

# West Coast valley rises as glaciers retreat

January 22 2015

---



Changes to the geography of the Fox Glacier are clearly visible. Credit: Dr Ian Fuller

Massey University scientists say the dramatic changes to the Fox Glacier are also having dramatic effects on the landscape, with the valley rising by more than a metre in the last two years.

Dr Sam McColl and Associate Professor Ian Fuller, from the Institute of Agriculture and Environment, visited the glacier last week to continue their annual survey of the valley floor. The survey aims to understand

how glacier retreat affects landforms and sediments in the Fox Valley on the South Island's West Coast.

Dr McColl says changes in glacier behaviour, such as calving and [glacial retreat](#), have impacts that extend beyond tourism to affecting the [sediment](#) in the glacial valley. "With this kind of change, we could see the whole valley looking drastically different in a hundred years' time," he says.

He says West Coast glaciers are extraordinarily sensitive to changes in precipitation, temperature, and human interference and respond very rapidly to changes to those climatic parameters. "Changes to the glacier ultimately mean changes to the surrounding sediment and landscape."

"Dramatic phases of retreat, like the one the glaciers are experiencing now, remove the buttress effect provided by the glacier – essentially a door stop that makes the surrounding hillslopes more stable. Without it, the hillslopes are more unstable and likely to fail which leads to more sediment being delivered down-valley. At Fox Glacier, this extra sediment is what has resulted in the valley floor rapidly increasing in elevation."

The Department of Conservation earlier this year announced that the Franz Josef and Fox [glaciers](#) may be accessed only by air. Dr McColl says this was the first time in 11 years that the annual field trip they lead for students was unable to access the glacier. He said while the lack of access was disappointing for the students – as it was for members of the public – it did not prevent them carrying out their detailed study of the adjoining valley.

Provided by Massey University

Citation: West Coast valley rises as glaciers retreat (2015, January 22) retrieved 17 April 2024 from <https://phys.org/news/2015-01-west-coast-valley-glaciers-retreat.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.