

# Lush grasslands, higher allergy risks: What hay fever sufferers can expect from another La Niña season

September 14 2022, by Janet Davies, Alfredo Huete and Paul Beggs

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Australia has among the highest prevalence of [asthma](#) and [hay fever](#) globally. La Niña (and El Niño) will undoubtedly affect allergy sufferers.

Sea-surface temperatures across the east-central equatorial Pacific [cycle between episodes](#) of La Niña (when the sea is cooler) and El Niño (when it is warmer). These complex weather patterns are likely to alter the

amount of pollen in the air.

A La Niña event has been [declared](#) for the third year in a row, increasing the likelihood eastern and northern Australia will be wetter than normal. This will raise [health concerns](#) for some people due to prolific pastureland growth and more [grass pollen](#).

Allergic rhinitis (hay fever) and asthma can be [triggered](#) by pollen from grasses, weeds or trees. Thunderstorms can also be a trigger.

Record rainfalls in regional Victoria led up to Australia's most catastrophic respiratory allergy event in November 2016, when [thunderstorm asthma](#) was linked to several thousand trips to Melbourne hospital emergency departments and ten deaths.

But our understanding of how climate change is affecting risk is limited by sparse and intermittent [pollen monitoring in Australia](#). We'll need continuous pollen records for at least ten or 20 years to track the effects on pollen exposure.

## Climate change and what to expect

Climate change appears to increase our exposure to airborne allergens such as grass pollen. [Research](#) recently showed the amount of Brisbane grass pollen measured from 2016 to 2020 was almost triple the amount monitored between 1994 and 1999.

This was linked with increasing [carbon dioxide](#) in the atmosphere, increasing temperature and lush vegetation. The number and proportion of days with grass pollen at high and extreme levels increased significantly over time, bringing more health risks.

Highly elevated grass pollen levels were also seen during [the 2021 grass](#)

[pollen season](#) up until flooding in February 2022.

It's early days, but given the [declaration of another La Niña season](#), the upcoming grass pollen season will likely to be high again this spring and summer at least in some parts of Australia.

Pollen exposure differs significantly [between locations and years](#). So understanding local environmental drivers is important.

Using over 20 years of [satellite data](#) and ground-based cameras to monitor the life cycle of grasses (including peak growth periods, flowering and pollination) we've shown [climate change](#) is [altering the composition of grasslands](#) with warm season grasses steadily increasing. Changes in the types of grasses growing alter allergen composition, severity, and the seasonal timing of pollen exposure. This is important for [sensitisation, diagnosis and management](#) of people with hay fever.

## Keeping track of pollen

Currently, pollen monitoring is mostly undertaken by academic research groups dependent on short-term competitive funding.

Australia is several years behind Europe and Japan in adopting [automated, real-time pollen monitoring](#). Our current manual pollen monitoring processes are labor intensive and [imprecise](#).

For Australia to set up similar monitoring, instruments would need to learn to detect, match and count local pollens and be capable of operating over time in our diverse and often harsh external environments.

Access to real-time automated pollen monitoring across a broad coverage of sites would help with pollen forecasting. This could inform

both short-term daily pollen forecasts, and early pollen season warnings.

While there are approximately [25 active pollen monitoring sites in Australia](#), these are mostly located in urban areas, and across Victoria. We need a wider network of [monitoring](#) sites to serve [community needs](#) and to foster better understanding of [pollen sources](#) and health implications.

## A national approach to allergies

The freshly launched [National Allergy Center for Excellence](#) will hopefully push for all Australians with pollen allergies to have access to accurate pollen information.

For now, those with allergies should keep an eye on the [currently available](#) pollen counts. If you need [advice on how to better manage your pollen allergies](#), especially if you are at risk of [seasonal allergic asthma](#), consult your pharmacist or discuss treatment options with your doctor.

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