



## Nick Carter

### Qualifications

MSc Biology (Hons), University of Waikato  
BSc Biology and Earth Science, University of Waikato

### Career Summary

Nick has over 14 years of experience as a freshwater ecologist and has been a consultant ecologist since 2004. Nick specialises in project management, aquatic resource surveys, compliance monitoring, evidence preparation, ecological values assessments and assessment of effects (AEEs and EIAs) for clients across the public and private sectors. Nick has a strong consulting background and focuses on providing workable and sustainable outcomes for clients. Nick has worked on a wide range of small and large projects throughout New Zealand and the Pacific Islands for mining, quarrying, dairy, pulp and paper, power generation, water supply, local and regional government and urban development clients.



### Employment Record

#### ***Senior Freshwater Scientist/Office Manager/Project Manager – Freshwater Solutions Ltd 2014 to present***

Responsible for project management, preparing budgets and invoices, health and safety, marketing, client and business development, preparation of proposals, technical report writing and reviews, and managing the Freshwater Solutions Ltd Auckland office.

#### ***Freshwater Ecologist/Project Manager – Kingett Mitchell Limited and Golder Associates (NZ) Limited 2004 to 2014***

Member of a multidisciplinary water management team responsible for project management, mentoring junior ecologists, preparation of budgets and invoices, health and safety committee member, preparation of proposals, technical report writing and technical reviews.

#### ***Environmental Officer/Aquatic Ecologist – Environment Waikato 2003 to 2004***

Part of the Environment Monitoring Team and responsible for field work, taxonomy and report writing for the Regional Estuary Monitoring Programme for Raglan Harbour and the Firth of Thames.

#### ***GIS Technician/Project Administrator – Transport for London 2000 to 2003***

Responsible for monitoring, maintaining and purchasing road/highway assets in South East London through on-site surveys and maintenance of the GIS database.

### ***Freshwater Ecologist Technician – Environment Bay of Plenty 1995 to 2000***

Responsible for macroinvertebrate sampling for the freshwater ecology Natural Environment Regional Monitoring Network (NERM) and various surveys of fish, periphyton and plankton for Council.

### **Selected Project Experience**

#### **Stream Restoration**

**Bayside Restoration Project – North Shore City Council.** Application of the SEV method to assess ecological improvements through restoration of an urban stream in the Bayside Restoration Project.

**Pine Ridge Restoration Project – North Shore City Council.** Application of the SEV method to assess ecological improvements after restoration of an urban stream in the Pine Ridge development as part of a local community restoration project.

#### **Environmental Compensation Assessments**

**Environmental compensation assessment for bridge construction – ONTRACK.** Assessed ecological values using the SEV method and determined the extent of compensation required using the ECR for proposed bridge replacement works on three Rodney District waterways.

**Piping watercourse in the Weiti Stream catchment – Silverdale Estates Limited.** Collected SEV data from impact and restoration stream sections and undertook an ECR assessment to determine offset compensation requirements.

#### **Catchment-Wide Aquatic Resource Surveys**

**Redhills streamwalk survey – Auckland Council.** Surveys of waterways in the Redhills catchment using the Auckland Council Specifications for streamwalks and hand-held GIS palm pads and provided technical reviews of report and figures.

**Omaru streamwalk survey – Auckland Council.** Surveys of waterways in the Omaru catchment using the Auckland Council Specifications for streamwalks and hand-held GIS palm pads and provided technical reviews of report and figures.

**Hingaia Stream catchment ICMP – Papakura District Council.** Extensive ecological and water quality surveys of streams in the Hingaia catchment and assisted with data analysis and reporting of information.

**Kenderdine ICMP – Fraser Thomas Limited.** Ecological survey and reporting of data, values and identifying areas requiring greater protection for the Kenderdine stormwater system as part of the ICMP.

**Waiuku ICMP – Franklin District Council.** Ecological survey and reporting of data, values and identifying areas requiring greater protection for the Waiuku stormwater system as part of the ICMP.

**Patumahoe ICMP – Franklin District Council.** Ecological survey and reporting of data, values and identifying areas requiring greater protection for the Patumahoe stormwater system as part of the ICMP.

**Twin Streams ecological monitoring – Eco Water Solutions.** Catchment-wide survey of habitat and macroinvertebrates as part of an investigation and assessment of state of the environment and pressures on aquatic ecosystems in Waitakere City.

**Stream classification – Metrowater.** Ecological surveys of Auckland City streams using the Auckland City stream classification framework and recommending improvements to the method.

**Wellington urban stream survey – Wellington Regional Council.** State of the environment reporting and classification of urban stream health in Wellington City.

**Wairarapa urban stream survey – Wellington Regional Council.** State of the environment reporting and classification of urban stream health in Wellington City.

### **Stormwater & Wastewater**

**Compliance monitoring for Wellsford WWTP – Rodney District Council.** Ecological survey and reporting to assess effects of the Wellsford WWTP discharge on the Hoteo River receiving environment to meet consent conditions.

**Effects of wastewater overflows on ecology – Waitakere City Council.** Survey and assessment of effects from wastewater overflows on water quality and ecology in Waitakere City urban streams and discuss long term effects.

**AEE for Kumeu/Huapai WWTP – Rodney District Council.** Survey of baseline aquatic and terrestrial ecology in the Kumeu and Waimauku catchments for a consent application to develop a new WWTP.

**WWTP ecology monitoring programme design – Rodney District Council.** Design and implement monitoring programme for the Huapai WWTP for the use by WWTP staff to meet consent requirements.

**Compliance monitoring for Wellsford WTP – Rodney District Council.** Assess effects of backwash discharged to the Hoteo River from the Wellsford municipal WTP.

**Compliance stormwater monitoring – Waihi District Council.** Survey and reporting of ecological results assessing the effects of urban stormwater discharges to urban Waihi streams.

### **Spill Response**

**Methyl violet dye spill to the Oruarangi Creek – Auckland Council.** Assessed effects of a toxic dye spill into the freshwater and estuarine environments, cataloged biota mortality and recommended mitigation for a potential prosecution case.

**Diesel spill into the Ngakaroa Stream – Auckland Council.** Assessed effects of a diesel spill into the freshwater environment, cataloged biota mortality and recommended mitigation measures for a potential prosecution case.

**Diesel spill into Mihini Road stormwater ponds – Auckland Council.** Assessed effects of a diesel spill into stormwater ponds and the receiving stream environment for a potential prosecution case.

**Oil spill from Wheao Power Station into the Wheao River – TrustPower Ltd.** Assessed water quality and effects on macroinvertebrates from an oil spill from the Wheao Power Station into the Wheao River as part of a potential prosecution case.

**Diesel spill into stormwater – Babbage Consultants.** Monitored water quality and visual effects of a diesel spill into the stormwater network and receiving environment in South Auckland for a potential prosecution case.

### **Mining Industry**

**AEE for development of the Mangatangi Coal Mine – Glencol Ltd.** Assessment of baseline ecology and effects for a consent application to develop the Mangatangi Coal Mine in the lower Waikato.

**Baseline and impact assessment (ESIA) for Solomon Islands Nickel Project – Sumitomo Metal Mining Co. Ltd.** Component lead for an IFC compliant ESIA of baseline ecology and values in the Heple, Nuha and Jejevo catchments and compiling an impact assessment (critical habitat, key questions, valued components, linkage analysis, mitigation and impact analysis) for the proposed Solomon Islands Nickel Project, Santa Isabel, Solomon Islands.

**Baseline ecology and impact assessment (EIA) for the Waisoi Project – Namosi Joint Venture.** Component lead for an IFC compliant EIA of baseline ecology and values throughout the Rewa, Waidina, Waisoi and Wainavadu River catchments for a proposed gold and copper mine on Viti Levu, Fiji.

**Baseline survey for proposed Nickel Mine – Intex Resources.** Component lead for an IFC compliant baseline assessment of freshwater ecology in large river catchments for a proposed nickel mine on Mindoro, Philippines, for the Mindoro Nickel Project.

**AEE for West Coat coal mine – Pike River Coal Mine Company.** Baseline survey in a remote location and reporting to describe ecological values of the receiving environment for an underground coal mine.

**AEE for coal ash deposition in Smiths Lake – Solid Energy.** Ecological survey and reporting of ecological characteristics and values in the Waikokowai Stream and Awaroa Stream for an AEE to deposit coal ash into a small lower Waikato lake.

**AEE for stream diversion and mine expansion – Takitimu Coal Ltd, subsidiary of Bathurst Resources.** Survey of habitat, periphyton, invertebrates and fish and reporting of results in an AEE for the application to divert a watercourse associated with expanding the mine footprint.

**AEE for proposed Maramarua K4 coal mine – Solid Energy.** Assessment of baseline habitat and invertebrate ecology in the Mangatangi/Maramarua River and Whangamarino Wetland for the proposed Maramarua K4 coal mine.

**Compliance monitoring of ecology and effects of gold mine wastewater discharges – Newmont.** Survey and reporting of habitat, periphyton, invertebrates and fish populations to assess effects of treated wastewater discharges from a gold mine into the Ohinemuri River.

**Compliance monitoring of fish populations and tissue metals concentrations – Newmont.** Comprehensive catchment wide fish population surveys and collection of eel and bully using an EPA methodology for the analysis of tissue metals concentrations.

**Compliance monitoring of WWTP discharge from rehabilitated Benneydale mine – Solid Energy.** Survey and reporting of effects on habitat, periphyton, invertebrates and fish associated with a treated discharge from the rehabilitated Benneydale mine.

**Compliance monitoring of ecology and effects of Rotowaro coal mine wastewater discharges – Solid Energy.** Assess effects of the WWTP discharge from the Rotowaro CTP on habitat, periphyton and invertebrates in Awaroa Stream.

**Compliance monitoring of ecology and effects of Pike River coal mine wastewater discharges – Pike River Coal Company.** Ecology and water quality compliance monitoring and reporting for a wastewater discharge to the Pike River and Big River and involved survey work in a remote location.

**Compliance monitoring of treated discharge from rehabilitated gold mine - Coeur Gold Ltd.** Ecological survey and reporting of effects of discharge from the rehabilitated Golden Cross Gold Mine to the Waitekauri Stream.

**Compliance monitoring of treated discharge from Roa Coal Mine – Roa Mining Company.** Ecological surveys and reporting of results assessing effects of a treated discharge from a coal mine to Paparoa Creek, West Coast.

**Mudfish survey for proposed Mangatangi Mine – Glencoal Ltd.** Survey of mudfish in small Waikato streams draining pasture using nationally recognised protocols for a proposed coal mine site.

**Mudfish survey in small lake in lower Waikato – Solid Energy.** Extensive mudfish survey using standard national protocols to assess mudfish populations in a small lower Waikato lake for compliance purposes.

## **Quarrying Industry**

**AEE for increasing Hunua Quarry footprint – Winstone Aggregates Limited.** Catchment wide survey of aquatic ecology in the Taitaia, Hays, Symonds, and Waihoihoi catchments to assess effects of expanding the Hunua Quarry footprint.

**Ecology review for Brookby Quarry expansion – Auckland Council.** Review of baseline ecology and effects associated with expansion of the Brookby Quarry.

## **Pulp & Paper**

**AEE for WWTP discharge to the Tarawera River – Norske Skog Pulp and Paper Mill.**

Comprehensive longitudinal survey of habitat, aquatic flora and invertebrates along the Tarawera River and preparation of an AEE for re-consenting purposes.

**Compliance monitoring of WWTP discharge – Norske Skog Pulp and Paper Mill.** Survey of habitat, aquatic flora and invertebrates in the Tarawera River as part of compliance monitoring of effects associated with a pulp and paper mill discharge.

**AEE for WWTP discharge to the Whangaehu River – Winstone Pulp International Limited.**

Longitudinal survey and reporting of ecology in the Whangaehu River to assess effects of the discharge from a pulp and paper mill.

**AEE for water take from the Tokiahuru Stream – Winstone Pulp International Limited.** Assess ecological effects of an industrial water take from the Tokiahuru Stream.

**Compliance monitoring of periphyton and heterotrophic biofilms – Winstone Pulp International Limited.** Regular monitoring of periphyton and heterotrophic biofilms in the Whangaehu River and reporting of results for compliance purposes.

**Compliance monitoring of water take from Tokiahuru Stream – Winstone Pulp International Limited.** Survey of fish populations upstream and downstream of an industrial water take from the Tokiahuru Stream to assess fish passage.

## **Dairying industry**

**AEE for discharging treated dairy effluent to land – Miraka Ltd.** Ecological survey of the Mokauteure Stream catchment to assess effects of overland runoff of treated dairy effluent to waterways for a resource consent application.

**AEE for re-consenting stormwater discharge from Takaka site – Fonterra Co-operative Group Limited.** Ecology and water quality survey and reporting for an AEE to re-consent stormwater discharges from the Takaka site to waterways.

**AEE for replacement of water intake structure at Te Rapa site – Fonterra Co-operative Group Limited.** Description of ecology in the Waikato River and assessed effects of replacing the existing water intake structure for the Te Rapa site on aquatic ecology.

**Compliance monitoring of WWTP discharge from Pahiatua site – Fonterra Co-operative Group Limited.** Continuous temperature/DO and longitudinal ecology survey to assess effects of the treated WWTP discharge from the Pahiatua site to Mangatainoka River.

**Compliance monitoring of stormwater discharge from Hautapu site – Fonterra Co-operative Group Limited.** Ecological survey and reporting of results assessing effects of stormwater discharge from the Hautapu site to a small lowland Waikato stream.

**Compliance monitoring of WWTP discharge from Hautapu site – Fonterra Co-operative Group Limited.** Longitudinal survey of water quality and ecology in the Waikato River to assess effects of a WWTP discharge from the Hautapu site.

**Compliance monitoring of WWTP discharge from Te Rapa site – Fonterra Co-operative Group Limited.** Continuous temperature and longitudinal survey of ecology in the Waikato River to assess effects of a treated WWTP discharge from the Te Rapa site.

### **Power Industry**

**AEE to determine residual flows for Kaimai HEPS – Trustpower Ltd.** Assessed ecology and recommended residual flows in rivers within the Kaimai Hydroelectric Power Scheme for the optimisation of hydro lake levels.

**AEE for the Lake Coleridge and Rakaia Water Conservation Order – Trustpower Ltd.** Extensive fisheries and habitat surveys throughout the Rakaia River catchment to assess effects of the proposed Lake Coleridge Project on native fish against the provisions of the Rakaia Water Conservation Order.

**AEE for the Puketiro Wind Farm – RES NZ Ltd.** Catchment wide assessment of habitat, invertebrates and fish communities and assessment of effects for the proposed Puketiro Wind Farm near Wellington.

**AEE for the Rodney Power Station – Genesis Energy Limited.** Baseline assessment of ecology in the lower Kaipara River for a natural gas fired combined cycle power station near Helensville.

**AEE for Tauhara Power Station Stage 2 – Contact Energy Ltd.** Baseline assessment of ecology in geothermal influenced waterways for the consent application to develop Stage 2 of the 250 MW Tauhara Power Station near Taupo.

**AEE for development of the Kawerau Power Station – Mighty River Power.** Assessed ecology in the Tarawera River for the ecological component for the resource consent application to develop a 100 MW geothermal power station near Kawerau.

**Compliance monitoring of koura in Lake Mangaonui – Trustpower Ltd.** Survey of koura in Lake Mangaonui to assess effects of a change in the operating range of a hydro lake for the generation of power by the Kaimai Hydroelectric Power Scheme.

**Compliance monitoring of operating range effects for Matahina Dam – Trustpower Ltd.** Survey to assess effects of the operating range of the Matahina Dam on aquatic ecology in the Rangataiki River.

### **Water Resources**

**Minimum flow assessment for Hoteo River – Rodney District council.** Determined a minimum flow for the Hoteo River based on habitat-flow modelling using WAIROA to ensure adequate flow for fish for a proposed municipal water take.

**Minimum flow assessment for Mahurangi River – Rodney District council.** Determined a minimum flow for the Mahurangi River based on habitat-flow modelling using WAIROA to ensure adequate flow for fish for an existing municipal water take.

**Minimum flow assessment for increasing potable water take from Ohirangi and Mangakura streams – Rodney District council.** Assessed effects of increasing future potable water supply for Helensville on ecology in the Ohirangi and Mangakura streams using WAIORA.

### **Urban Development**

**Ecological assessment for re-zoning for commercial purposes – Southern Gateway Consortium.** Assessed baseline ecology and values of waterways within the Puhinui Stream catchment in support of re-zoning horticultural land for commercial purposes.

**Ecology and objectives for Vaughans Stream – North Shore City Council.** Comprehensive survey, data analysis and reporting of ecological data for input into the structure plan for a large urban development at Long Bay, Auckland.