

The prototype land management tool for winter cover crops

As part of the European project EUPORIAS, we are working closely with Clinton Devon Estates (CDE) to develop a working prototype to provide seasonal winter weather forecasts (1-3 months ahead) in support of decision making on cover crop planting, choice, and management. We are focusing on winter decision making because recent advances in long-range weather forecasting mean it is often possible to provide advance notice of a colder and drier, or warmer and wetter winter than average conditions.

What is a seasonal forecast?

A seasonal prediction aims to estimate the change in the likelihood of a climatic event happening in the coming months. It is a forecast of the possible conditions averaged over a large region (e.g. country-wide) and over a specified period of time (e.g. three months). Specifically, the seasonal prediction gives an indication of the possible conditions over the UK for the coming 3-month period.

It does not indicate that these average conditions will prevail continuously, as the period is likely to contain a range of different types of weather. Nor does it indicate that these average conditions will be the same over the whole region. The questions we can answer in seasonal forecasting are different to the questions we are trying to answer in weather forecasting. For example, in seasonal forecasting we try to address questions like:

- *If the average temperature in Devon in winter is 5.2°C, what is the chance of having warmer or colder temperatures this year?*
- *If, on average, the first frost in South East England is on 3 November, what is the probability that this winter will have frosts earlier than this?*

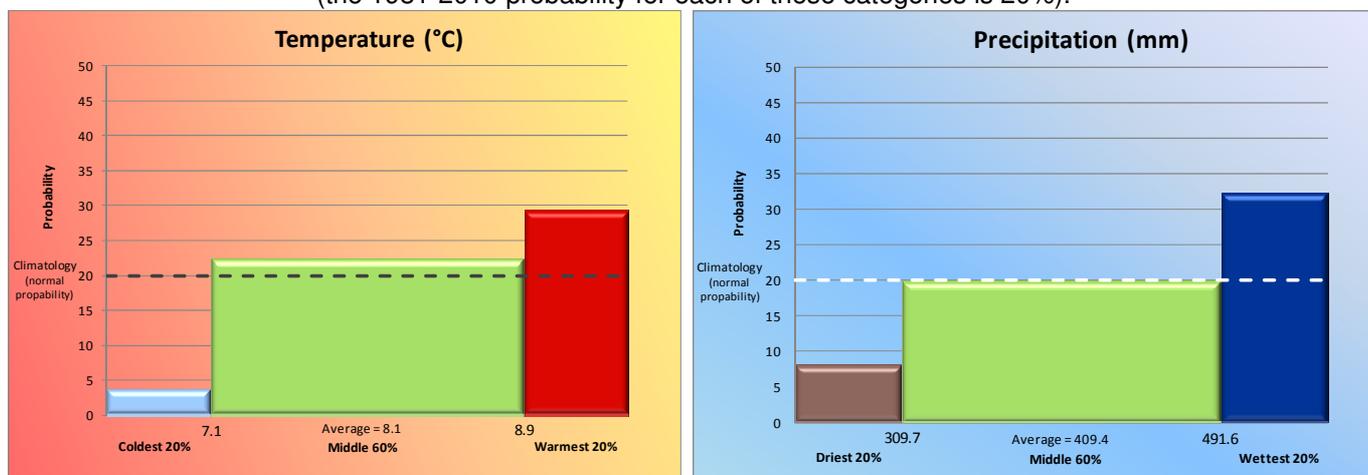
As you can see, in both these questions there is a comparison with an average value which is usually calculated from observations. So, in seasonal forecasting we are trying to estimate the difference between the chance of an event happening this year and the frequency with which it has happened in the past.

How should I use the prototype forecast?

We are aiming to provide our prototype as rolling monthly outlooks for three months ahead during autumn/winter 2014/2015. Your feedback will help improve the first version of the service during this winter, and to provide the final prototype for autumn/winter 2015/2016. Because this first version is a prototype, we do not expect the information provided to be used in your decision making directly. We would like you to read the forecast below and consider how it might affect your decisions regarding planting, choice and management of cover crops this winter, and provide your feedback via email or using the attached form.

Devon outlook for October- December 2014 – issued end September 2014

The latest predictions for Devon slightly favour above average temperatures and precipitation for October-December 2014. Overall, the probability that the Devon-mean temperature for October-November-December will fall into the warmest of our three categories is around 29% and the probability of falling into the coldest of our three categories is close to 4% (the 1981-2010 probability for each of these categories is 20%). Similarly, precipitation, the probability that the Devon-mean precipitation for October-November-December will fall into the wettest of our three categories is around 32% and the probability of falling into the driest of our three categories is close to 8% (the 1981-2010 probability for each of these categories is 20%).



The bar charts show the probability that Devon-average temperature (left) or precipitation (right) for the three month period will fall into three different categories (coldest or driest 20%, near average, and wettest or warmest 20%). The dashed lines show the probability based on long-term observational records (1981-2010). The numbers on the chart show the actual temperature and precipitation values (for the coldest/driest 20%, average, and warmest/wettest 20%) from long-term observational records (1981-2010).

Your feedback on the land management prototype

We would really value your feedback on the attached prototype land management tool. Please let us know what you think, either by:

- a) Filling in this feedback form and using the supplied pre-paid envelope, or
- b) Sending us your comments by email to pete.falloon@metoffice.gov.uk

Many thanks for your time and feedback.

Pete Falloon (on behalf of the EUPORIAS land management tool project).

Your details: [mail merge/autofill]

«Name»
«Add1»
«Add2»
«Add3»
«Add4»
«Postcode»

Your feedback (some draft suggestions, to be expanded and formatted):

- 1) Did you find the forecast useful? YES/NO
- 2) If not, why not?
 - a. Not the right weather variables (e.g. wind, humidity etc)?
 - b. Difficult to understand the information on probabilities?
 - c. Timing of the forecast (e.g. more detail needed in the shorter term; 3 months is not long enough)?
 - d. Other reason (please use the box below)

- 3) Did the information provided in the forecast influence your decision making, and if so, how?

- 4) How would you like the service to be provided in future?
 - a. Mail/paper forecast?
 - b. Email
 - c. SMS text
 - d. Mobile/tablet app
 - e. Website
 - f. Other – please specify in the box below

- 5) Please provide us with any other comments on the prototype forecast in the box below:

For more information please contact:

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