

Modern Science Workflows at DairyNZ: Mooving into a new era

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ABSTRACT / INTRODUCTION

While the dairy sector has grown over the last two decades, so has the scope of the issues that need science-led solutions. At the same time, there have been rapid increases in the variety of data sources, and frequency of their observations (e.g. cow wearables, methane measurements, forage botanicals, satellite data). To resolve this required a step change in the capability, infrastructure and business disciplines of DairyNZ, and we folded this into a project called Modern Science Workflows. In terms of capability, we partnered with the University of Waikato to deliver R for Data Science, a paper to upskill postgraduate students and researchers from our organisation, but open to others. For infrastructure, we adopted a secure data warehouse and data compute solution called Snowflake. We also eased access to cloud compute through Posit Workbench. In terms of business disciplines, we encourage and set expectations around proper documentation and use of code-based projects with GitHub.

We also recognise our role as responsible researchers. For example, we have secure storage of data in our warehouse where permissions are controlled for data where required but can be shared with collaborators as needed. As our science disciplines become more aligned with the open science movement, we will be well placed to share appropriately. Areas where we are still developing include how to deliver to the needs for Māori data sovereignty, in particular when we work with Māori farming entities.

While the journey is far from over, a lot of progress can be made in three years – this is our story of mooving into a new era.

ABOUT THE AUTHOR(S)

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Mark is a Strategic Lead in the science team at DairyNZ, working across a number of projects in forages, animals and greenhouse gases. Mark has governance roles for major projects co-funded by government, and is a Chartered Member of the Institute of Directors.

In his roles at DairyNZ, he has been a champion for improved processes for data, aligned with FAIR principles, and led improvement in capability, infrastructure and business disciplines for working with data and code.

