

QUALIFICATIONS

BSc (1st Class Hons) Environmental Science,
University of Canterbury, 2003

PROFESSIONAL AFFILIATIONS

New Zealand Freshwater Sciences Society
New Zealand Ecological Society

ROLE AT CAWTHRON

Joe is a Senior Scientist and Project Manager in the Coastal & Freshwater Group. He is involved in a range of freshwater management projects, with a focus on instream flow assessments and freshwater fishery management. His expertise in this area relates to the general ecology and distribution of freshwater fish, hydraulic habitat modelling, fish passage and fish screening.

SPECIAL INTERESTS & ACHIEVEMENTS

Joe's interests are the ecology of freshwater ecosystems and the consequences of human modification. Joe has extensive experience with the Resource Management Act, both in the preparation of supporting documents for consent processes, peer review of AEE's and preparing the giving evidence at council consent hearings. Joe's present research interests are:

- Instream habitat and flow modelling – IFIM; Including 1D (RHYHABSIM) and 2D modelling (River2D)
- Native fish ecology and distribution
- Fish passage and fish screening

SELECTED PUBLICATIONS

Hayes JW, Olsen DA, **Hay J** 2010. The influence of natural variation in discharge on juvenile brown trout population dynamics in a nursery tributary of the Motueka River, New Zealand. *New Zealand Journal of Marine and Freshwater Research* 44: 247-270.

Young RG, Wilkinson J, **Hay J**, Hayes JW 2010. Movement and mortality of adult brown trout in the Motupiko River, New Zealand: effects of water temperature, flow and flooding. *Transactions of the American Fisheries Society* 139: 137-146.

Hay J 2010. Flow Requirements to Maintain Fish Passage in the Whangaehu River and Tokiahuru Stream. Prepared for Mighty River Power. Cawthron Report No. 1816. 11 p.

Hay J 2010. Fish Screening Advice for Proposed Matiri Hydroscheme. Prepared for Department of Conservation. Cawthron Report No. 1814. 9 p.

Hay J 2010. Instream flow assessment options for Greater Wellington Regional Council. Prepared for Greater Wellington Regional Council. Report No. 1770. 53p.



Hay J 2010. Instream Flow Assessment for the Maitai River. Prepared for Environment Southland. Report No. 1757. 35 p.

Hay J 2009. Instream Flow Assessment for the Waiohine River. Prepared for Greater Wellington Regional Council. Cawthron Report No. 1649. 40p.

Harding, J. S., J. E. Clapcott, J. M. Quinn, J. W. Hayes, M. K. Joy, R. G. Storey, H. S. Greig, J. **Hay**, T. James, M. A. Beech, R. Ozane, A. S. Meredith, and I. K. D. Boothroyd. 2009. Stream habitat assessment protocols for wadeable rivers and streams of New Zealand. University of Canterbury Press, Christchurch.

Hay, J. 2009: Effects of low flow on dwarf galaxias and their habitat in the Wairau River. DOC Research & Development Series 309. Department of Conservation, Wellington. 20 p.

Hay J 2009. Changes to Some of Horizons' Instream Habitat Datasets and Recommended Minimum Flows. Prepared for Horizons Regional Council. Cawthron Report No. 1601. 5 p.

Strickland R, **Hay J** 2009. A discussion on fish passage issues and solutions for several hydro-electric development scenarios in the Matakaitaki River. Prepared for Tonkin & Taylor Ltd. Cawthron Report No. 1562. 12 p.

Hay J 2008. Review of Hawke's Bay Regional Council's Instream Habitat Modelling on the Lower Tukituki River. Prepared for Hawke's Bay Regional Council. Cawthron Report No. 1524. 21 p.

Quarterman A, **Hay J** 2008. A Ground Level Survey For The Proposed Moawhiti Wetland Restoration. Prepared for Department of Conservation. Cawthron Report No. 1458. 7p.

Hay J, Kelly D, Holdaway RJ 2008. Causes and consequences of frequent flowering on edges in the mast-seeding genus *Chionochloa* (Poaceae). *New Zealand Journal of Ecology* 32: 80-91.