

# ARCTIC WINDS

Creative Learning Resource Pack





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## Introduction

### About the Pack

This resource pack accompanies the Creative Learning Programme for the Arctic Winds Project. The pack provides some contextual research for play and development with secondary school students.

We encourage you to dip into the pack when you need to if you wish to do further work with your classes beyond the workshops included in the Creative Learning Programme. We also hope the pack to enable the lifespan of the programme to progress beyond the proposed end date of March 2022.



Part of the Arctic Winds Creative Learning Programme is in collaboration with Profilteatern, based in Umeå, Sweden.

[QR code is a link to Profilteatern's website]

### Schools involved:

Charleston Academy, Culloden Academy, Dornoch Academy, Forres Academy, and Tain Academy from Scotland and ... from Sweden.

### About Dogstar Theatre Company

Dogstar is a European touring theatre company based in the Scottish Highlands. We commission, produce and tour new plays by writers from the north of Scotland and elsewhere.

Dogstar now tours across the UK and internationally to a wide variety of venues., including: Denmark, Netherlands, Sweden, Poland, Ukraine, New York USA, Australia, Germany, Ireland, Wales, and England. Dogstar continues to tour to village halls in the Scottish Highlands and Islands as well as to city centre theatres.

Much of our work springs directly from the Highlands' defining characteristics: a stunningly beautiful and harsh natural landscape; a tumultuous and marginalised history; a shifting and changing population; a vibrant oral and musical tradition. Our productions speak to our audiences using some of Scotland's best actors, musicians, writers, directors and designers, collaborating with international artists and partners. For us, theatre is a place for debate and celebration, for ideas and entertainment, for a few laughs, a few tears, a challenge to the mind and a memorable night out. At its heart, its about communication between the actor and the audience. It can't exist without you.



## About Arctic Winds

*Arctic Winds* encompasses two thematically-linked new plays from the Highlands. Part 1 will see these plays rehearsed, produced and filmed for screenings in venues across Scotland and online. Part 2 will take place later in 2022 or early 2023 and will see the plays touring Scotland in repertoire.

*Nightlands* is the debut play by Jack MacGregor, an exciting new theatre maker from Inverness. *The Fallen Angels of the Moine*, is by the Highlands' most experienced and prolific playwright, George Gunn. Filming of the productions will take place at Universal Hall, Findhorn in February, directed by the outstanding filmmaker Brian Ross (*Circling A Fox, No One But Me, Shetland Lone Star*).

## The Plays

NIGHTLANDS – Jack MacGregor

“ Funny how you can get so convinced of your own greatness, that you think it's going to last forever. Then all that's left of you is memory, then ruins, then nothing.

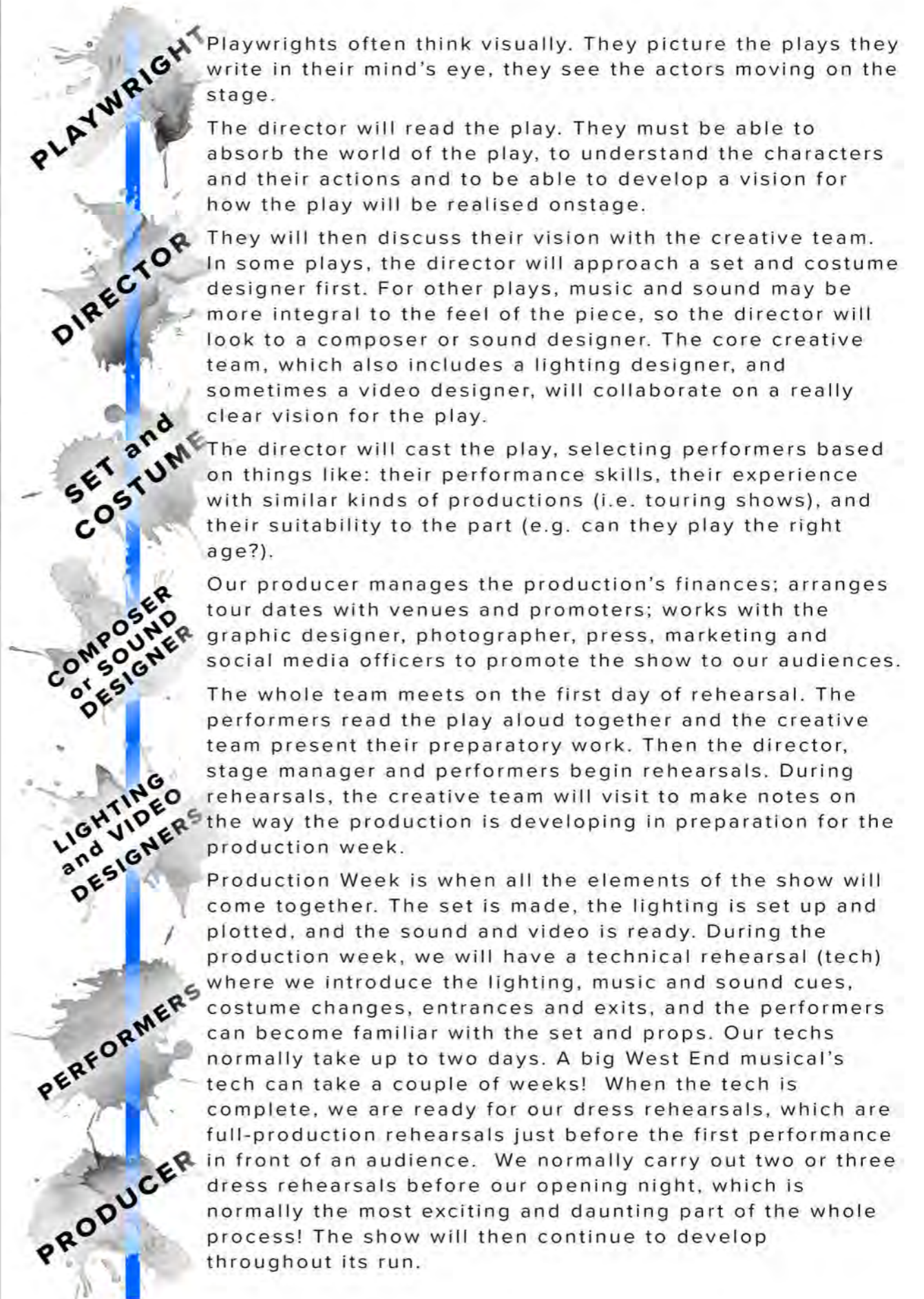
*Nightlands* is a dislocated environmental thriller which takes place in the extraordinary ex-Soviet ghost town of Pyramiden on the Svalbard Archipelago during a ferocious Arctic winter. Set in 1999 in the twilight of a decade of capitalist chaos in Russia and the dawn of the Putin autocracy, the ghost town's caretakers, an old man and a young woman, play out a generational conflict. Slava and Sasha are antagonistic representatives of opposing world views, he nostalgic for the collapsed communist past, she embracing the possibilities of the new world order. But as the Polar Night and its storms close in on them, they are forced to acknowledge both their need for and their rejection of each other. *Nightlands* is a powerful metaphor for hubris and self-destruction in the face of mighty natural forces.

THE FALLEN ANGELS OF THE MOINE – George Gunn

“ You are entering an age of loneliness, when no bird will be heard singing, nor a bee humming glad between flowers. Will you be able to live with the silence – the silence of extinction?

In the devastatingly beautiful and delicate bog of the Moine on Scotland's North Coast, a scientist, a crofter and a councillor, Cianna, Cait and Robbie, are confronted by a satellite company wanting to build a rocket launching site not far from the nuclear dump. Cianna monitors the land's health and the results are worrying. Cait has apocalyptic visions, and Robbie is possessed by the voices of those who control him. All the while, the Angels look down on them. Rich in poetry, myth and legend, *The Fallen Angels of the Moine*, is a wild tragicomedy about ordinary people grappling with the epic changes shaking our world as governments and business increasingly compete with nature & the implications this brings for human survival.

## From Page to Stage





# Nightlands

**The past and the present:** *Nightlands* employs the use of asides where the actors break the fourth wall and talk to the audience as themselves. This does two things: Firstly, it makes explicit the contemporary commentary on the events discussed in the play – the audience don't have to deliberate on what the 'meaning' of the piece is, and this allows them to spend more time really considering what the collapse of the Soviet Union, the arctic ghost town, and the rise of the Russian Federation means to us as a contemporary audience. Secondly, it draws attention to the construction of the play; the actors tell us simply at the start that it is just a story, that we are watching a show. This means the audience don't have to try to 'believe' in the characters and the story, instead they can spend more time analysing the performance and considering its moral / political positioning. Also consider how the use of lighting, sound and projection helps to reinforce the contemporary relevance of the events in the play.

SLAVA: --And  
Beat. They drink. SLAVA  
SASHA looks at her, his courage  
a little slurred.  
SASHA: You know... You are very beautiful...  
SLAVA: Fuck off.

The characters leave, the actors stay. There is an indication that the action has taken a pause again. SASHA ACTOR takes a wedding ring out of his pocket and puts it on in preparation for the next scene.

SLAVA ACTOR: You know, he's a singer?  
SASHA ACTOR: Sorry?

SLAVA ACTOR: He sings.  
SASHA ACTOR: That's got to be a joke.

SLAVA ACTOR: It's not. I've got a video of it.  
SASHA ACTOR: Show me the clip.

SLAVA ACTOR: Alright. Modern tech contrasts the period of the play.  
SLAVA ACTOR takes out their phone and searches for the video they are discussing. There is some consternation about wifi in the theatre, passwords, security, eventually the phone starts playing something only they can see. A video of Vladimir Putin singing 'Blueberry Hill' at a charity event in 2010. The video is projected over the space.

ASIDE ~ breaks the fourth wall

There he is.

SASHA ACTOR: His voice is so high when he speaks in English. "Blueberrji heel..."

SLAVA ACTOR: But he was what people thought they needed - and what they got was an autocrat. We were so caught up in our own problems with the War on Terror, the financial crisis, we barely seemed to notice Russia had stopped rebuilding and had started rearming. When we did notice them, it was as a joke, like this. We all have a laugh about the internet celebrity president who rides horses shirtless and fights bears with karate. In comparison to our leaders, he looked strong and exciting.

The music and video begins to distort itself wildly. Bombings in Chechnya, tanks in Georgia, the invasion of Crimea and jets over Syria. The images of a resurgent power.

No one really remembered the war in Chechnya, or the invasion of Georgia in 2008. We kept on holding the image of an affable tyrant, a crazy president for a crazy country, and ignored his unsightly blemishes, like when he ordered the death of Alexander Litvinenko in 2006. Just like that, an unknown KGB officer became one of the most powerful men in the world, destabilising countries at will and in control of the world's largest arsenal of nuclear weapons - and no one really cared until it was too late to stop it.

The music, the bombs, the jets, it all builds to a crescendo - then silence, followed by the sound of the wind.

Lighting, sound and projection show the contemporary relevance of the events in the play

Visible set and costume changes



## A History of Svalbard and Pyramiden

Starting in the 17th century, the Arctic islands were used as a base for whaling and walrus trapping. By the beginning of the 20th century, however, **interest had shifted to coal mining**. Up until that point, the archipelago belonged to no nation and was freely used by the Dutch, Danish, Norwegians, British and others but in 1920 a handful of nations—including Norway, the United States and Britain—created the Svalbard Treaty, which granted Norway sovereignty over Svalbard.

The Svalbard Treaty dictated that not all Norwegian laws applied on the islands, and that all signatories of the treaty have equal rights to develop and pursue commercial activities on the islands. Russia—and, eventually, more than 40 other nations—quickly became signatories.

Norway and the newly formed Soviet Union especially seized upon the opportunity to develop commercial pursuits on Svalbard. In 1936, the Soviets acquired the rights to use the coalfields at Pyramiden (named for the pyramid-shaped mountain looming over the valley settlement) and Barentsburg, about 60 miles south. At this time, the Soviets considered a contract in Pyramiden to be something of a promotion and privilege. In Pyramiden—much more so than some places on the mainland—quality of life mattered. Unfortunately, this all changed when the Soviet Union collapsed in 1991. There were shortages, low salaries and poor living standards. Then, in 1996, a plane returning to Svalbard from Moscow crashed near Longyearbyen and all 141 passengers aboard were killed, including three children and many of the mineworkers' family members.

On March 31, 1998, the last coal was extracted from the mine, and the approximately 300 workers who still lived there began shipping out. Coal mining on Pyramiden was never actually profitable but it has been stated that the Soviets maintained their operations there because it was their most western base.

The climate council states that coal is the **most polluting** source of energy production.

### CREATIVE PROMPT

What would it be like to be working in an arctic tundra when supplies, earnings and quality of living are declining? How would that make you feel about the people in charge? What kind of conflict might arise?



## Pyramiden in a Modern Context

Pyramiden is now marketed as a tourist destination; a ghost town and relic of the soviet past. The architecture is beautifully preserved because of the climate; the remaining six inhabitants keep the town running for its few international visitors.

America, China and Russia are now making moves to capitalise on the devastating effects of the climate crisis: the disappearance of arctic ice.

## New Cold War Brews as Arctic Ice Melts

"This is America's moment to stand up as an Arctic nation and for the Arctic's future," Pompeo said. "Because far from the barren backcountry that many thought it to be ... the Arctic is at the forefront of opportunity and abundance."

For many scientists, analysts, and native people, the rapid and severe transformations unfolding in the Arctic, including ice loss and melting permafrost, are considered negative consequences of climate change, omens of worse to come. But Pompeo recast those omens as opportunities.

Disappearing sea ice could increase trade, he told the council, by allowing cargo ships to cross the Arctic via the Northwest Passage and the so-called Northern Sea Route.

This fresh interest in the Arctic—Pompeo's and the administration's—can be traced to bold and aggressive moves by Russia and China, both of which have made significant investments in northern gas and oil infrastructure. Russia has also greatly expanded its military forces in the Arctic, becoming, by most measures, the dominant cold-weather player. And China has declared itself a "near-Arctic state," articulating its desire for a seat at the table in polar decision-making.

Pompeo's speech played directly into a narrative of increasing competition—and potential

military conflict—that has been building for years between the countries. The storylines focus on melting ice and increased shipping, troop movements, and new bases but rarely focus on indigenous concerns, wildlife, or even the larger climate disruptions that could follow.

"Not only will it hit us first, but it's harder for us to deal with it because we're so isolated and our resources are so limited," said Joe Savikataaq, premier of the Canadian province of Nunavut. "We're up here, and it feels like we're up in no-man's land."

"The summer of 2007 saw the largest Arctic ice-loss in human history and was not predicted by even the most aggressive climate models," says Jonathan Markowitz, assistant professor of international relations at the University of Southern California. "This shock led everyone to suddenly understand that the ice was rapidly disappearing and some nations decided to start making moves."

In the decade since that "shock event," the Arctic has been transformed by rising temperatures, vanishing ice, and international attention. Entrepreneurs, prospectors, and politicians have all turned north, recognising that less ice means more access.







### CREATIVE PROMPT

Imagine that you are part of a community whose land is disappearing (due to ice melting / sea rising / drought); what conversation might you have with a politician who instead of investing in climate renewal, is wanting to capitalise on the new opportunities for travel and trade? How could you make things change?



### Generational Conflict and Connection

Slava and Sasha are a generation apart. *Nightlands* takes place in 1999, at the end of a decade of chaos and unbridled capitalist anarchy in Russia. The 1990s saw the rise of super-rich oligarchs who effectively controlled the Russian economy. At the same time, the mass of ordinary Russians became significantly poorer. *Nightlands* closely precedes the ascent of Vladimir Putin to the Russian presidency. Putin has remained in power ever since. The apparent victory of capitalism, with an increasingly rich few who control the increasingly poorer majority, was seen by some in Russia, including Putin, as a humiliation for the country. Putin was determined to restore Russia's former status as a leading world power, something which Sasha yearns for in *Nightlands*. The chaos and uncertainty of the 1990s (the decade when Slava has grown into an adult) have made her believe she has the freedom to find a better life, away from her homeland. Today, there is considerable tension between the Russian Government of Putin and the West (Europe, the USA and their allies). This is currently most obvious in the recent Russian troop build-up on its border with Ukraine following Russia's 2014 invasion of Eastern Ukraine and Crimea.

Sasha was born around the time of the Second World War. This was the largest conflict in world history, with by far the greatest suffering and loss of life taking place in Central & Eastern Europe and Russia. Estimates put the number of Russian people who died at around 20 million, proportionately more than 16 times the number of losses suffered by the British. So Sasha grew up with the memory of 'The Great Patriotic War' as a central symbol of Russian and Soviet greatness and sacrifice. He knew only the communist regime well into his middle age. He is nostalgic for it. This is a common feeling among Sasha's generation as many remember a time during Soviet Communism where everyone had 'enough' and saw much harder times during and after the fall of the Soviet Union.

Slava was born in the 1970s. Her country has been in a state of upheaval and uncertainty since she became a teenager. Her view of the past is very different from Sasha's. She sees the Communist regime as the one that led to the current chaos. She sees her job at Pyramiden as a way of escaping that; a stepping stone to a new life away from Russia. In a way, she is simply following the individualism which has dominated Russia's economy and culture throughout the 1990s. Ordinary Russians have watched as wealth and material success have become the celebrated norm in their country, just as it is in the West.

### CREATIVE PROMPT

What other kinds of conflicts can arise from different generations? Think about you and your parents or grandparents; what kinds of things might you disagree on? How might that change when you are their age; what conflict do you think you might have with a younger generation in the future?





CAIT: What if the big man, up there, isna there at all? Was never there. He was always somewhere else, drillin for oil.

CIANNA: Up there is space. Infinite space and time. The funny thing is the further you look out in space the further you go back in time, as if time was running backwards.

CIAT: Just like The Moine.

CAIT turns and walks across the stage. She looks at a bothy which has miraculously appeared.

CAIT: (Contd.) How strange. I've been comin up here since I wis a lassie an I canna mind seeing this bothy before.

Magic colours and shapes appear. CAIT moves over to the bothy and opens the door. Strange music and light pour out. CAIT moves into the bothy. CIANNA, despite her better judgement, follows her. The images fill the stage. The music fills the sky.

CIANNA: My god. What is this place?  
CAIT: Is e seo taigh nan aislingean. The hoose oh dreams. Please come in. Feuch an tig thu a-steach.

CIANNA moves and sits beside the fire which has miraculously appeared in the grate. CAIT sits opposite. Slowly CIANNA turns into BELLE O RANGAG. There is a lot of colour and music.

BELLE: Bruidhnidh mi riut sa Bheurla. I will speak to you in English as you do not have enough Gaelic to get to the truth. I am Belle Stewart o Rangag. Show me the stone.

the playwright doesn't give us any answers

CAIT goes into her pocket and hands BELLE the white stone, the Clach Moine. BELLE clutches CAIT'S hand so that the stone is between them.

BELLE: (Contd.) Feumaidh e an dà làmh againn. It will need both our hands.

CAIT: What will?

BELLE: The future.

The bothy fills up with white light.

BELLE: (Contd.) You are the daughter of the dusk and the dawn – nighean rionnag, a star quine. You walked the Moine in the golden times, then when the time of mixed metal came you went into the bog. Now you return. You will walk again. Tha mi air a bhith a 'feitheamh riut. I've been waiting for you.

Directions are deliberately open to allow the director to make creative decisions.

How might you show this?

## Fallen Angels of the Moine

**Showing the fantastical:** in Fallen Angels, people become weightless, transform into Baba Yagas, bothies appear from nowhere, and a communicative crow hops around; how might you show this onstage? **Multi-role** is used throughout the performance, sometimes the writer demands the use **masks or accents** to distinguish between characters. See also the vivid use of **lighting and sound** to create atmosphere and setting.

Even the hints to light/sound are fantastical



## Europe's Biggest Blanket Bog

The Flow Country" is an area of deep peat, dotted with bog pools, that forms the heart of the Caithness and Sutherland peatlands. Covering about 200,000 hectares, it's more than twice the size of Orkney. Altogether, this corner of Scotland holds more than 400,000 hectares of blanket bog, making it the largest expanse of this remarkable, wild habitat in Europe.

Blanket bog only forms in cool places with plenty of rain. The few plants that can grow here don't rot away, but build up to form deep layers of peat. The Flow Country's bogs have been growing for over 10,000 years, ever since the glaciers melted away at the end of the last Ice Age, and the peat is now up to 10 metres deep.

All green plants absorb carbon dioxide from the atmosphere and use the carbon to build the plant's structure. When the plants die, the carbon is released back into the atmosphere – unless the plant material is preserved in some way.

That's why peat bogs are so important as a defence against climate change. Because the moss and other plants don't fully decay, bogs act as a carbon store or "carbon sink". It is a slow process: forests can store carbon more quickly than peatland, but most of it is released when the trees rot away or are burnt as fuel. Many peatlands have been growing undisturbed for thousands of years, so although they cover just 3% of the world's land area, they hold nearly 30% of all the carbon stored on land. The Flow Country's peat bogs alone store about 400 million tonnes – more than double the amount in all of Britain's woodlands.

But if the bog dries out or is damaged, the carbon is released as carbon dioxide, adding to the effects of climate change. This is why it is so important to restore peatlands as in the UK as a whole they are a huge source of carbon dioxide emissions.

It's been estimated that the carbon stored in Scotland's peatlands represents 100 years' worth of the country's emissions from burning fossil fuels: it would be disastrous if it was released.

## Conflicts Around the Spaceport

In recent decades, both Scotland and the UK have developed the capacity to develop, design and build satellites for communications, surveillance and other purposes. This has led to the current situation where there are several sites being developed as spaceports (rocket launching sites), places where these satellites can be sent into orbit.

Scotland contains sites with the best access to the kinds of orbits the space ports are designed to facilitate without flying over land inhabited by humans. Three key areas emerged when the government was looking into this – Scolpaig in North Uist, the Moine Peninsula in Sutherland and Saxa Vord in Shetland.

In July 2018, the UK government decided that the Moine peninsula bid was the best option. The £17.5m facility - called Space Hub Sutherland - is expected to be used for launching small satellites and was initially granted £2.5m from the UK Space Agency. In August last year, Highland Council granted HIE planning permission for the site and for up to 12 satellite launches a year.

Scotland has a versatile and adaptable space sector with close collaboration between government, industry and academia. We have an innovative and diverse engineering base with companies competing in international markets. Scotland is in a great place to consolidate these existing strengths to inspire skills development and STEM take up. The growing space sector focuses upon high-tech, high-skill and research and development intensive areas, creating a Scottish space industry turnover of £254

million.

Almost one fifth of all UK jobs in the space sector are based in Scotland. Scotland produces more small satellites than any other country in Europe. We aim to be the first country in Europe to provide a complete solution for the manufacture and launch of small satellites, supporting satellite and environmental data analysis and critical earth observation. Furthermore, more small satellites are built in Glasgow than any other place in Europe. Findings from the Size and Health of the UK Space Industry 2018 report show a 27% increase in the number of space organisations in Scotland.

## A bitter row over the multi-million-pound spaceport planned for Sutherland has split a rural crofting community.

Campaign group Protect The Mhoine (PTM) has been set up to oppose the ambitious proposals for what was to be the UK's first satellite launch site at Melness, near Tongue, but any delay could spark a space race in the north.

Opponents fear it would impact on the environment, archaeology and roads, have a potential risk to the public, and create noise – while some crofters have raised issues over land ownership.

The land designated for the spaceport is known as the Mhoine and is owned by Melness Crofting Estate, a collection of around 80 crofters, but a divide has developed within its own board.

Any legal dispute could seriously delay the project, opening the door for competing space centres to beat Sutherland to being the first to launch satellites.

image @  
[www.iucn-uk-peatlandprogramme.org](http://www.iucn-uk-peatlandprogramme.org)

This includes Shetland, where backers of a privately-financed project in Unst hope to be operating by 2020.

Roy Kirk, HIE's spaceport project director: "Melness was identified by UKSA as the preferred site and approved a £2.5m grant to HIE towards the facility's development.

"We believe the spaceport will bring many benefits for the local economy and community, notably through rural job creation and community resilience."

HIE said they expect the new spaceport to employ about 40 people directly and support about 400 jobs in the region.



## CREATIVE PROMPT

*Fallen Angels of the Moine* uses mythical creatures to emphasise the larger impact of land loss: we lose parts of our history and culture when large areas of archaeological and environmental concern are developed on; how could you use other myths and legends in this way?





## Land Use and Exploitation in Northern Scotland

A great way to learn about this through theatre is the famous Scottish play: *The Cheviot, the Stag and the Black, Black Oil* (Written by John McGrath and first produced by 7:84 in 1973)

The exploitation of Scottish wilderness has been going on for centuries. The most famous historical examples of this are the Highland Clearances and the development of large shooting estates for the hunting of wild deer.

### The Highland Clearances (1750-1850CE)

George Granville Leveson-Gower, later duke of Sutherland, was the catalyst for notorious evictions that took place from about 1810 to 1820. Advised that his interior lands were best suited for sheep raising and were little fit for human habitation, he evicted thousands of families, burning their cottages and establishing large sheep farms. The evicted tenants were resettled in coastal crofts, frequently on only marginally cultivable land. They were forced to make their living by collecting and smelting kelp (a source of potash and iodine), something of a boom industry at the beginning of the 19th century, or by fishing, an occupation that was foreign to them. Other landowners in the Highlands followed that eviction model, though some focused on rearing cattle rather than sheep, whereas still others resettled the evicted farmers on crofts where highly labour-intensive cropping was the objective. Evictions were renowned for being violent and aggressive and many people died in fights and fires.



### Deer Forests (19thC.)

In the 19th Century there was a boom in the popular sport of deer hunting among the Scottish aristocracy. Many landowners promoted the breeding of deer in 'deer forests' so that they could be hunted for sport and profit. There are a number of socio-economic impacts that this pastime has had since its popularity almost 200 years ago, but the most shocking is the environmental impact that 'the deer problem' has on Scottish woodland. Deer numbers across Scotland have doubled to almost a million now from 500,000 in 1990. At any one time on Scotland's national forests and land, there are up to 150 million young trees vulnerable to damage from deer – and the cost of the damage done is several million pounds annually. The current high levels of deer numbers pose a particular threat to establishing young trees and areas of forest regeneration which are a vital part of Scotland's response to the climate emergency. It can also be ruinous to biodiversity projects and also poses a threat to the overall health of the herd, which in winter could struggle to find enough food and may result in many animals suffering a slow death from starvation.



### CREATIVE PROMPT

What other examples of land exploitation can you find if you research and who are the main characters in these events? Consider how *Fallen Angels* uses singular characters to represent huge organisations, like Parker and Dick Nectar.

### Gaelic Culture

Scottish Gaelic belongs to the Celtic family of languages and is closely related to Irish Gaelic and Manx.

Irish Gaelic settlers over 1500 years ago brought the language to Scotland and it quickly spread from its base in Argyllshire. At one time almost all Scottish people spoke Gaelic but it began to decline in the Middle Ages (5th-15thC. CE) as the Scots language became more popular in the south-east.

It remained most popular in the Highlands and Islands, especially during the 14th and 15th Centuries. After this time, the influence of the Lords of the Isles decreased which resulted in fewer people retaining the language. Then, in the 17th Century the Scottish Parliament's Statutes of Iona undermined the language further on the grounds that Gaelic in itself was one of the "chief causes of barbarity" in the Highlands and Islands.

In the 18th and 19th Centuries, economic hardship forced people to migrate south, away from the Gaelic-speaking Highlands. Gaelic was not taught in schools after the establishment of a national education system so it became a matter of heritage.

Gaelic has been spoken in Scotland for more than sixty generations and despite its decline, around 65,000 people still speak the language.

### CREATIVE PROMPT

*Fallen Angels* uses Gaelic to highlight the damage that land exploitation has on our history and culture. What other parts of Scottish history and culture could you use and how would you do this?





## Scottish-Swedish Connections

### Indigenous Languages

We will be interviewing a Gaelic-speaker late in January for a more personal account of Gaelic Culture. This will be included in a redraft of this pack.

### The Sámi

The Sámi people (also Saami) are an indigenous people of northern Europe inhabiting Sápmi, a cultural region that overlaps with other regions. The Sami make up 2.5% to 5% of the total population in the Sápmi area, which today encompasses parts of northern Sweden, Norway, Finland, and the Kola Peninsula of Russia. The Sámi have co-existed with their neighbors for centuries, but for the last two hundred years, especially during the second half of the 20th century, there have been many dramatic changes in Sámi culture, politics, economics and their relations with their neighboring societies. The sami were subjected to racial biology by the state such as skull measurements. During the late 20th century, conflicts broke out over the use of natural resources, the reaction to which created a reawakening and defense of Sámi culture in recent years. Of the eleven different historically attested Sámi languages (traditionally known as "dialects"), nine have survived to the present day but with most in danger of disappearing too.

### The role of indigenous peoples in combating climate change

Until the twenty-first century, indigenous peoples were viewed as victims of the effects of climate change, rather than as agents of environmental conservation. Representatives of indigenous peoples have in fact since 2008 been actively seeking a role in contributing to combating climate change through their participation in international environmental conferences, as well as by means of activism and political engagement at local and national levels.

Using examples from the Amazonian region in the east of Ecuador, home to indigenous communities such as the Huaorani, Sápara and Sarayaku Kichwa originary peoples, it is clear that indigenous peoples, particularly forest dwellers, have a dual role in combating climate change.

Colonised forest peoples have continued to resist the occupation and deforestation of lands they have lived in for centuries

A number of indigenous forest communities have since the 1990s become aware of their responsibility to protect the forests in the interests of combating climate change. They have recognised the potential for their decision-making power at a local and global level that may contribute to saving the planet.

In the last 10 years indigenous peoples' representatives have been collectively engaged in lobbying for inclusion in intergovernmental climate change negotiations and to have decision-making power at the United Nations.

It calls on governments and organisations engaged in the extractive industries, and in other processes of modernisation and development, to respect the right of indigenous peoples not to develop and to choose for themselves the level of their integration into the global economy and polity. Their choice not to develop, not to have access to the modern world through roads, for example, is itself a contribution to protecting the rainforest and reducing greenhouse gas emissions.

### 'Green' Industries

Scotland actually has a **hydroelectricity** programme that dates back as far as the 1950s, when we began using our rivers, lochs and waters to generate electricity. Today, the Orkney Islands are the epicentre of the marine energy industry and are home to the world's only accredited marine energy laboratory. The European Marine Energy Centre (EMEC) is an international hub, enabling collaboration to harness the power of the sea all around the world. Orkney was chosen as the site because the environment and weather conditions here make it the ideal location for researching and developing all kinds of marine energy projects.

Scotland also showcases the world's first floating offshore wind farm, 25 km off the coast of Peterhead – Hywind. Comprised of five giant turbines, the blades of these mammoth offshore generators are being propelled by Scotland's fierce North Sea wind. This farm alone generates enough renewable energy to power around 20,000 homes.

Hydrogen has also taken the headlines recently as a key part in Scotland's plans to go net-zero by 2045.

“A trailblazing hydrogen storage project near Glasgow has today been backed by nearly £10 million in UK government funding – helping create high-skilled jobs and drive progress towards decarbonising the UK transport sector.

The £9.4 million cash boost will see the Whitelee green hydrogen project develop the UK's largest electrolyser, a system which converts water into hydrogen gas as a way to store energy. The state-of-the-art facility will be able to produce enough green hydrogen per day – 2.5 to 4 tonnes – that, once stored, could provide the equivalent of enough zero-carbon fuel for 225 buses travelling to and from Glasgow and Edinburgh each day.

Energy and Climate Change Minister Greg Hands said:

Projects like these will be vital as we shift to a green electricity grid, helping us get the full benefit from our world-class renewables, supporting the UK as we work to eliminate the UK's contribution to climate change.”



## Sweden

Sweden is well known for its renewable energy production, in fact hydropower accounts for about 45% of Sweden's power generation. What is less known is that 80% of large-scale hydroelectric power generation is located in Sápmi – that is, on traditional Sámi lands. We have included this information as we find that it closely ties into the issues of land use and exploitation that is discussed in *The Fallen Angels of the Moine*. There is a really vital ethical consideration in this issue about the urgent need for renewable energy versus the importance of recognising indigenous voices and respecting their needs and cultures.

The expansion of hydropower was carried out during the first half of the twentieth century as part of the colonisation of Sápmi, which the Sámi had little-to-no say in. Historical studies have documented the consequences of the hydropower expansion, such as loss of culturally important sites, drenching of reindeer pastures and destroyed fisheries. In a new study, by the Swedish University of Agricultural Sciences (SLU), we also show how hydropower has far-reaching consequences for reindeer husbandry in the present, for example by fragmenting pastures and obstructing migration routes.

In line with an increasing mobilisation within the Sámi population and growing recognition of the rights of Indigenous People there are many unresolved issues that the Swedish state and hydropower companies must address.

Right now, and in coming years, there may be specific opportunities to address some of these issues. From 1 January 2019, new regulations have applied to hydropower, with the aim of securing modern environmental permits according to Sweden's Environmental Code, and thus the rules that follow from EU law. Among other things, a review of existing hydropower plants will take place in accordance with the new regulations. This should provide authorities and companies with the opportunity to focus on at least some of the injustices and damages that the Sámi have suffered as a result of the hydro-projects.



## Climate Change

### Scotland

## The Impacts of Climate Change on Scotland

- Scotland's 10 warmest years on record have all occurred since 1997.
- The average year in the last decade (2010-2019) was 9% wetter than the 1961-1990 average.
- Average sea level around the UK has risen by approximately 4 mm/year since the start of the 20th century.
- 2021 has already seen record breaking heatwaves, devastating wildfires and flooding events across the globe.
- The number of disasters caused by weather, climate or water extremes over the last 50 years has increased by a factor of five.

Impacts of climate change in Scotland include increases in flood risk, coastal change, damage to buildings and infrastructure, and increased prevalence of pests and diseases in the natural environment.

Climate change is also a key driver of the nature emergency - it is the single greatest threat to Scotland's habitats, whether they're found on our mountain tops or our seabeds. Some habitats will be directly affected. More often, climate change will alter the intricate ecological balances that let plants and animals grow and thrive.

It's likely that Scotland will lose some species whose preferred climate is no longer available because of climate change. For example, Arctic charr, a cold-loving fish, will almost certainly decline in warmer conditions.

Commercially important species may also be lost. For example, Corsican pine is already being affected by red band needle blight, a disease caused by a fungus that thrives in warmer and more humid conditions.

New species moving to Scotland We're already seeing new species in Scotland. Some are coming from the south as our climate becomes more suitable for them, like the nuthatch. Other species introduced by people - e.g. to parks and gardens - will likely spread into the wider countryside as our climate grows warmer.

Most new species will have little impact on our existing species. But some will outcompete existing species and become problem invasive species. Invasive species can have serious impacts, and for some habitats - such as freshwater - they are seen as one of the biggest issues related to climate change.

Invasive species previously introduced to Scotland may also become more of a problem. For example, rhododendrons may shade out our native woodland plants even more as our climate becomes warmer and wetter.

Some new species will be pests or cause disease. Existing pest species may also become more widespread or damaging in a new climate.



## Sweden

While for Scotland, we focused on the impacts of climate change on the country, for Sweden, we decided to cover an example of the effects of industry on the climate. Like Pyramiden, Sweden has a history of mining that continues in the present day.

# The Impacts of Mining on the Environment in Sweden

The mining industry has a huge impact on the environment with disused mines leaking toxic substances into rivers. The Mounio River runs into the Gulf of Botnia; a gulf severely struck by high rates of toxic substances in the seal population as well as the Baltic small herring population. The (Baltic) small herring in the Gulf of Botnia is so full of the toxic substance dioxin, that it would not be allowed to be sold in stores, if it had not gotten a permanent exception from the EU parliament because it is the fish being used for the Swedish traditional dish "surströmming", fermented Baltic herring that is.

Another example of the impact of mining on the environment was the Boliden-Arica scandal. The company name comes from the Boliden mine, some 30 km northwest of the Swedish town of Skellefteå, where gold was found in 1924. It was once Europe's largest and richest gold mine, but has since 1967 been defunct. Between 1984 and 1985, Boliden shipped approximately 20,000 tonnes of smelter sludge (arsenic-rich toxic waste) to Chile. The waste was supposed to be processed by Chilean company, Pomel, but some of the toxic waste was in fact dumped near to the desert town, Arica where, in the following years, high rates of cancer and birth defects were reported.

The environmental impacts of mining in general have been well documented; air and water pollution from the lead, arsenic, cadmium, and other toxic elements that are exposed to the elements during mining. This can damage the health of nearby human settlements and wildlife. Mining can also leave great scars on the landscape, disrupting the growth of natural vegetation, which can have a disastrous effect on the local ecosystem.



## Further Reading

### Pyramiden

<https://www.nationalgeographic.co.uk/travel/2019/02/singing-ghosts-svalbard>  
*A colourfully descriptive tourist's account of Pyramiden.*

<https://www.smithsonianmag.com/travel/soviet-ghost-town-arctic-circle-pyramiden-stands-alone-180951429/>

*A helpful and comprehensive history of Pyramiden.*

<https://www.nationalgeographic.com/environment/2018/10/new-cold-war-breeds-as-arctic-ice-melts/>

*Article on further exploits of the climate crisis in the Arctic.*

<https://aeon.co/videos/pyramiden-population-6-the-soviet-ghost-town-frozen-in-time-high-in-the-arctic>

*A short film about Pyramiden.*

<https://www.britannica.com/story/why-did-the-soviet-union-collapse>

*A comprehensive overview of the factors that precluded the collapse of the Soviet Union.*

<https://www.wilsoncenter.org/article/there-really-putin-generation>

*The 'Putin' generation and activism.*

### Coal

<https://www.climatecouncil.org.au/killer-coal-just-how-bad-are-the-health-effects-of-coal/>  
*Climate Council on the environmental impacts of coal.*

### The Moine

<https://www.pressandjournal.co.uk/fp/news/highlands/1598851/highland-crofting-community-split-by-plans-for-multi-million-pound-spaceport/>

*Article about the conflicts around the building of a Spaceport on the moine.*

<https://www.theguardian.com/uk-news/2020/oct/09/remote-scottish-peninsula-could-be-host-to-spaceport-two-years-mhoine-peninsula-in-sutherland>

*Brief article on spaceport plans.*

<https://www.theflowcountry.org.uk/>

*About the blanket bog.*

<https://www.theguardian.com/uk-news/2019/mar/21/danish-billionaires-anders-and-anne-holch-povlsen-say-plan-is-to-restore-scottish-highlands>

*An insight into the landowners who opposed the plans to build the spaceport.*

### Scotland and Space

<https://www.bbc.co.uk/news/uk-scotland-48119118>

<https://www.gov.scot/policies/manufacturing/space-sector/>

<https://www.gov.scot/news/scotlands-gbp-4-billion-space-sector/>

### Indigenous Voices & Climate Change

[https://www.highland.gov.uk/site/gaelic-toolkit/toolkit/gaelic\\_history/index.html](https://www.highland.gov.uk/site/gaelic-toolkit/toolkit/gaelic_history/index.html)

*A history of Gaelic*

<https://www.nature.com/articles/palcomms201785.pdf>

*An article about the importance of indigenous voices in conversations about the climate crisis.*



### **Scotland and Climate Change**

[https://www.environment.gov.scot/our-environment/climate/changing-climate/Climate change in Scotland.](https://www.environment.gov.scot/our-environment/climate/changing-climate/Climate%20change%20in%20Scotland)

<https://www.nature.scot/climate-change/climate-change-impacts-scotland/impacts-species>  
*Scottish species that may be lost due to climate change.*

### **Scotland Green Industries**

<https://www.scotland.org/about-scotland/scotlands-stories/renewable-energy>  
*About Scotland's renewable energy.*

### **Scotland Land Exploitation**

<https://www.nature.scot/professional-advice/land-and-sea-management/managing-land/forests-and-woodlands/history-scotlands-woodlands>  
*A brief overview of the history of Scottish woodland.*

<https://www.britannica.com/event/Highland-Clearances>  
*About the Highland Clearances.*

<https://forestryandland.gov.scot/news-releases/deer-numbers-placing-unprecedented-pressure-on-environment>  
*About the impact of deer on the environment.*

### **Swedish Industry**

<https://arcticanthropology.org/2014/01/13/the-mining-situation-in-sweden-from-an-environmental-perspective-a-few-examples/>  
*Environmental impacts of abandoned mines.*

<https://www.worldatlas.com/articles/what-is-the-environmental-impact-of-the-mining-industry.html>  
*Environmental impact of mining generally.*

<https://www.sei.org/perspectives/sami-lands-and-hydroelectric-power-in-sweden-opportunities-to-redress-injustice/>  
*Hydropower and Sápmi.*

[https://en.wikipedia.org/wiki/Boliden\\_AB](https://en.wikipedia.org/wiki/Boliden_AB)  
*The company name comes from the Boliden mine, some 30 km northwest of the Swedish town of Skellefteå, where gold was found in 1924. It was once Europe's largest and richest gold mine, but has since 1967 been defunct.*

<http://toxicjustice.org>  
*Boliden shipped approximately 20,000 tonnes of smelter sludge to the Polygono area in Arica between 1984 and 1985. The waste derived from Boliden's Rönnskär arsenic plant in Sweden and was sold to a Chilean company, Promel, for processing.*

<https://www.svt.se/nyheter/lokalt/vasterbotten/nu-saneras-blaikengruvan-ett-sar-i-naturen>  
*Link from Swedish state television*

<https://www.theguardian.com/business/2021/dec/29/northvolt-rolls-out-europes-first-gigafactory-era-car-battery>  
*Northvolt, battery gigafactory in Skellefteå, Västerbotten*





# Arctic Winds Creative Learning Resource Pack

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