The art and science of Japan's cherry blossom forecast

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Japan's sakura or cherry blossom season is feverishly anticipated by locals and visitors alike. Many tourists plan their entire trips around the blooms, and Japanese flock to parks in their millions to enjoy the seasonal spectacle.

"People pay more attention to the cherry blossom season than any other flower in Japan," Ryo Dojo, an official of the statistics unit at the Japan Meteorological Agency, told AFP.

The most basic element of predicting when the delicate pink and white petals will begin to unfurl is a large data set of temperatures.

That's because the flowers will come earlier if temperatures rise quickly in spring, Dojo said.

Conversely, if temperatures in the autumn and winter period are higher than usual, the blooms can end up being delayed.

Extreme weather can affect the trees too, with unusual patterns in 2018 prompting some blossoms to appear in October, well before the usual season.

In general, blooms begin as early as March in southern Kyushu and appear as late as May in northernmost Hokkaido.

In a bid to improve its forecasts, some outfits have started crowdsourcing data, including Weathernews, a firm in Chiba near Tokyo.

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It relies on photos of buds sent in regularly by 10,000 citizens across the country who are registered on the company's website and app.

"Cherry blossom forecasting is impossible for us without this system," spokeswoman Miku Toma said.

Two million reports

The company launched what they call the "sakura project" in 2004,

signing up members who choose their own cherry tree and send pictures of its buds to the firm at regular intervals.

"We realised we could see the details of how buds grow thanks to the pictures sent to us," Toma said.

"So we decided to incorporate the project to help predict blossoms."

Just observing the bud can give surprisingly accurate information about how far the flower is from full bloom.

A sakura bud still a month from blossoming will be small and firm, but after 10 days, the tip turns slightly yellow-green, and then a darker green part emerges.

When the tip of the bud turns a faint pink, it's just a week until bloom-time.

During cherry blossom season in Japan shops will pack their shelves with sakura themed merchandise

Thanks to the project, Weathernews has accumulated data from two million reports on cherry flower buds in the past 15 years, which it uses to increase the accuracy of its forecasting.

It also incorporates weather data collected from its own observation devices across Japan—13,000 locations in total, 10 times more than the official weather agency has.

Weathernews employees also call around 700 parks regularly to check the growth of cherry flower buds.

The company and other forecasters also employ mathematical models and algorithms.

Otenki Japan, a forecaster run by a subsidiary of precision-equipment manufacturer Shimadzu, even began using artificial intelligence to predict cherry blossoms in 2018.

Blooms on beer

The forecasts are not only for flower fans, but reflect the fact that sakura season is big business in Japan.

Cherry blossoms symbolise the fragility of life in Japanese culture as full blooms only last about a week before the petals start falling off trees.

And in that period and the preceding weeks, shops will pack their shelves with sakura themed merchandise. Pink and white blossoms seem to decorate everything from beer cans to sakura-flavoured chips and flower-themed candy.

Extreme weather can affect Japan's cherry blossom trees too, with unusual patterns in 2018 prompting some blossoms to appear in October, well before the usual season

The season is traditionally celebrated with hanami, or viewing parties, in cherry blossom hotspots, with picnics organised beneath the trees.

The season is also considered one of change, as it marks the start of the new business year, with many university graduates starting their first full-time jobs and older colleagues shifting to new positions.

Japan's Meteorological Agency stopped forecasting cherry blossoms in 2010, after more than five decades, saying other organisations were now making predictions with sufficient accuracy.

The agency does however still declare the official start of cherry blossom season by monitoring 58 so-called barometer trees.

The trees are at locations across the country, and the precise locations are considered a closely-guarded secret.

One of them in Tokyo, however, is known to be at the Yasukuni Shrine.

From the beginning of March, inspectors visit the barometer trees once a day, with the trips increasing to twice daily as blossoming nears, Dojo said.

"We check flowers with our own eyes. And we announce the blossoming if five or six flowers appear," he added.

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