



Land management tool

With special thanks to the following:

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Land management prototype

Winter 2014/2015

4 representative farmers
(Clinton Devon Estates)

Farmer interviews

3 month forecasts issued
each month (Sep-Mar)

Feedback gathered

Spring/Summer 2015

20 farmers
(South West UK:
Clinton Devon Estates
+ National Farmers Union)

User needs surveys
(online/paper)

Forecast
assessment &
development

Forecast products for
Winter 2015/2016

Fortnightly partners teleconferences

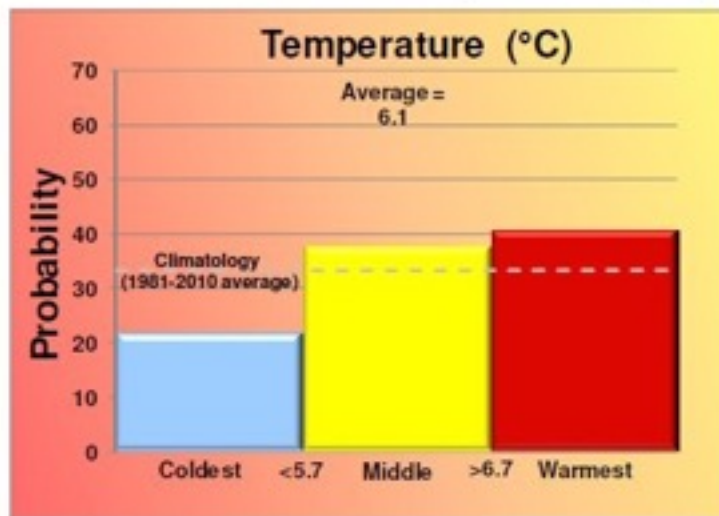
Wikidot website for minutes/working documents

Example forecast from Winter 2014/2015

Devon outlook for November 2014-January 2015

issued end October 2014

The latest predictions for November-December-January favour above-average Devon-mean temperature and precipitation.

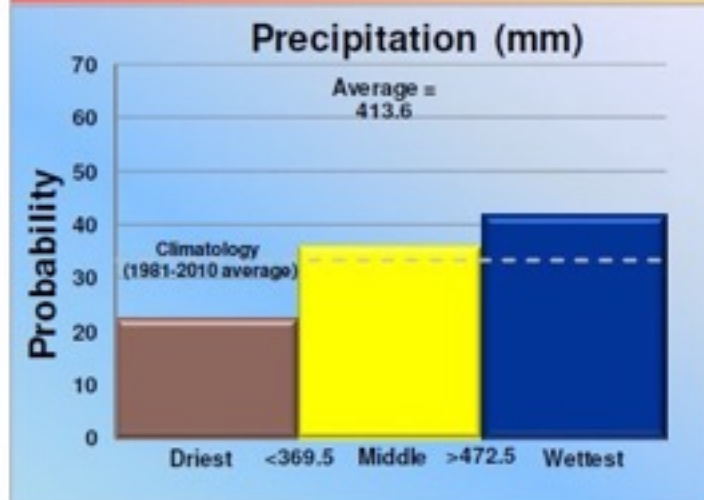


Temperature

The probability that the Devon-mean temperature for November-December-January will fall into the warmest of our three categories is around 22%

The probability of temperature falling into the coldest of our three categories is close to 41%

(the 1981-2010 probability for each of these categories is 33%).



Precipitation

The probability that the Devon-mean precipitation for November-December-January will fall into the wettest of our three categories is around 23%

The probability of precipitation falling into the driest of our three categories is close to 42%

(the 1981-2010 probability for each of these categories is 33%).

The bar charts show the probability that Devon-average temperature (top) or precipitation (bottom) for the three month period will fall into three different categories (coldest or driest 33%, near average, and wettest or warmest 33%). The dashed lines show the probability based on long-term observational records (between 1981-2010). The numbers on the chart show the actual temperature and precipitation values (for the coldest/driest 33%, average, and warmest/wettest 33%) from long-term observational records (between 1981-2010).

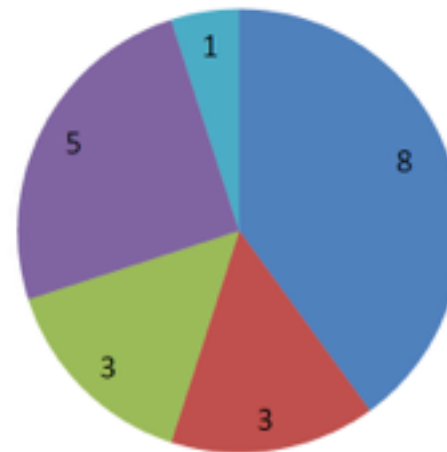
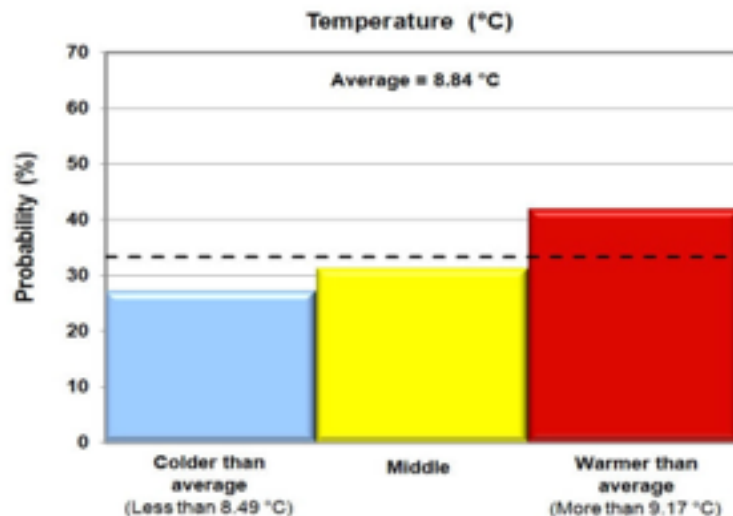
See overleaf for full details on how to interpret this forecast.

Findings, lessons, plans (1)

- **Farmer engagement:**
 - Specific variables (T, P, rain/dry days, heavy rain)
 - More local, shorter-term; web delivery
 - Poor understanding of forecasts, if not fully explained
 - More engagement with 2015/2016 forecasts
 - **Skill assessment:**
 - County-scale - poor skill for precip (+ metrics)
 - Some local areas with NAO/precip links.
 - **Forecast development:**
 - 14 day site-specific T & P outlooks, web delivery
 - 3 months: T outlooks for all, P only where there is skill
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Getting the message right..?

In your opinion, which of the following statements best describes the forecast above?



- The forecast shows above average temperatures for March-May
- The forecast shows below average temperatures for March-May
- The forecast shows close to average temperatures for March-May
- I'm not sure
- No answer

The bar charts show the probability that Devon-average temperature for the three month period will fall into three different categories (coldest or driest 33%, near average, and wettest or warmest 33%).

The dashed line shows the probability based on long-term observational records (between 1981 and 2010). The numbers on the chart show the actual temperature and precipitation values (for the coldest 33%, average, and warmest 33%) from long-term observational records (between 1981 and 2010).

Findings, lessons, plans (2)

- **Communicating** probabilistic forecasts, even simplified, is difficult!
 - Need better presentation, and/or training
 - Getting strong **farmer involvement** is hard
 - How do we motivate them?
 - How do we make it easy?
 - Hard to assess **impact of forecasts on decisions**
 - **Hypothetical exercises, using hindcasts?**
 - Natural Sciences Project (6 students) at Exeter
 - **Catalogues of recent years in tercile categories**
 - **How to communicate skill/confidence**
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In the news...

