Project name: **Pathogens – Cows in Creeks**

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Issue:
Pastoral agriculture has been implicated as the single largest cause of water pollution in New Zealand. Characteristic concentrations of the favoured faecal indicator organism (Escherichia coli) in agricultural streams are typically around 20 times higher than those in forested catchments, and frequently exceed guidelines for contact recreation. Direct access of livestock to stream channels is thought to be a major cause of diffuse faecal pollution, possibly of comparable overall importance to wash-in of faecal matter from contributing areas of pasture after rainstorms. These pathogens are also delivered to the coastal environment where they may impact on aquaculture activities.

Objective:

- Determine the impact on stream water quality (faecal contamination) of crossing cows through a river and follow the improvements in water quality after the crossings have been bridged.
- Attempt an estimate of yield of bugs to Tasman Bay by determining pathogen concentrations in the Motueka River at Woodman's Bend.

Progress and Outputs:
Davies-Colley, R.J., Nagels, J.W., Smith, R., Young, R. and Phillips, C. (Submitted) Water quality impacts of cows crossing the Sherry River, Tasman District, New Zealand. Water Science and Technology.
Cows in Creeks poster.
Article in Broadsheet – Newsletter of NZ Assoc. of Resource Management. October 2001.

Implications:
Results of this work will continue to feed into our understanding of the sources and significance of pathogens in the Motueka catchment and the implications for aquaculture in Tasman Bay. Our findings would appear also to have important policy implications for livestock management in riparian zones in New Zealand

Future Directions:
Continuation of post-bridge monitoring of water quality in the Sherry River.

Related projects:
Riparian mapping and management
Modelling - IDEAS