UWS Climate Ready

Adaptation Plan 2018 to 2021

UWS UNIVERSITY OF THE WEST of SCOTLAND

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Introduction

Extreme weather and climate change threaten to damage UWS premises and interfere with the systems we rely on for day-to-day business continuity. Interruptions to transport, power and communications infrastructure may disrupt our core functions. Managing our weather and climate change risks, through adaptation, makes good business sense. To help avoid the costs and consequences of extreme weather and climate change we have developed this Plan. Developing and implementing our Plan allows us to understand our vulnerability to current and future climate change, to recognise and assess the risks and also to identify research opportunities to further advance knowledge and understanding of our changing climate. Our plan is a clear demonstration that we are prepared to contribute to Scotland's adaptation commitments, and to increase the resilience of our university.

Need for an Adaptation Plan

- Legislation: The Climate Change (Scotland) Act 2009 established the Public Bodies Climate Change Duties which came into force on 1 January 2011. It requires that Public Bodies exercise their functions in a way best calculated to deliver any statutory adaptation programme
- Cost-savings can be achieved if campus infrastructure is routinely maintained and upgrades are made through pro-active planning rather than forced repairs brought about by extreme weather events.
- Reputation: poor resilience can impact on business continuity with potential for building or campus closures.
- Student experience: providing high quality resilient campuses will enhance the student experience.
- A planned approach places us in a strong position to increase resilience to potential threats and take advantage of research and other opportunities presented by climate change.
- Engaging with local stakeholders to implement actions allows costs to be shared.

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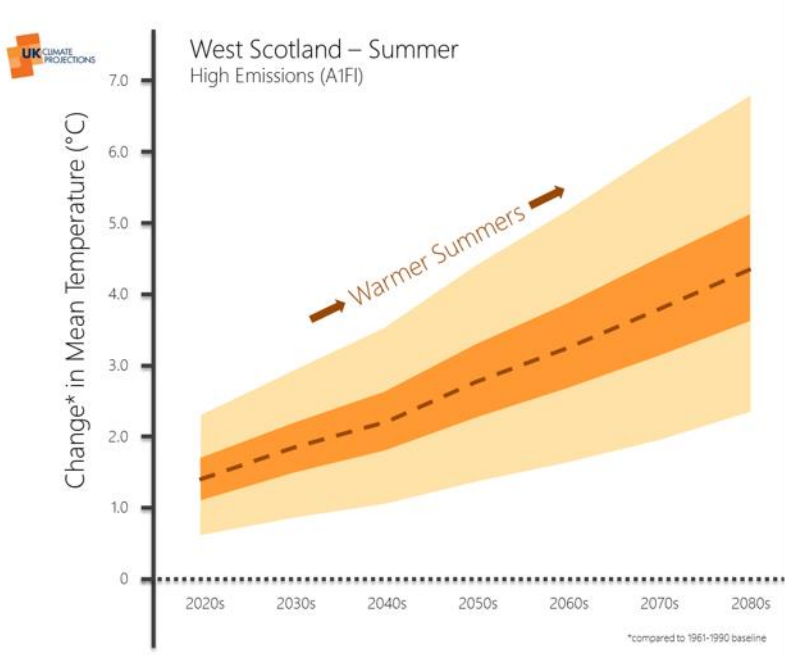
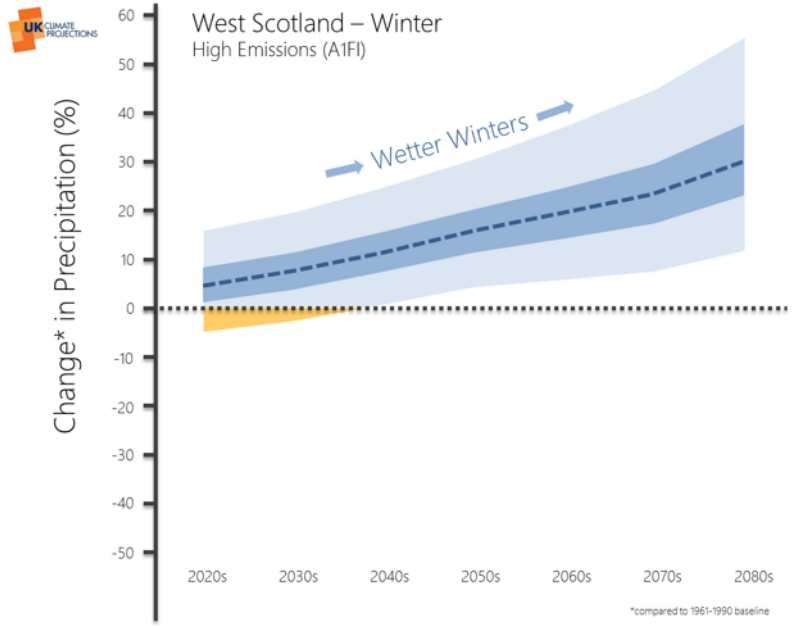
Climate Trends

Recent climate trends demonstrate that Scotland's climate is changing, over the last few decades it has become warmer and wetter, with an increase in total rainfall (especially in winter). Severe weather events have already impacted many aspects of society such as buildings, health, agriculture, transport, water resources and energy demands. Adaptation Scotland provide the following projections:

"We can expect future changes in climate to be far greater than anything we have seen in the past. Key long-term climate change trends for Scotland are:

- Weather will remain variable, it may become more variable
- Typical summer is hotter and drier
- Typical winter / autumn is milder and wetter
- Sea level rise"





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Climate Change risks at UWS

We have consulted with UWS staff and students and our partners at Ayr campus, SRUC, in the development of this plan. Stakeholders identified the climate change risks with the greatest potential to impact on UWS and also those that presented the greatest opportunities.

The following climate change impacts were identified, in order, as having the most significant impact for UWS. It should be noted that the severity of the impact will differ from campus to campus, for example coastal evolution is a greater threat at Ayr campus and the potential for extreme weather events to damage buildings is more likely at Paisley campus due to the mixed age and condition of building stock. (*Graphics and risks sourced from Adaptation Scotland.)*

Extreme weather events are projected to increase, which may lead to an increase in building damage and insurance losses. Damage is likely to be greater in poorly maintained buildings.

Increase in number of non-residential properties with a significant likelihood of flooding: at least 40% by the 2050s and at least 60% by the 2080s

Energy, transport, water, and ICT network support services are likely to be impacted by an increase in disruptive events such as flooding, landslides, drought, and heatwaves.

Changes in coastal evolution caused by more frequent extreme weather and by rising sea levels may impact coastal communities and habitats across Scotland.

Reduced heating demand in winter is projected to cut buildings' energy use, although energy demand for cooling in summer may rise.

Climate change may have a negative impact on global food production and the cost of food.

Changes in climate, soil conditions and other aspects of the natural environment may affect biodiversity and the ability of many native Scottish species to thrive.

A warming climate has the potential to improve growing conditions in Scotland and increase the productivity of our agriculture and forestry.

Higher winter rainfall could potentially lead to an increase in the growth of algae and fungi in buildings which may exacerbate asthma and other respiratory diseases.

Drier summers may reduce water availability, affecting both the natural environment and public water supplies.

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Good Practice in Climate Change Adaptation

As a BREEAM Excellent building the UWS Ayr campus design showcases a range of adaptation features including:

Sustainable Urban Drainage (SUDS) pond to capture water run-off from the roof, reducing the likelihood of flooding.

Brise Soleil shading on the south elevation of the campus to reduce summer heat gain.

Use of energy efficient cooling systems to improve summer comfort levels.

Biodiversity Action Plan

UWS Lanarkshire Campus, provides an exemplar of building adaptation features including;

Rainwater harvesting from the roof to supply water to the toilet facilities

Brise Soleil shading to reduce summer heat gain

Cooling system to provide comfort in increased summer temperatures

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Climate Change Action Plan

The following Action Plan has been developed through contributions from the consultation workshops and best practice information from Adaptation Scotland. Actions will be reported on annually through the UWS Public Bodies Climate Change report and the UWS Sustainability Annual report.

Climate Change Impact	Threat or opportunity	Action	Timescale
Extreme weather events	Degraded fabric of buildings can be further impacted by extreme weather with risk of building damage and injury.	All campuses \Incorporate climate change adaptation into building maintenance budgets \Future building developments to incorporate climate change adaptation features – to be detailed in Estates Enabling Plan \Climate Change risks included in the UWS risk register	 A/Y 2020/21 A/Y 2018/19 A/Y 2017/18
Flooding	Flooding exacerbated by drainage issues particularly at Paisley campus. This is further increased due to water run-off from roofs. Ayr campus close proximity to the River Ayr may be at greater future risk of flooding.	Paisley \Incorporate into Estates Enabling plan increased green spaces \Increase number of water butts on campus to capture rainwater run-off from roofs Ayr \Establish a local climate change adaptation working group to identify landscaping/ planting solutions to reduce the risk of future river flooding All campus \carry out more detailed flood risk assessments	 A/Y 2018/19 A/Y 2018/19 A/Y 2018/19 A/Y 2019/20

		\Incorporate climate change adaptation into grounds maintenance activity \Review frequency and effectiveness of gutter and drainage maintenance \Provide volunteering opportunities for staff and students to participate in planting sessions	A/Y 2018/19 A/Y 2018/19 A/Y 2019/20
Energy, transport, water, and ICT network support services are likely to be impacted by an increase in disruptive events such as flooding, landslides, drought, and heatwaves.	Disruption to business continuity from students and staff not being able to travel to campus and services being disrupted on campus.	\Minimise disruption through emergency planning for home study/ remote teaching \Establish a short term working group to investigate service resilience	A/Y 2019/20 A/Y 2019/20
Increased temperatures	Milder winter temperatures may reduce heating energy use, although energy demand for cooling in summer may rise.	\Survey areas impacted by overheating and implement a heating and cooling procedure	A/Y 2019/20
Negative impact on global food production.	Increasing food costs can impact on cost of canteen food and also on student budgets and welfare.	\UWS catering to investigate increasing the use of local produce and to engage with suppliers regarding their vulnerability to global food shocks \Maintain the UWS community gardens and provide sessions for students on growing their own food	A/Y 2018/19 A/Y 2018/19
Changes in climate and soil conditions and other aspects of the natural environment.	May affect biodiversity and the ability of many native Scottish species to thrive.	\Review Ayr Campus Biodiversity Action Plan and implement recommendations \Utilise best practice from Ayr Biodiversity Action Plan to increase biodiversity at other campuses	A/Y 2019/20 A/Y 2020/21

A warming climate has the potential to improve growing conditions in Scotland and increase the productivity of our agriculture and forestry.	Opportunity for research into the impact of increased temperatures on agricultural productivity.	\Establish a short term working group with UWS and SRUC academic colleagues to engage with Policy and Research organisation ClimateXChange to identify potential areas for Climate Change Adaptation research.	A/Y 2019/20
Higher winter rainfall could potentially lead to an increase in the growth of algae and fungi in buildings which may exacerbate asthma and other respiratory diseases.	Older buildings on Paisley campus may be more susceptible to water ingress leading to algae and fungi.	\Incorporate climate change adaptation into building maintenance budgets	A/Y 2020/21
Drier summers may reduce water availability, affecting both the natural environment and public water supplies.	In the short to medium term this is not likely to be a significant impact to business continuity, the impact is more likely to be on grounds maintenance if summer watering is required.	\Increase number of water butts on campus to capture rainwater run-off from roofs which can be used to water grounds	A/Y 2019/20