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, Environment Institute of Australia and New Zealand (EIANZ); 2011–present

FIELDS OF SPECIAL COMPETENCE

Alex James is a freshwater scientist at EOS Ecology, with nine years combined research and consulting experience specialising in freshwater ecosystems. Ten years of university education has provided Alex with a solid theoretical base, which he now applies to real-world issues. His expertise lies in applied freshwater ecology, especially stream restoration and the impacts of land use changes, stormwater discharges, reduced flows, and infrastructure development on freshwater environments.

At university, Alex completed a PhD investigating the impacts of reduced stream flow on instream habitat and macroinvertebrate behaviour and authored or co-authored ten scientific publications. In the commercial arena, Alex has authored numerous literature reviews and monitoring, research, and consent-related reports. He has undertaken audits of resource consent applications on behalf of regional councils and provided expert evidence at hearings. He has developed customised field programmes for large infrastructure projects and is skilled at managing projects from the conceptual stage all the way to providing outputs that exceed client expectations. Alex is also happy to get his hands dirty and over the years has worked in a range of environments, from pristine mountain and forest streams, to rural streams, urban waterways, and even those on Campbell Island in the southern ocean. As such, he is familiar with many of New Zealand's freshwater environments.

Alex believes in making science-based decisions while at the same time being pragmatic and always aims to strike a balance between the needs of humans and those of aquatic ecosystems. After being based in Christchurch for five years, Alex has returned to the lower North Island, where he has established EOS Ecology's Palmerston North office. Having grown up and been educated in the lower North Island, Alex is excited to return to the region and be at the forefront of EOS Ecology's physical presence outside the "mainland".

CAREER HISTORY

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

EXPERIENCE

- Project management of a range of work including biological surveys, applied research, and literature reviews from inception to conclusion.
- Comprehensive understanding of land use impacts on aquatic ecosystems and design of appropriate programmes to assess and monitor such impacts.
- Author of numerous literature reviews, monitoring and investigation reports, and consent-related client reports (including AEEs, SARs, and NORs) relating to freshwater management, sediment sources, stormwater effects, stream restoration, land development, and infrastructure projects.
- Auditing of resource consent applications on behalf of regional councils, pertaining to water abstraction, stormwater and wastewater discharges, and channel maintenance.
- Stream restoration and rehabilitation through the design and installation of new channels and features to improve habitat. This has included working on the ground with contractors to ensure ecological benefits are maximised plus undertaking monitoring of stream naturalisation effects.
- Knowledge of issues pertaining to fish passage and providing design advice on how new and existing instream structures can be built or modified to allow the free passage of fish. Undertaking assessment and prioritisation for remediation of fish barriers in the Manawatu River catchment for Horizons Regional Council.
- Research into stream sediment sources and stormwater treatment system effectiveness for various councils.
- Ability to communicate complex information to various audiences including council staff, undergraduate university students, community groups, and school children.
- Extensive field experience including the sampling of benthic, drifting, and hyporheic invertebrates, electrofishing, algal sampling, flow gauging, measurement of physicochemical variables (e.g., water velocity, pH, DO, etc), and the installation of experimental equipment (e.g., artificial substrates, data loggers, etc).
- Skilled at freshwater invertebrate laboratory processing and taxonomic identification and at performing freshwater invertebrate sample processing quality control (QC) procedures.

PUBLICATIONS, REPORTS, & CONFERENCE PAPERS (SELECTION FROM 2003–2014)

- James, A. 2014. Northern Arterial Motorway – aquatic assessment of environmental effects. EOS Ecology Report No. 12058-OPU01-01. 77 p.
- James, A. 2014. Aquatic assessment of environmental effects – Western Belfast Bypass, Christchurch. EOS Ecology Report No. 11037-OPU01-01. 43 p.
- McMurtrie, S., James, A. & Meurk, C.D. 2013. Avon River Precinct, North & East Frames ecology report - turning aspiration into action. EOS Ecology, Christchurch, New Zealand. EOS Ecology Report No. 12033-OPU01-01. 90 p.
- James, A. 2013. Long-term monitoring of aquatic invertebrates and fish: Styx River catchment 2013. EOS Ecology, Christchurch, New Zealand. EOS Ecology Report No. 12074-CCC02-01. 50 p.
- Pinder, A.M. & James, A. 2013. A new species of *Macquaridrilus* (Annelida: Clitellata: Naididae) from subantarctic Campbell Island. *New Zealand Journal of Zoology* 41: 114-123.
- James, A. & McMurtrie, S. 2013. Revitalising New Zealand's most urbanised river – putting theory into practice. EOS Ecology, Christchurch. The New Zealand Freshwater Sciences Society, New Zealand Marine Sciences Society, and Australian Society for Fish Biology joint conference. University of Waikato, Hamilton, August 2013.
- James, A. & McMurtrie, S. 2012. Post-quake ecology of the lower Avon River: current state of the fish and invertebrate community. EOS Ecology, Christchurch, New Zealand. EOS Ecology Report No. 11012-CIV01-01. 27 p.
- James, A. 2012. Ecological improvements from the naturalisation of No. 2 Drain. EOS Ecology, Christchurch, New Zealand. EOS Ecology Report No. 06060-CCC01-02. 42 p.
- James, A. & McMurtrie, S. 2012. Shallow earthquakes, deep river: assessing the state of the lower non-wadeable Avon River following the Canterbury earthquakes. EOS Ecology, Christchurch. The New Zealand Freshwater Sciences Society conference. University of Otago, Dunedin, December 2012.
- James, A. 2011. Sites of high ecological value within the Malvern and Ellesmere water race schemes. EOS Ecology, Christchurch. EOS Ecology Report No. 10016-SDC01-02. 16 p.
- James, A. & McMurtrie, S. 2011. Christchurch February earthquake - effect on aquatic invertebrates. EOS Ecology, Christchurch. EOS Ecology Report No: 11010-CIV01-01. 11 p.
- James, A. 2010. Aquatic assessment: stormwater system for the Living 'G' (Northwest Belfast) zone. EOS Ecology, Christchurch. EOS Ecology Report No. 09008-CAR01-02. 40 p.
- James, A. & McMurtrie, S. 2010. Sleuthing for sediment – identifying sediment sources in a peri-urban stream. EOS Ecology, Christchurch. The New Zealand Freshwater Sciences Society conference. Chateau on the Park, Christchurch, November 2010.
- James, A. & McMurtrie, S. 2009. Sources of sediment input into Cashmere Stream. EOS Ecology, Christchurch. EOS Ecology Report No. 08031-ENV01-01. 54 p.
- James, A. & 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. & 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. & Joy, M. 2009. Restoration of coastal wetland outlet streams – prioritisation to get the biggest bang for your buck. EOS Ecology, Christchurch. The New Zealand Hydrological and Freshwater Sciences Societies joint conference. Forum North, Whangarei, November 2009.
- 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.
- James, A. & 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. & 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.
- 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.