ALEX JAMES Freshwater Scientist

QUALIFICATIONS

Doctor of Philosophy in Ecology; Massey University, NZ, 2008

Bachelor of Science (1st class Hons) in Ecology; Massey University, NZ, 2002

Bachelor of Science in Ecology, Geology, and Zoology; Victoria University of Wellington, NZ, 2001

AFFILIATIONS

Member, New Zealand Freshwater Sciences Society; 2002–present

Member, North American Benthological Society; 2004–present

FIELDS OF SPECIAL COMPETENCE

Alex James is an intermediate freshwater scientist at EOS Ecology, with seven years combined research and consulting experience specialising in freshwater ecosystems. His ten years of university education has provided Alex a broad background in biological and geological science. For the last eight years Alex has specialised in freshwater ecology, initially at university where he completed a PhD investigating the impacts of reduced stream flow on instream habitat and macroinvertebrate behaviour. Following his university study Alex spent 18 months as a self-employed freshwater ecologist working on projects including aquatic biological surveys, literature reviews, and EnviroLink funded research projects. His expertise lies in understanding the impacts of reduced stream flow, the effects of land use on aquatic systems, and the identification and remediation of fish barriers. In his current position he is responsible for undertaking freshwater aquatic research and consultancy work and project managing a range of freshwater projects.

Alex is familiar with a wide range of aquatic environments and over the years has worked in pristine mountain and forest streams, rural streams, and more recently, urban waterways. Alex has authored or co-authored ten scientific publications and made presentations at numerous conferences. He is now keenly applying his academic knowledge to real world problems in Canterbury and beyond to better strike a balance between the needs of humans with those of aquatic ecosystems.

CAREER HISTORY

June 2009 to current	EOS Ecology Freshwater Scientist
Nov 2007 to June 2009	Self-employed Freshwater Ecologist

RELEVANT EXPERIENCE

- Project management of a range of work including independent research, biological surveys, and literature reviews from inception to conclusion.
- Aquatic Assessment of Environmental Effects (AEEs) relating to stormwater discharges and river crossings (bridges and culverts).
- Auditing of resource consent applications on behalf of Regional Councils, pertaining to water abstraction and stormwater discharges.
- Author of multiple client-oriented reports including aquatic biological surveys of blue duck rivers for DOC, literature reviews on the impacts of European settlement on freshwater resources within the Raukawa and Rohe Potae tribal lands for Massey University, and the assessment and prioritisation for remediation of fish barriers in the Manawatu River catchment for Horizons Regional Council.
- Knowledge of issues pertaining to fish passage and the ability to provide design advice on how new and existing instream structures can be built or modified to allow the free passage of fish.
- Ability to communicate complex information to various audiences from council staff (e.g., presentation of fish barrier prioritisation to Horizons Regional Council staff) to school children (e.g., introducing Year 7 and 8 school children to basic aquatic ecology concepts).
- Extensive field experience including the sampling of benthic, drifting, and hyporheic invertebrates, electrofishing, flow gauging, measurement of physicochemical variables (e.g., water velocity, pH, DO, etc), the installation of experimental equipment (e.g., artificial substrates, data loggers) and the sampling of algae.
- Highly skilled at freshwater invertebrate laboratory processing and taxonomic identification.

SCIENTIFIC PUBLICATIONS

- James A.B.W., Suren A.M. (2009) The response of invertebrates to a gradient of flow reduction – an instream channel study in a New Zealand lowland river. *Freshwater Biology* 54: 2225-2242.
- James A.B.W., Dewson Z.S., Death R.G. (2009) The influence of flow reduction on macroinvertebrate drift propensity and distance in three New Zealand streams. *Journal of the North American Benthological Society* 28: 220-232.
- James A.B.W., Dewson Z.S., Death R.G. (2008) Do stream macroinvertebrates use instream refugia in response to severe short-term flow reduction in New Zealand streams? *Freshwater Biology* 53:1316-1334.
- James A.B.W., Dewson Z.S., Death R.G. (2008) The effect of experimental flow reductions on macroinvertebrate drift in natural and streamside channels. *River Research and Applications* 24:22-35.
- Dewson Z.S., James A.B.W., Death R.G. (2007) Invertebrate community responses to experimentally reduced discharge in small streams of different water quality. *Journal of the North American Benthological Society* 26:754-766.
- Dewson Z.S., James A.B.W., Death R.G. (2007) Stream ecosystem functioning under reduced flow conditions. *Ecological Applications* 17: 1797-1808.
- Dewson Z.S., James A.B.W., Death R.G. (2007) Invertebrate responses to short-term water abstraction in small New Zealand streams. *Freshwater Biology* 52: 357-369.
- Dewson Z.S., James A.B.W., Death R.G. (2007) A review of the consequences of decreased flow on instream habitat and macroinvertebrates. *Journal of the North American Benthological Society* 26:401-415.
- James A.B.W., Henderson I.M. (2005) Comparison of coarse particulate organic matter retention in meandering and straightened sections of a third-order New Zealand stream. *River Research and Applications* 21: 641-650.
- Dewson Z.S., Death R.G., James A.B.W. (2003) The effect of water abstractions on invertebrate communities in four small North Island streams. *New Zealand Natural Sciences* 28: 51-65.

SELECTED CONFERENCE PAPERS

- New Zealand Freshwater Sciences Society, November 2009. *Restoration of coastal wetland outlet streams – prioritisation to get the biggest bang for your buck.* Oral presentation at annual conference in Whangarei.
- New Zealand Freshwater Sciences Society and Australian Limnological Society, December 2007. *The response of invertebrates to a gradient of flow reduction – an instream channel study in a New Zealand lowland river* Poster presentation at joint conference in Queenstown.
- New Zealand Freshwater Sciences Society, November 2006. *What happens to in-stream habitat condition when flow is reduced?* Oral presentation at annual conference in Rotorua.
- North American Benthological Society, June 2006. *Do New Zealand stream invertebrates use the hyporheic zone as a low flow refuge?* Oral presentation at 54th annual meeting in Anchorage, Alaska, USA.
- New Zealand Freshwater Sciences Society, November 2006 and North American Benthological Society, June 2006. *What are the effects of water abstraction on small streams?* Poster presentation, co-authored with Zoë Dewson and Russell Death at these two conferences.
- New Zealand Freshwater Sciences Society, August 2005. *Do New Zealand stream invertebrates use the hyporheic zone as a low flow refuge?* Oral presentation at annual conference in Nelson.

SELECTED REPORTS

- James A.B.W., Joy M.K. (2009) Prioritisation for restoration of out-flow stream habitat of coastal wetlands on the west coast of the Manawatu-Wanganui region. Horizons Regional Council EnviroLink Contract: 644-HZL
- James A.B.W. (2008) Ecology of the New Zealand Lamprey (Geotria australis). Wanganui Conservancy Publication 2008/1, Department of Conservation.
- James A.B.W., Joy M.K. (2008) A preliminary assessment of potential barriers to fish migration in the Manawatu River catchment, North Island, New Zealand. Horizons Regional Council EnviroLink Contract: 437-HZLC45
- James A.B.W., Dewson Z.S. (2008) The effects of water supply intakes on macroinvertebrate communities in the Waikato Region during summer 2008. Environment Waikato Technical Report 2008/41, Environment Waikato.