

Climate information for industrial operators

~ Using climate information to reduce the influence of weather! ~



Part of a JMA project to promote climate risk reduction in various industries using two-week forecasts.

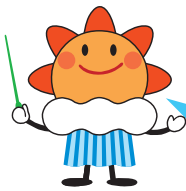
Two processes are particularly important in taking advantage of extreme climate conditions (such as heat waves and cold spells) and reducing related risks : (1) quantitative evaluation to determine the influence of the climate using weather observation data, and (2) appropriate response based on the utilization of climate prediction data such as Early Warning information on Extreme Weather (two-week forecasts). Details of climate risk management (CRM) for the apparel industry are provided below.



① Climate risk evaluation in the apparel industry

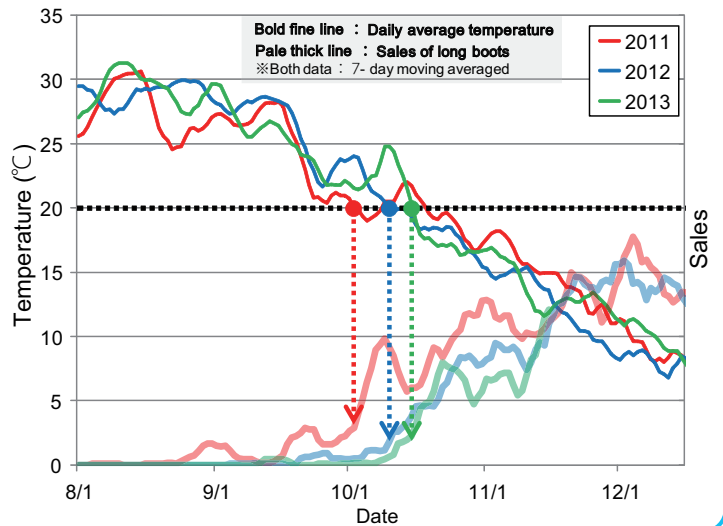
~ Relationship between apparel sales and climate ~

Relationship between long boot sales and temperature



Research result

Sales of long boots increase remarkably when the daily average temperature falls below 20°C.

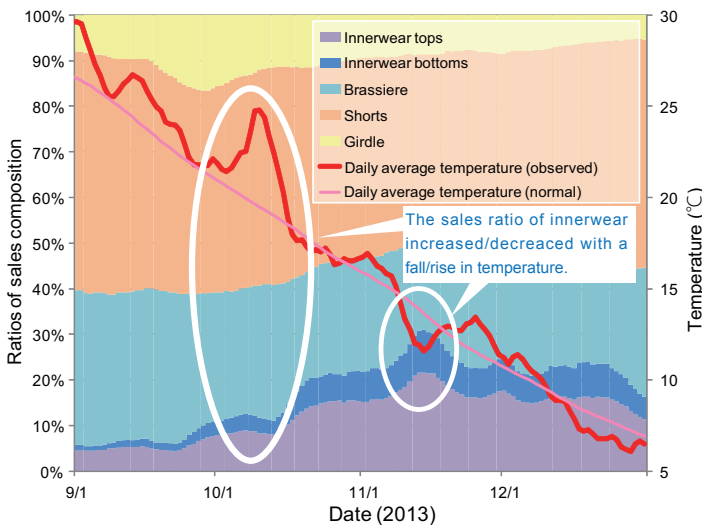


Comment from a contributing company

It has become clear that the threshold temperature will always be 20°C, even though the time when the sales of long boots increase may vary by up to two or three weeks.

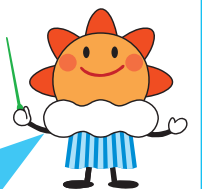


Relationships between sales ratios of five major innerwear items and temperature



Research result

The sales ratio of innerwear increases from the end of September and fluctuates finely with changes in temperature.

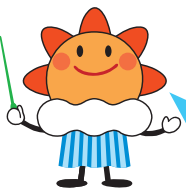


Comment from a contributing company

It's surprising that the sales ratio of each item shows clear changes in line with temperature. The results help us discuss store promotions in consideration of temperature forecasts.

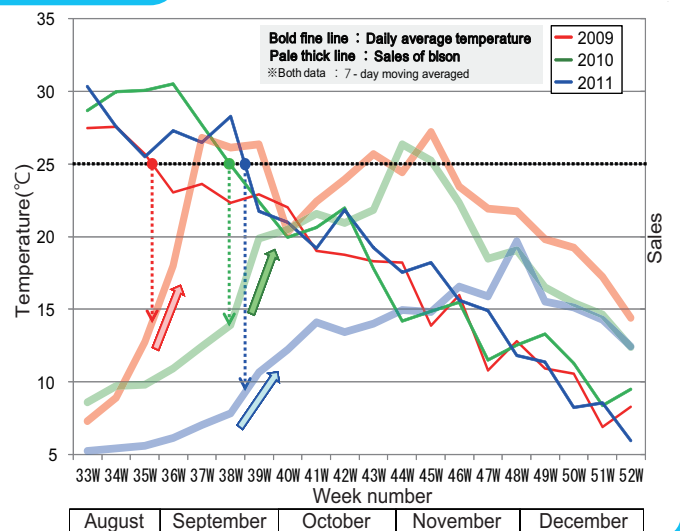


Relationship between blouson sales and temperature



Research result

Sales of blouson increases as the temperature drops in early autumn. Sales increase remarkably when the daily average temperature falls below 25°C.



Comment from a contributing company

Through this research, we found a clear relationship between sales and temperature. We are sure that effective use of climate information will help to boost sales.



Other studies and details :

<http://www.data.jma.go.jp/gmd/risk/en/apparel.html>

This research was conducted to establish best practices in CRM in line with a recommendation from Japan's Council for Transport Policy. The research was conducted in collaboration with the Japan Apparel Fashion Industry Council (JAFIC).

② Climate risk treatment in the apparel industry

～ Measures based on two-week forecasts ～

Case study involving a shoe company

The research results indicate that sales of long boots increase remarkably when the average temperature falls below 20°C.

Two-week forecasts can be used to decide appropriate action in retail environments as outlined below.

STEP 1

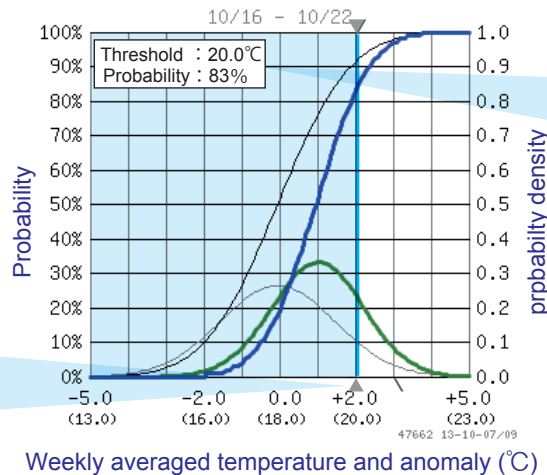
Access the two-week forecast web page.(※1)



A case of Tokyo (selectable)▲

STEP 2

Move this bar to the target temperature (20°C in this case).



STEP 3

In this case, the probability of the average temperature falling below 20°C in the coming two-week period is 83%. Measures can be planned accordingly.

Plan:
Stock up on long boots, strengthen in-store promotion, etc.

Effective measures suggested by contributing companies

Change the volume of arranged items.



Start proactive recommendation of target items.



Strengthen visual merchandising (VMD).



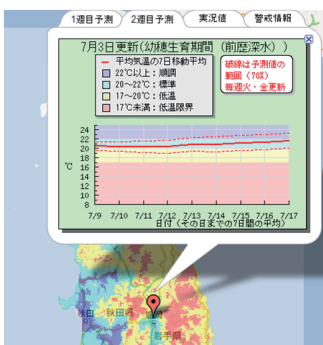
Adjust the volume of stock delivered from warehouses to stores.



Climate risk management in other sectors

Agriculture (※2)

Period	Threshold temperature	Anxious disease
From mid-July to the beginning of August	20°C or less	Barren obstacle
first 10 days of August	20°C or less	Barren obstacle
During August	27°C or more	Heat damage



Rice crops are influenced by temperature at each stage of growth (see table).

Agricultural weather information using JMA's temperature prediction up to two weeks ahead is issued tentatively (※3) and this information is useful for working out measures to extreme weather.

Electricity Supply

To cope with the critical issue of electricity supply, JMA issues forecasts of maximum high temperatures for the period two weeks ahead.

This information is utilized for electricity forecasts made by all electrical power companies.



(※1) <http://www.data.jma.go.jp/gmd/risk/probability>

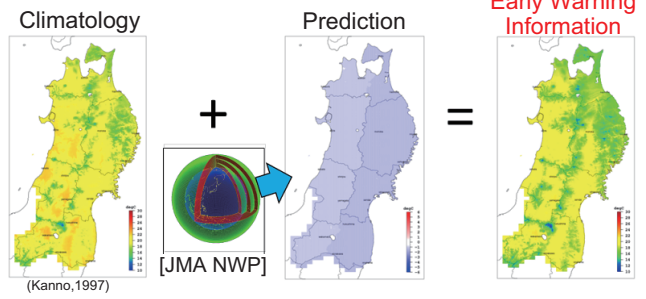
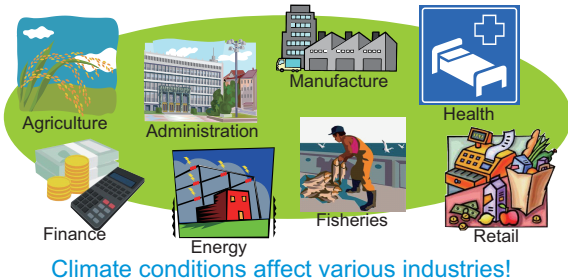
(※2) To establish best practices in CRM in line in the agricultural industry, JMA and the National Agriculture and Food Research Organization (NARO) have started a pilot project to develop an early warning system using two-week forecasts. It is showed part of the results here.

(※3) This information was provided by "crops warning information using weather prediction data by Google Map" operated by NARO

Useful tools for climate risk management

Web site for climate risk management

Detailed descriptions and CRM case studies are provided on the JMA web page.



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<http://www.data.jma.go.jp/gmd/risk/en/>

Climate risk evaluation — Evaluation using weather observation data —

- Historical data on weather observations by the Automated Meteorological Data Acquisition System (AMeDAS) are made available.
- Target temperature is comparable with normal temperature, several-year-average temperature, and etc.
- Data can be downloaded in .csv file format.



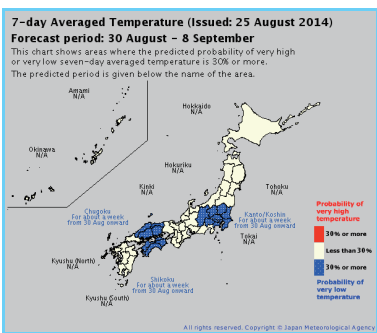
※ Japanese only

Historical weather observation data download page

<http://www.data.jma.go.jp/gmd/risk/obsdl>

Climate risk treatment — Use of forecasts —

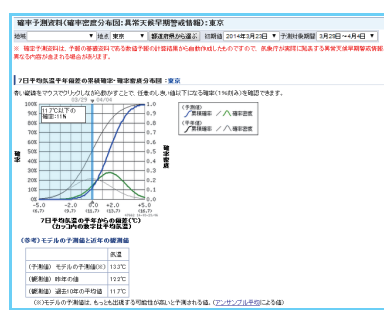
Early Warning information on Extreme Weather



- This information is issued every Monday and Thursday when extreme climate conditions are predicted up to two weeks ahead.
- Temperature probability forecasts which is the basis of this information are also made available.

<http://www.jma.go.jp/jp/en/soukei/>

Temperature probability forecast page



- Data on 7-day-average temperature for coming two weeks is made available.
- The probability of temperatures being higher or lower than expected can be found.
- Data can be downloaded in .csv file format.

※ Japanese only

<http://www.data.jma.go.jp/gmd/risk/probability/>

Information on weather, earthquakes and oceans can be found on the JMA website.

<http://www.jma.go.jp/jma/indexe.html>

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