

How often does it flood here?

FREQUENCY OF FLOODING IN THE HAWKESBURY-NEPEAN

There is a long history of deep and dangerous flooding in the Hawkesbury-Nepean Valley.

While floods can occur at any time, the history of floods in the valley shows that it's normal for there to be dry periods followed by periods of frequent floods.

Flood-dominated and drought-dominated cycles

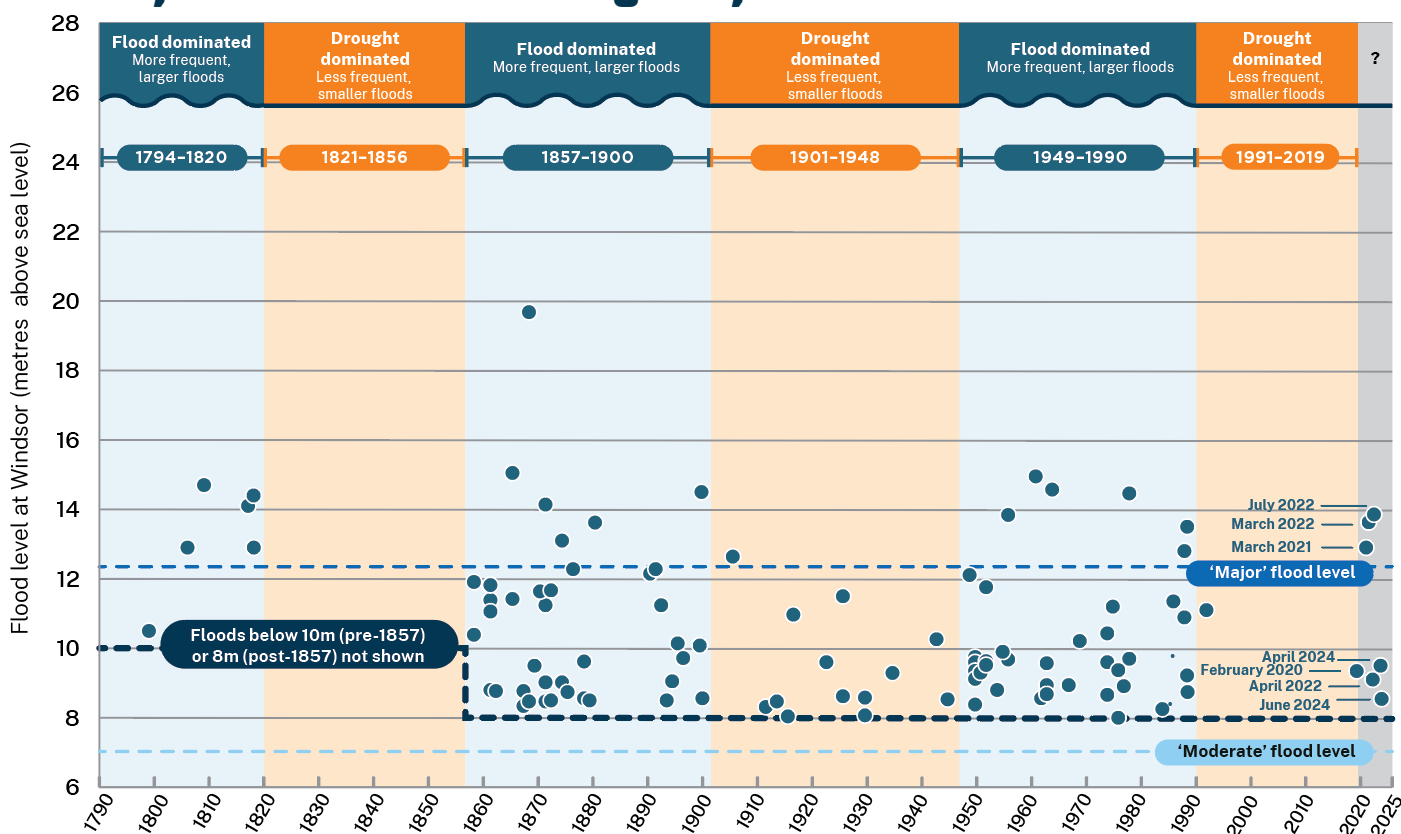
Around 230 years of flood observations at Windsor show that the Hawkesbury-Nepean Valley is characterised by drought-dominated and flood-dominated cycles which can each last for decades (see diagram).

Floods tend to be less frequent and smaller in the drought cycles, but more frequent and deeper in the flood cycles.

In addition to these patterns, there are large annual variations of rainfall and runoff. Ultimately, floods are naturally occurring events and there are limits to predicting when the next one will occur.

It has not yet been confirmed whether we have now entered a long-term flood-dominated period, but three major floods in two years suggest this might be the case.

History of these flood/drought cycles



Since the 1790's written records show there have been over 130 moderate to major floods.

For example, between 1949 and 1990 there were 6 major floods with another 32 floods reaching above 8 metres on the river gauge at Windsor. During this period, sometimes up to 4 floods happened in a single year.

Between 1992 and 2020 there were 28 years without any moderate or major floods. Then since February 2020 there has been a series of floods in the valley,

including several major floods. It's possible that the cluster of floods that began in 2020 may signify the start of another flood-dominated regime. However, we may need to wait another 10 years or so before we can be certain.

This shows us that while floods are random and can happen at any time, in the Hawkesbury-Nepean Valley they have tended to occur in a pattern that follows a cycle of droughts and floods.

Which months flood most?

Unlike bushfires, there is no 'flood season'. Since 1794 floods have happened in every month except December. The months where more than 8 floods have occurred are February, March, April, May, June, July and August. However, one of the largest floods recorded occurred outside these months, in November 1961.

Importantly, after a flood there is a greater chance of another flood occurring soon after due to the fact that dams are full and catchment lands are saturated. This is also different to bushfires, which burn the fuel and significantly reduce the risk of another bushfire in the same location.

Floods are random and happen at anytime.

Past floods in the Hawkesbury-Nepean valley



Illustration of 1867 flood at Windsor (Source: Illustrated Times of London/State Library of NSW)



1961 flood in Windsor (Source: Vic Gillespie collection/Hawkesbury City Council Library)



1978 flood at Riverstone (Photo courtesy RAAF)



March 2021 flooding at Gronos Point (Photo by Adam Hollingworth)



March 2022 flooding in McGraths Hill (Photo by Adam Hollingworth)

