiny animal by counting the hairs on a segment of its antenna, keeping track of each of our 4 million specimens or verifying and matching up complex data with specimens. I work independently most of the time but teamwork, organisation, problem solving, and communication are also important for my role.

HOW DID YOU GET THIS JOB?

I have been interested in the natural world since childhood and biology was my favourite subject at school. I chose to study Marine Biology at Liverpool University and loved it, so I went on to study for a postgraduate degree in marine research at Heriot-Watt University. Following that I had some short, fixed term jobs in marine research at Heriot-Watt and in marine policy at Scottish Natural Heritage (now NatureScot).

A former student classmate of mine brought another short-term role to my attention just as I finished my contract at SNH - Professional Assistant in the Marine Invertebrates section at National Museums Scotland. My application was successful and, although I hadn't previously considered museum work, I found that the role matched my skills and abilities well. Soon afterwards a permanent position of Assistant Curator of Marine Invertebrates was advertised, and my recent experience gave me a huge advantage – I feel I was lucky to be in the right place at the right time!



FAVOURITE PART

I love fieldwork! Fieldwork is a small part of my job ranging from 2-6 weeks per year, but it has taken me to some incredible places and given me some wonderful experiences. My highlights include diving for marine worms in the Galapagos, collecting plankton in the Irminger Sea (between Iceland and Greenland), surveying the sea caves of St Kilda, monitoring deep sea animals off the west coast of Scotland and surveying saline lagoons in the Outer Hebrides. Fieldwork usually requires long hours, physical hard work, discomfort (often living aboard boats or hiking to remote locations in diving gear) and time away from home/family – it's not for everybody but I thoroughly enjoy it!

Curator of Invertebrate Biology (Marine Invertebrates)

Fiona Ware

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Our collection of marine invertebrates provides a unique record of historical and modern biodiversity that documents the presence of particular species in place and time. Scientists can use the collection to find out if the structure of some animals (e.g. coral) is changing or if where particular animals live is changing in response to climate change.

Our own research focuses on a habitat called saline lagoons which is vulnerable to climate change through sea level rise. Saline lagoons are neither fully freshwater (like tap water) nor fully salty (like the sea) and the amount of saltiness in them changes with the tides and the weather – very few plants and animals can survive in such changeable conditions and those that do (lagoon specialists) are highly adapted and extremely rare elsewhere. Saline lagoons are expected to become more salty and stable as sea levels rise and the lagoon specialists that live there may no longer be able to survive so their habitat is a priority for conservation.

WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

I work with the scientific research community, mostly from universities and governmental environment agencies, looking into the effects of climate change on marine species, populations and habitats.

Principal Curator, Modern & Contemporary Design

Georgina Ripley

JOB DESCRIPTION

I am head of the modern and contemporary design section, with overall responsibility for curators and collections of art, design and fashion from c.1850 to the present day. I specialise in fashion and textiles from 1850 to present and lead our contemporary collecting for fashion.

SKILLS REQUIRED

Communication - with colleagues/ the fashion industry/ other museums.

Teamwork - vital! Nothing can get done in a museum without working closely with others, but especially in fashion – we require two people just to lift a box or move a mannequin.

Attention to detail - caring for objects, and researching objects for public enquiries, or writing exhibition text.

Listening - it's important to listen to what our audiences want.

FAVOURITE PART

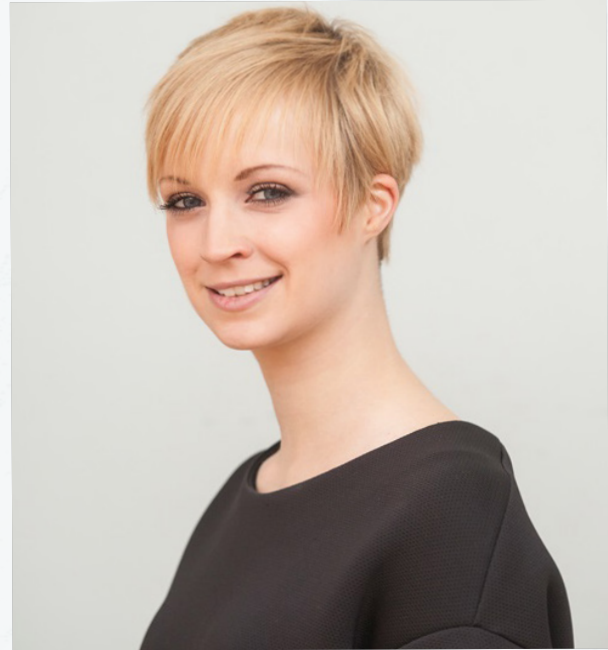
No two days are the same! The variety keeps it interesting – I can be doing anything from attending fashion shows, meeting with designers, organising exhibitions, researching objects in store, attending conferences, visiting other museums, working with schools and university groups, or talking to the public about items in our collection or treasured items that they own and are seeking advice about.

HOW DID YOU GET THIS JOB?

I studied history at university and then I did a MA in the history of dress. After that I completed internships with the V&A museum and the Royal Academy of Arts in London, and the Warner Textile archive in Essex, before being employed as an assistant curator at National Museums Scotland on a temporary basis. I had many other short-term contracts in the Scottish museums sector, before returning to the museum in a permanent post in 2013.

WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

I work with teachers, University lecturers and organisations like Zero Waste Scotland and Fashion Revolution.



HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Fashion is one of the most polluting industries on the planet. As the museum collects contemporary fashion, it is important that we consider how we can help educate visitors on the damaging impact fashion manufacturing and overproduction (leading to large volumes of waste) has on the planet. One way that we do this is by trying to work with and collect work by contemporary designers who are making every effort to produce clothing that is less damaging to the environment.

Assistant Curator, Aviation

Ian Brown

JOB DESCRIPTION

I am responsible for collecting, cataloguing, interpreting, displaying and looking after the aviation collection of National Museums Scotland.

SKILLS REQUIRED

Time management, taking initiative, problem solving, building relationships, verbal communication, developing a plan, empathising, positive attitude.

FAVOURITE PART

My favourite part of my job is working with the incredible collections we hold and the amazing stories they tell.

HOW DID YOU GET THIS JOB?

After leaving school I obtained a degree in History but spent several years working in retail, including as a warehouse manager. When the National Museum of Scotland opened I got a job as a Visitor Services Assistant there, helping visitors get the most from their visit. This gave me a great understanding of National Museums Scotland as an organisation which helped when I applied for my current job. I have also been researching aviation history for many years and have written several books, which gave me the subject specialist knowledge essential to getting my current job.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Transport, and in particular aviation, is one of the main sources of carbon emissions in modern society and one of the big concerns relating to climate change.

WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

I am working with the aviation industry, including airlines and companies such as Velocys, who are working to reduce the carbon footprint of aviation, to try and collect objects telling these stories.



Photograph by Neil Hana

Curator of Invertebrate Biology, with particular emphasis on Molluscs*

Sankurie Pye

JOB DESCRIPTION

Curator of Invertebrate Biology, with particular emphasis on molluscs, but I work with other marine invertebrate groups too. There are around four million (non-insect) invertebrate specimens within the National Museums Scotland collections. As a curator I manage, look after and promote these collections. This includes being able to find specific specimens, managing any associated data and developing the collection. Other tasks include identifying specimens, communicating with specialists and non-specialists, my own research, outreach activities, loans, answering enquiries and managing volunteers.

SKILLS REQUIRED

Attention to detail: This is really important when identifying animals, managing specimens and large amounts of data.

Fine Motor Skills: A steady hand for looking at tiny animals under a microscope. Good handwriting, especially for tiny labels.

Communication: with others in the museum team, researchers, the public and volunteers.

Problem solving: finding gaps in specimen information and working out how to find the information that is missing.

Computer skills: for communication and managing millions of data entries.

Teamwork.

FAVOURITE PART

I am most happy when I am working with the specimens in the collection sequence (getting more order into it), but that doesn't happen often! Fieldwork is also a good part of the job, particularly when it is sunny!

HOW DID YOU GET THIS JOB?

I did a degree in Marine and Environmental Biology and decided in my last term at university that I wanted to work in a museum. I became a volunteer in the Department of Natural Sciences while doing temporary work and cleaning to make money. When a job in the department came up, I was in a great position to apply.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

The collections can be used as evidence of the impact of climate change and a record of previous climate conditions. By making the collections available to inform scientific research, we contribute to the Science.



The research aspect of my job is currently focused on Scottish Saline Lagoons (with Fiona Ware). Within the lagoons there are specialist animals and plants that are adapted to live in the conditions found there. Rising sea levels will change the conditions within the lagoon and may threaten the survival of these species.

WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

My colleagues and other scientific researchers in Universities, Institutes, businesses and other museums.

**A mollusc is an animal that has a soft body, no spine, and often has a shell. They may live in the sea, on land or in freshwater.*

Learning Enabler in the Learning and Engagement department

Lucy Neville

JOB DESCRIPTION

I create and deliver learning resources and activities in our museums. I work with people of all ages (from newborns to people in their 90s and older). I work with groups such as schools, families and community organisations. It is my job to make the museum accessible, understandable and fun to everyone.

SKILLS REQUIRED

Communication skills to help everyone learn about our collections in a way that suits them.

Listening skills – I have to work with other departments to understand their research and present it to the public.

Teamwork – I work in a large team and it is important that we work together as well as with other departments in the museum.

Creative skills – I write workshops and create crafts for all sorts of people so I am always thinking creatively – sometimes even writing songs to help explain things in the museum!

FAVOURITE PART

Working with lots of different people every day.

HOW DID YOU GET THIS JOB?

I loved history at school and went on to study Modern History and Film Studies at university. I worked in retail for many years and got a job in the museum shop, which helped me understand more about how museums work. While working in retail I volunteered for various museums and projects and got a qualification in education. I kept volunteering which gave me the experience I needed for this job when it came up. Since starting this job I have also got a qualification in Conservation Education and Communication which helps me to understand and explain the issues around climate emergency and biodiversity.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Climate change can be very complicated and it is my job to help people of all ages understand how it applies to their life. The museum has so many collections which I can use to show multiple sides of the same story, this means I can make climate change interesting to lots of different people.



WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

I work with researchers (both at the museum and elsewhere) to get the most up to date information, also filmmakers to create projects. I also work with artists and others in the creative industries to come up with new and interesting ways to share that information.

Building Services and Energy Manager

Mark Drysdale

JOB DESCRIPTION

Working with and supporting a variety of colleagues in:

- strategic control of resources in planning and delivery of works
- coordinating large scale building projects
- preparing contracts
- promoting health and safety advice and guidelines
- Improving communication strategies across the organisation
- Working to reduce energy consumption and carbon emissions of the organisation.

SKILLS REQUIRED

Communication skills to help everyone learn and understand the need to reduce energy consumption and minimise or eliminate the production of greenhouse gases.

Listening skills – I have to work with other departments to understand their needs and ensure that we can deliver the required outputs in the most sustainable fashion.

Teamwork – I work in a small team to deliver the maintenance of the NMS Estate and it is important that we work together to get the best out of the resources available to us as well as ensuring the resources are delivered in the most efficient manner.

FAVOURITE PART

My favourite part of my job is problem solving and identifying the most efficient solutions.

HOW DID YOU GET THIS JOB?

I have been working in this industry for over 37 years, I studied Building Services Engineering (Mechanical Engineer) whilst I was an apprentice engineer and this has led to a very varied and eclectic career, from construction of new buildings to the project management of multi million pound projects.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

My job relates to climate change in two ways, one is that we have the ability to effect climate change through the reduction in our production of greenhouse gases and the other is that climate change and its impact on weather patterns has a considerable effect on how we maintain or buildings and protect them from damage from the increasingly severe weather.



WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

To carry out my job I regularly have to engage with specialist consultants, Scottish Government as well as other departments in National Museums Scotland to develop our strategies on climate change and sustainability.

Senior Curator of Transport

Meredith Greiling

JOB DESCRIPTION

I care for all forms of vehicles and associated objects in the transport collections at National Museums Scotland.

SKILLS REQUIRED

Communication, problem solving, attention to detail, computer skills, teamwork, writing.

FAVOURITE PART

Working with the collections; finding out stories about things and people connected to objects I look after, acquiring things to go in the collections and working on exhibitions.

HOW DID YOU GET THIS JOB?

I did a relevant first degree, and I did some voluntary work for a museum before graduating. After working in my first entry level curatorial job for a few years I did a Museums Studies master degree, and then got a curatorial job in my subject area. I did my PhD while working.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Transport has a major impact on pollution and the consequent climate emergency.

WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

I am in contact with transport providers of all sorts to keep up to date with changes in the sector, and sustainable transport is a big topic at the moment across all forms of transport.



Senior Curator, Modern & Contemporary History

Dr Sarah Laurenson

JOB DESCRIPTION

I am a Curator in a team who care for and research National Museums Scotland's modern and contemporary history collections, which includes Scottish social, cultural, political and military history. I work across the period from 1750 to the present, but have specific responsibilities for the collections from 1980 right up to today.

SKILLS REQUIRED

Day-to-day, the skills I use most are: communicating, critical thinking, storytelling, relationship building, attention to detail, collaborating.

FAVOURITE PART

The best bit of my job is being up close to objects – it is such a privilege to be able to see and handle the stuff of Scotland's past. I love being in the stores surrounded by the collections, and often completely lose track of time. I also really enjoy being out doing fieldwork, speaking with people about their lives and what objects mean to them, and collecting new things that help us understand the world around us today.

HOW DID YOU GET THIS JOB?

I got into my job via a wiggly sort of line, first studying fashion and textiles at university before choosing instead to specialise in the history of material things through more years of study. Throughout, I worked in museums and libraries in any role I could get my hands on (volunteer, curator, collaborator, researcher, trustee) to get a good grounding in the skills involved in working with collections. I've been in my current role for four years – it was a new post that happened to be my dream job and appeared at just the right time. In short, a mix of hard work and good luck.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

The main part of my role is contemporary collecting: seeking out objects that represent major social, cultural, political and environmental shifts in 21st century Scotland. As climate change is one of the biggest concerns of our time, it comes up in my work in many different ways. The types of objects I collect on this topic are varied, from protest banners carried by children in the schools strikes to wooden carbon-neutral skis made in Perthshire. My research and writing focuses on human relationships with the Scottish landscape and nature from the 18th century right up to today, which reveals a picture of the long view that I find really fascinating.



WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

Yes, all the time. They come from so many different sectors, industries and backgrounds that I won't even start listing them. One of the ongoing areas of my work is to do with the impact of climate change on Scotland's coastal communities and mountainous regions. Happily, that means I get to have the odd meeting on the beach or up a big hill.

Filmmaker at Edinburgh Film Company

Luke Moodley

JOB DESCRIPTION

I'm responsible for working with our clients and commissioners to film and produce our all of our film content. That includes meetings with people from many different industries, planning the content and working with our animator to bring those plans to life.

SKILLS REQUIRED

Listening is a hugely important at the beginning of the filmmaking process. There is usually a lot of information to distil into a film format and the better we understand the content and the people we're working with the better the films we can make.

Communication is also a big part of filmmaking. It's important to communicate what we're doing and how we might be able to put together a film, as well as managing our crew, timescales and schedules.

FAVOURITE PART

My favourite part of the job is certainly the human aspect. Meeting people from lots of different walks of life and getting to tell their stories, as well as, communicate them to many different audiences.

HOW DID YOU GET THIS JOB?

I first started filming in Brazil when I was working with a street children project in the city of Belo Horizonte and I made some short films to raise awareness and fundraise back in the UK. I continued to do more and more of this type of work, often travelling overseas while taking leave from my University job, until I decided to do it full-time when I moved to Edinburgh in 2012.

HOW DOES YOUR JOB RELATE TO CLIMATE CHANGE?

Through projects like this with National Museums Scotland. I am often working on film content which is focused on global issues such as climate change, population increases and threats to the environment. Whether that is a public information film or people's own stories. I'm always striving to use film as a means to inform and educate people about what is going on in the world.



WHO ELSE DO YOU WORK WITH THAT FOCUSES ON CLIMATE?

Recently we've been working on a series of short films for a European agency to promote careers in tidal and wind power as these industries look to provide greener and cleaner energy for the future. I've also recently worked on a research film showing how design and research in aviation can have a positive impact on reducing fuel consumption and emissions for large passenger planes.

QUESTIONS

- Which of these jobs do you think sounds interesting and why?
- Which of the jobs do you think match up with transferable skills that you have?
- What is your dream job?
- How do you think that job might be impacted by climate change in the future?
(for example professional footballers may have to consider carbon impact of long-haul travel for international tournaments, architects may have to design buildings which are more energy efficient, vets may see more cases of heat exhaustion in pets)

For more career information you can visit our careers webpage at nms.ac.uk/CareersResourcesforSchools

WITH THANKS TO

