

UK Climate Projections 2018: Resources Summary

- [UK Climate Projections 2018](#) (UKCP18) is a tool to analyse and assess changes in the UK's climate.
- UKCP18 projections and analyses enable fact-based decision-making when assessing risks by providing scientifically-proven information to decision-makers across different sectors.
- Not sure where to start?
 - Watch this: https://www.youtube.com/watch?time_continue=123&v=l45UVhc9mz4
 - Read this: <https://www.metoffice.gov.uk/research/collaboration/ukcp/what-do-you-want-to-do>

At a glance...

UKCP18 sets out a range of possible outcomes over the next century, based on different rates of greenhouse gas emissions into the atmosphere.

UKCP18 projects greater chance of hotter, drier summers and warmer, wetter winters with more extreme weather and rising sea levels. The highest predicted releases for Northern Ireland shows that by:

- 2070 winters could be up to 3.9 °C warmer and summers could be up to 4.9°C hotter
- 2070 winters could be 25 per cent wetter and summers 38 per cent drier
- 2100 sea levels in Belfast could rise by up to 94cms

Taken from: <https://www.nidirect.gov.uk/articles/climate-change> (Accessed 23 July 2019)

UKCP18 Demonstration Projects:

Six demonstration case studies have been developed to show how UKCP18 projections can be implemented to tackle issues relating to different sectors and regions of the UK. These demonstration projects have been led by sector specialists and were written for their sector. Sectors include, coastal erosion risk, flood risk, building design and forestry growth.

Regional

- Assessing climate change risk in Yorkshire, piloting projections with a focus on flood-risk management
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/2-leeds.pdf>

Marine

- Coastal cliff recession in Newlyn, how UKCP18 data can be used to understand increased shoreline erosion
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/4.-wsp.coastal-cliff-recession-under-climate-change.pdf>

Built Environment

- Thermal performance of buildings, providing weather projections to builders to assess resilience
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/5-uoecibse.pdf>

Natural Environment

- Forest for the future, encouraging tree growth and providing species suitability information for growers:
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/3-forest.pdf>

Water

- Water resources and drought planning, a bottom-up approach:
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/1-hr-wallingford.v2.pdf>
- Future surface water flood hazard risk management in Scotland, sub-daily national climate projections:
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-demo-projects/6-sepa.final.pdf>

Information Resources

Here is a collation of resources divided by level of complexity. If you are new to UKCP18 and this kind of data, try the *New User* section.

Introductory videos

- What does UKCPC18 consist of?
https://www.youtube.com/watch?v=eDX8fQeOUII&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z&index=20
- What is new about UKCP18 climate projections over land?
https://www.youtube.com/watch?v=P6XeiofnaLY&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z&index=19
- How will UKCP18's success be measured?
<https://www.youtube.com/watch?v=CfUg8xT8A24&feature=youtu.be>
- What are the 2.2km UK simulations useful for?
https://www.youtube.com/watch?v=E8mkx2bJ4TE&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z
- What is happening with rising sea levels?
https://www.youtube.com/watch?v=rbM10bikHvs&index=2&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z
- How will climate change impact our daily lives?
https://www.youtube.com/watch?v=kGnojfGTuJc&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z&index=9
- What are the risks for different regions of the UK?
https://www.youtube.com/watch?v=KVAXJPwr_IM&list=PLyLeQN0tRck2uAer7S12xNF7Mb8eRyd_Z&index=6

New User

- A concise infographic of weather projections across all regions of the UK: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-land.pdf>
- UKCP09 produced detailed climate maps which are still available to use: <https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages>
- Summary of regional climates: <https://www.metoffice.gov.uk/research/climate/maps-and-data/regional-climates/index>
- Executive Summary of Projections: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-overview-summary.pdf>
- Factsheets: temperature, precipitation, wind, sea levels, storms and weather types: <https://www.metoffice.gov.uk/research/library-and-archive/publications/factsheets>
- Factsheet on **marine** projections for sea level rise and storm surge: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-fact-sheet-sea-level-rise-and-storm-surge.pdf>

Intermediate

- FAQs for datasets: <https://www.metoffice.gov.uk/research/climate/maps-and-data/data/haduk-grid/faq>
- What are Representative Concentration Pathways (RCPs)? <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---representative-concentration-pathways.pdf>
- Derived projections factsheet, including a list of key findings, data availability, colour-coded maps, etc: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-fact-sheet-derived-projections.pdf>
- Detailed **marine projections** report: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-marine-report-updated.pdf>
- Headline findings for **marine and land** assessments and projections: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-headline-findings-2.pdf>
- Video explaining the design of national scenarios using a “perturbed parameter ensemble” tool: https://twitter.com/MetOffice_Sci/status/1061956282767368194

Advanced

- Database, for those familiar with handling large (raw) datasets: <https://catalogue.ceda.ac.uk/?q=ukcp18>
- User Interface, for accessing and building interpreted data, maps, graphs... It is free to sign-up: <https://ukclimateprojections-ui.metoffice.gov.uk/ui/home>
 - Once logged in, you will see that each product has a descriptor, telling you what is in each area
 - On the left hand side of the page, you will find ‘Outputs’, where you can select Maps, Graph or Data Only
 - You will need to decide which emissions scenario you are going to use
 - The pdf or JPEG output will be at a UK level, so if tailoring for a specific region, you might want to consider downloading the data and visualising it independently

For further guidance on how to make the most out of UKCP18 data, consider the following guides:

- Caveats and limitations that you need to be aware of before using UKCP18 results and data: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---caveats-and-limitations.pdf>
- For those who are familiar with the UKPC09 products: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance-ukcp18-for-ukcp09-users.pdf>
- Guidance on interpreting plots - how to make the most out of the available data and different methods of data visualisation: <https://www.metoffice.gov.uk/research/collaboration/ukcp/guidance-on-interpreting-data>
- How to use joint probability plots, to explore the relationship between, for example, precipitation and temperature: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---how-to-use-joint-probability-plots.pdf>
- How to use probability distribution functions (PDFs) and cumulative distribution functions (CDFs): <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---how-to-use-the-cdf-and-pdf-plots.pdf>
- How to use probabilistic projection maps: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---how-to-use-probabilistic-projections-maps.pdf>

For more information on UK climate patterns and what this means for you, the Met Office recommends the following publication:

- *International Journal of Climatology*. This publication provides a summary of the UK weather and climate through the calendar year 2017, alongside the historical context for several essential climate variables: <https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.5798> "State of the UK Climate" (July 2018). Open access.

Staying up to date:

- The Met Office Twitter https://twitter.com/metoffice_sci?lang=en
- The Met Office Science Twitter https://twitter.com/metoffice_sci?lang=en
- Weather and climate news: <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate>