

## Case Study



# Climate Change Risks and Vulnerabilities

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Adapting to climate change at local and regional level can take a variety of different shapes and forms, with many activities possibly building on and engaging with activities, practices, networks, and stakeholders that authorities have already developed. Often adaptation is understood as a cycle, which involves a number of steps to develop, implement, monitor, and evaluate adaptation options. Whilst the naming of these steps may differ between different adaptation support tools, they broadly tend to encompass the following:

- Getting started – Preparing the ground for adaptation
- Climate change risks and vulnerabilities
- Identifying adaptation options
- Implementing, monitoring, and evaluating adaptation options

The Met Office launched the Local Authority Climate Service (LACS) in 2024, which aims to support actors progress on adaptation. This case study highlights how the LACS is already being used in practice for the second step in the cycle – climate change risks and vulnerabilities.

## Climate change risks and vulnerabilities

This step looks at how your current vulnerability to climate impacts might change and how you can identify and prioritise climate change risks for your organisation. This can include a number of activities such as:

- Understanding how the climate could change
- Exploring how these changes in climate could affect your future vulnerability for a sector or location of interest
- Understanding the resultant risks from such impacts
- Evaluating the changing risks and beginning to determine which are the priorities

## Understanding how the climate might change and what the impacts could be

A combined authority interviewed is aiming to deliver a regional adaptation strategy in 2026 which will form the umbrella strategy for both the local authorities that comprise the combined authority. The two local authorities will aim to align their individual endeavours on adaptation with this.

To help the combined authority gather the required information for the strategy, they have commissioned a consultant to undertake a regional Climate Change Adaptation Study which will seek to understand the impacts to the region across the key sectors as well as the local authority service provision itself. The two local authorities, the combined authority and the region's protected areas will all seek to use the outputs of the study which is to be completed between Feb – Dec 2025 and will include:

- An assessment of climate change impacts, risks, and opportunities for the two local authorities
- A vulnerability assessment
- The development of adaptation pathways via the rapid adaptation pathways approach
- Costs to risks and adaptation, and
- Support for results integration

Whilst the adaptation strategy to be published by one of the local authorities is due before the tendered regional study is completed, the results of the study will inform any required amendments as well as more in-depth stakeholder engagement.

As the two local authorities are planning to use these outputs in their own work on adaptation, they have fed into the development of the tender specifications, including a strong drive to use the LACS. The tender document for this study clearly stated that the supplier would be expected to 'provide localised mapping outputs for the relevant risks, considering the Local Authority Climate Service (Met Office)'.

*"One of the things that (the two local authorities in the region) were suggesting was for the consultants to use the LACS tool to get some of the results and integrate some of the ideas that LACS can give you into the adaptation study itself."*

**Combined Authority**

The consultants are currently in the process of determining how best to integrate different possible climate information sources to complete the study.

*“At the moment it’s trying to tie up the different ways information is presented. The LACS is very much looking at that global warming level, which doesn’t tie as perfectly to pathways that some of the other tools do, and there’s also lots of different reporting requirements, so some of them obviously reporting to ARP4 or later. They’ve got [Carbon Disclosure Project] reporting, Global Covenant of Mayors reporting. We’ve been speaking with different stakeholders to make sure that what we’re doing is going to align with the different reporting requirements of each.”*

**Commissioned Consultant**

Furthermore, they have stated that they believe the impacts indicators from LACS will be very useful for the stakeholder engagement that will take part for the development of the adaptation pathways, as these will be used to visualise what a 2°C temperature increase means for e.g. alternative actions. The consultant has also highlighted that they aim to integrate the use of GIS in the development of risk and vulnerability assessment.

*“[...] GIS will form heavily in the vulnerability assessment. I watched one of the presentations last March before it was launched, and it showed some really fancy stuff. And then it moved into the whole GIS side, which I haven’t quite figured from the user face where I go into that side yet. But being able to use those GIS layers and to be able to look at more granular assessments it provides, that’s very much an area of exploration.”*

**Commissioned Consultant**

## **Understanding resultant risks from projected climate impacts and determining priority risks**

In Sunderland City Council, the climate journey started in 2019 when they declared a climate emergency. Until last year the focus of addressing this emergency has been on mitigation with clear targets for the council and the city. More recently, however, an increasing amount of work has been undertaken on adaptation and a climate change risk assessment for the council, the city and the wider community is now being developed. This is based on information from the UK’s Third Climate Change Risk Assessment (CCRA3), and the climate projections available from the LACS and is being made specific to the council and the city by systematically working with every service area across the council as well as key regional infrastructure providers.

In those conversations, the LACS report is being used as an engagement tool, to not only raise the awareness of adaptation and its distinctiveness from mitigation, but also to highlight the local impacts in a simple, and visually appealing way to non-subject matter experts.

*“In terms of the data, because obviously the CCRA3 is UK wide, whereas we want to make it more Sunderland specific, the LACS was just released as I was getting onto that. I’ve been primarily using that to understand what we are facing in Sunderland and to be able to incorporate that into the risks as well. It’s been incredibly timely for me to use that, rather than sifting through all of the UKCP18 data it was a good little snapshot to be able to use. [...] And then to be able to present that report in a way that explains, this is exactly what we are looking at in Sunderland is really useful. Because sometimes with more the in-detail data for someone who doesn’t work in climate change, it can be lost on them. So having nice colourful graphs with a little bit of text is really useful.”*

### **Sunderland City Council**

For council services, the adaptation officer has prepared service specific slide decks that outline the work being undertaken on adaptation and summarises available information and known risks based predominantly on CCRA3. The slide deck sets out the difference between mitigation and adaptation, climate change impacts, risks, the reason for why this work needs to be done, principles of it, stakeholder engagement, next steps and then service specific information on key messages, inequalities, the different risks (at national level taken from the CCRA3 Technical Report).

These slides are presented and discussed in the service specific conversations that take place before services are tasked to complete their part of the risk assessment. In addition, with service areas that are more exposed to a variety of climate risks, the adaptation officer will share the whole LACS report and take them through the information in it. If it is service areas whose remit is more specific (e.g. flood risk management), then only part of the LACS report will be focused on in the conversation. This approach is being taken to make the information communicated as relevant to the other person/service area as possible and keep the messaging as tailored as possible. Mostly these conversations have taken place in person, but on those occasions, when it has been harder for the adaptation officer to speak to services in person, the LACS report and service specific presentation slides are sent via email.

Furthermore, how much data is being shown and communicated from the LACS also depends on which stakeholder is in the conversation. With key

infrastructure providers that are also required to report to the Adaptation Reporting Power, LACS has not featured as those stakeholders already have an established process on understanding and reporting on climate risks and adaptation actions.

After the initial conversations, services receive the presentation, a short summary, an excerpt of the climate change risk assessment, and the LACS report. They are then being tasked with completing their service specific part of the climate change risk assessment but are encouraged to ask clarifying questions if needed. The detail included in these service specific parts varies and at times the adaptation officer then supplements the input provided by the services with further detail. At this point, information from the LACS (e.g. maximum temperature days) are being used to further interrogate/ expand on the impacts identified. The climate change risk assessment currently does not directly refer to the LACS, but once all the data has been amalgamated into one overarching comprehensive assessment, the adaptation officer aims to include all the available information on the climate projections into it at that point. It is clearly recognised that this is the first iteration of the climate change risk assessment, and it will need to be continuously reviewed. This process will also allow for additional relevant information from LACS and elsewhere to be integrated over time when reported risks may also increasingly include more quantitative information/ thresholds/ requirements.

The adaptation officer is seeking to undertake additional work on trying to understand historic climate impacts to support their understanding on where potential future ones might be happening. An important action discussed in step 2 of the Adaptation Toolkit. Once completed, the final comprehensive risk assessment will then be used to design an action plan for adaptation. This will outline all possible adaptation actions that will be identified in conjunction with the different service areas. This comprehensive list will then be narrowed down to what is feasible and implementable up to 2028.

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