What did I do?

March 2022

- Started at DairyNZ.
- Attending Bayesian Modelling course.
- Started work on Graeme Doole FVI GAMS model.
- Ran BACH hydrograph separation for Toenepi.

April 2022

- Delivered Dairy Systems Report for GHG Inventory project.
- Planned FVI model.
- Continued running BACH hydrograph separation for Toenepi.

May 2022

- Initial implementation of FVI model in Rcpp and initial calibration to FVI data. Added economics.
- Reviewed papers for submission to JNZG.
- Presented NIWA mgcv::gam work to R community.
- Worked on data for GHG Inventory project.

June 2022

- Reviewed management rules for FVI model in Rcpp. Tidied up FVIV silage data. Implemented calibration and reporting.
- Plotted Farmax data for GHG Inventory project.

July 2022

- Calibrated FVI model to FVIV data. Held workshops on FVI model David McCall, Alvaro, Mario, David Chapman, Wendy, Elena. Drafted FVI model milestones. Added calving spread.
- Updated Pasture Potential Tool data to latest DairyBase extract.
- Trained NIWA and GNS scientists to use BACH.
- Joined DairyBase, Milksolids, Dyna, Region data for Greenhouse Gas inventory.
- Revised NIWA TopNet S-Map paper for Channa.

August 2022

- Added calving spread to FVI model. Added 2021 FVIV data to FVI model. Interpolated liveweight data. Rewrote milestones for FVI model.
- Prepared second report for GHG inventory. Imputation of seasonal feed use across all NZ farms.

September 2022

- Imputed and validated seasonal feed use across all NZ farms. Prepared and delivered second milestone report for GHG inventory.
- Assembled and interpolated FVIV liveweight and body condition data for the FVI modelling. Documented the FVI model design. Designed static cow model.
- Sick with Covid.

October 2022

- Added static cow model to JFARM.
- Calibrated JFARM to Scott Farm FVIV data. Drafted Calibration report. Still have energy balance issues.
- Added multi-parameter-set runs to JFARM, in preparation for optimization.

November 2022

- Drafted simple management rules for JFARM and recalibrated to the Scott Farm FVIV Trial data. Added a simple output report. Calculated forage performance values.
- Included the Dairy Stats data into the GHG Inventory project and looked for ways to link it to the Farmax data.

December 2022

- Implemented management optimization in JFARM. Refined Intake model.
- Reviewed Farmax data for GHG project. Requested updated data.
- Christmas holiday.

January 2023

- Tidied up and plotted feed data from Farmax, DairyBase, MPI Report, Dairy Stats for the GHG Inventory project. Requested updated Farmax data. Tried to download Digad data.

February 2023

- Worked on GHG Inventory report for MPI.
- Prepared GHG Inventory presentation for NZAGRC Workshop in Wellington (presented by Jane Kay).
- Leave without pay (Dunedin).

March 2023

- Delivered 3rd milestone report for GHG Inventory to MPI.
- Worked on DIGAD data for GHG Inventory report.
- Fodder beet and Kale analysis for Barbara.

April 2023

- Worked on DIGAD data for GHG Inventory report.
- Downloaded SMAXTEC data for Heat Stress Analysis in NZBIDA.
- Organised and attended Economics Team Day,

May 2023

- Completed and delivered GHG Inventory Report final draft.
- Obtained and analysed NZBIDA Smaxtec sensor data for Heat Stress detection.

June 2023

- Used dbplyr to manage NZBIDA Smaxtec and weather data on Snowflake for Heat Stress detection.
- Explored sampling and clustering methods to detect Heat Stress from Smaxtec data.
- Revised GHG Inventory report to satisfy reviewers and delivered final report.

July 2023

- Attended Economics Team Day.
- Developed model using NZBIDA Smaxtec and weather data for Heat Stress detection.
- Tidied up Abacus Bio data and scripts and repo for NZAEL ILMM Inline Milk Meter project.
- Reviewed FVI cultivar ranking script.

August 2023

- Worked on NZBIDA heat stress model and paper.

September 2023

- Submitted NZBIDA heat stress model paper.
- Annual Leave in China.
- Recoded and tested FVI Calculation legacy code from Cameron Ludeman.
- Tested Dairy Statistics legacy code from LIC.
- Restarted FVI Model work and started writing FVI Model paper.

October 2023

- Drafted FVI JFARM farm optimization paper.
- Assisted with preparing data for Dairy Statistics report.
- Revised NZBIDA heat stress model paper for JDSC.
- Started NZ Region Heat Stress paper for Deep South Climate Change.
- Drafted package management guidelines for Modern Science Workflow project.

November 2023

- Assisted with preparing data for Dairy Statistics report.
- Drafted NZ Region Heat Stress paper for Deep South Climate Change.
- Revised NZBIDA heat stress model paper for JDSC. Now accepted.

December 2023

- Assisted with preparing Dairy Statistics report.
- Drafted NZ Region Heat Stress paper for Deep South Climate Change.
- Christmas and New Year break.

January 2024

- Completed draft NZ Region Heat Stress paper for Deep South Climate Change.
- Preliminary DairyBase bias analysis and document.

February 2024

- Revised NZ Region Heat Stress paper for Deep South Climate Change to updated GHLI.
- Continued DairyBase bias analysis.
- Annual leave in Haikou.

March 2024

- Revised Wayne's GPS paper for JNZG.
- Continued DairyBase bias analysis.
- Revised NZ Region Heat Stress paper for Deep South Climate Change.
- Revised JDSC proof.
- Obtained and plotted smaXtec and WeatherLink data for Shade study.
- Annual Leave in Melbourne, Easter.
- Drafted heat stress mapping abstract for ADSS.

April 2024

- Revised NZ Region Heat Stress paper for Deep South Climate Change.
- Reviewed DairyNZ internal science manuscript.
- Prepared presentation for GHG workshop in Wellington.
- Imported and analysed Halter shade data.

May 2024

- Submitted Deep South Heat Stress Mapping paper to JDS.
- Shade modelling for Frontier Farms project. Drafted science paper for JDS.
- Explored using mean z-score (MRZ) in climate maps.
- Revised and delivered Feed Consumed report for MPI.

- Imported IceQube activity data for heat and pregnancy detection.
- Imported Plantain trial data for heat stress modelling.

June 2024

- Initial look at Plantain trial data for Roshean.
- Shade modelling for Frontier Farms project.
- Fertility modelling for heat detection.
- Started looking at data for MPI GHG Liveweight project.

July 2024

- Advanced shade modelling and paper.
- Initial plots of Liveweight data for MPI project.
- Prepared presentation on Fertility modelling for heat detection.

August 2024

- Advanced shade modelling and paper.
- Presented fertility prediction modelling to Science Panel meeting.
- Submitted Smaxtec paper to ADSS.
- Migrated Pasture Potential Tool to Posit Connect.
- Loaded, analysed and modelled DIGAD liveweight data and prepared draft report for MPI.

September 2024

- Worked on liveweight data and model and report for MPI.

October 2024

- Worked on liveweight data and model and report for MPI.
- Revised Smaxtec and Deep South papers for ADSS.
- Reviewed literature for Estrus detection project.

November 2024

- Completed liveweight report for MPI.
- Prepared Smaxtec and Deep South presentations for ADSS.
- Participated in ADSS conference in Christchurch.
- Reviewed literature for Estrus detection project.