of Mexico. The moisture is often welcome, bringing up to half of the year's water supply in affected areas[1]. A 2013 study found that as many as three-quarters of all droughts in the Pacific Northwest between 1950 and 2010 had been brought to an end by atmospheric-river storms[2]. California has been stricken by drought for years (see *Nature* **512,** 121–122; 2014), but last month, an atmospheric river dropped enough rain to erase one-third of the water deficit of one major reservoir in just two days.

Climate change may bring stronger and more frequent atmospheric rivers, because the warmer the atmosphere is, the more water it can hold, says David Lavers, a meteorologist at Scripps who is not involved in the project. "The more you know about how the atmosphere behaves," he says, "the better position you're in to prepare for extreme events."

The current US$10-million field campaign, called CalWater 2015, is a massive push to capture the physics of atmospheric rivers as they make landfall. A research vessel from the US National Oceanographic and Atmospheric Administration (NOAA), the *Ronald H. Brown*, is sitting several hundred kilometres off the California coast, waiting to position itself beneath an atmospheric river whenever one forms. The ship carries a suite of instruments operated by the US Department of Energy (DOE) that will peer upwards to study aerosol concentrations and other properties of the atmosphere once a river has formed.

Four aeroplanes — two belonging to NOAA, and one each to the DOE and NASA — will fly directly into the atmospheric river. They will release dropsondes, miniature parachutes carrying an array of instruments that record weather data as they descend.

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One major goal is to work out how aerosols affect atmospheric rivers, says Kimberly Prather, an atmospheric chemist at Scripps and another leader of the project. A smaller field campaign in California between 2009 and 2011 suggested that contrary to expectations, aerosols served as nuclei for ice crystals to grow within atmospheric rivers and later produce snow[3]. "It's Mother Nature's way of seeding things," says Prather.

CalWater 2015 will measure how aerosol particles interact with atmospheric rivers, both offshore and when they reach the coast. Supercomputer simulations will examine how airborne dust affects the amount and type of precipitation that eventually falls, says Ruby Leung, an atmospheric modeller with the Pacific Northwest National Laboratory in Richland, Washington.

That information should help water managers to predict what atmospheric rivers may bring. Reservoir engineers in northern California typically release precious water from their reservoirs in the winter, so as to have enough space behind the dam to cope with the threat of flooding. With better knowledge of when atmospheric rivers might arrive and how much water they might carry, says Ralph, engineers should be able to manage that winter release more effectively. ■

1. Lavers, D. A. & Villarini, G. *J. Hydrol.* http://dx.doi.org/10.1016/j.jhydrol.2014.12.010 (2014).
2. Dettinger, M. D. *J. Hydrometeorol.* **14,** 1721–1732 (2013).
3. Creamean, J. M. *et al. Science* **339,** 1572–1578 (2013).

CORRECTION

The News story 'Rave drug tested against depression' (*Nature* **517,** 130–131; 2015) gave the wrong affiliation for Kyle Lapidus. He is now at Stony Brook University in New York.