

3 June 2009

Sefulu Sione  
Executive Office  
Freepost Board of Inquiry - Water  
c/o Ministry for the Environment  
PO Box 10362  
WELLINGTON 6143

**PROPOSED FRESHWATER MANAGEMENT NATIONAL POLICY STATEMENT**

1. We act for Genesis Energy who lodged a comprehensive submission on the Proposed Freshwater Management National Policy Statement.
2. The Board of Inquiry's Hearing Directions require that submitters lodge any expert evidence by 3 June 2009.
3. While Genesis Energy will not be providing any additional expert evidence, in order to assist the Board, we attach a bibliography of technical reports and studies which supplement the Genesis Energy submission (copies of which can be provided). These reports and studies provide the technical basis and context for freshwater management regimes managed by Genesis Energy.
4. At the hearing on 23 June 2009, Genesis Energy will be represented by legal counsel and Genesis Energy management who will be available to answer any questions from the Board of Inquiry.

Yours faithfully



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## Genesis Energy Freshwater Management Bibliography

This bibliography records a range of technical reports and studies that inform current freshwater management regimes within and associated with the Tongariro, Waikaremoana and Kourarau Hydro-electric Power Schemes, and the Huntly Power Station on the lower Waikato River. The references are split by scheme/power station and are further divided into general scheme management; lake/wetland management; and river/stream management.

The technical reports and studies listed have been commissioned over a number of years as part of the effective, ongoing management of Genesis Energy's generation assets, including: resource consent acquisition; resource consent management, third party agreements; or non-statutory initiatives that reflect responsible resource management by the company.

In many cases, references reflect ongoing annual reporting on various aspects of freshwater management by Genesis Energy. Where this is the case, the latest reference is quoted and it can be assumed that relevant data from previous years are incorporated within, or have informed, the most recent reference. In this respect, these references reflect, or provide a basis for, the current environmental practises used by Genesis Energy in the company's management of freshwater resources.

It should also be noted that there are numerous other references, not included here, that resulted from extensive investigative work leading up to the applications for resource consents for: the Huntly Power Station in 1994 (refer section 3.1); the Waikaremoana Power Scheme in 1998 (refer Section 2.1), the Tongariro Power Scheme in 2000 (refer Section 1.1); and the Kourarau Power Scheme in 2001 (refer Section 4.1). Many detailed statements of evidence related to freshwater management associated with these consenting processes that have not been outlined in this bibliography either.

### 1.0 Tongariro Power Scheme

#### 1.1 General Scheme Management

Genesis Power Limited (2000): Tongariro Power Development – Assessment of Environmental Effects.

Genesis Energy (2007): Tongariro Power Scheme – Environmental Report 1 December 2004 to 30 June 2006

Genesis Energy (2007): Tongariro Power Scheme – Annual Environmental Report 2006/07

Genesis Energy (2008): Tongariro Power Scheme – Annual Environmental Report 2007/08

## 1.2 Lake/Wetland Management

Cheal Consultants Ltd, 2007: Lake Moawhango Shoreline Erosion Baseline and Photo Point Survey. Report No. 2006-32. Unpublished Report for Genesis Energy Limited. Cheal Consultants Ltd, Taupo. 78pp.

Cheal Consultants Ltd, 2009: Lake Moawhango Photo Point Survey. Report No. 2006-32. Unpublished Report for Genesis Energy Limited. Cheal Consultants Ltd, Taupo. 63pp.

Rowe, D., Waugh, B., Konui, G., 2008: Lake Rotoaira 2007/08: Water quality, macrophytes and trout fishery monitoring results. NIWA Client Report HAM2008-110. NIWA Project: GPL07202. Unpublished Report for Genesis Energy. NIWA Hamilton. 33pp.

## 1.3 River/Stream Management

Arcott, D. 2008: Tongariro integrated monitoring programme: Summary of Results for 2007–08. NIWA Client Report CHC2008-069. NIWA Project: GPL07501. Unpublished Report for Genesis Energy. NIWA Hamilton. 64pp.

Beath, A, 2009: Blue duck (whio) monitoring on the Western Diversion Streams (Mangatepopo, Whanganui & Whakapapa) December 2008. Unpublished report for Genesis Energy. Department of Conservation, Mount Ruapehu. 21pp

Boubee, J., Stevenson, C., 2009: Fish in the Upper Whanganui River Catchment above and below the Western Diversion – 2008. NIWA Client Report HAM2008 -107. NIWA Project: GPL07208. Unpublished Report to Genesis Energy. NIWA Hamilton. 31pp.

Franklin, P.; Smith, J. 2009: A synoptic assessment of fish communities at the Waihianoa Aqueduct. NIWA Client Report HAM2009-200. NIWA Project: GPL09208. Unpublished Report for Genesis Energy. NIWA Hamilton. 33pp.

Oates, K.E. 2008a: Blue Duck Monitoring on the Tongariro River, Tongariro Power Development. Independent Study Report No. 10326. Unpublished report for Genesis Energy. Enviro Research Ltd, Ohakune.

Oates, K.E., Donald, S. 2009: An assessment of the status and extent of blue duck populations within the Tongariro River catchment with a ten year comparison 1998 to 2008. Independent Study Report No. 10380. Unpublished report for Genesis Energy. Enviro Research Ltd, Ohakune.

Opus International, 2009: The effect of flushing the Moawhango River on sediment deposition and ecology of the Rangitikei River. Client Report Reference 350734.00. Unpublished Report for Genesis Energy. Opus International Consultants Ltd, Wellington. 60pp.

Story, R. 2009: Tongariro integrated monitoring programme: Summary of Results for 2008–09. NIWA Client Report CHC2009-0xx. NIWA Project: GPL07501. Unpublished Report for Genesis Energy. NIWA Hamilton. 68pp.

Suren, A., Biggs, B. and Weatherhead, M. 2002: Moawhango River: Suggested biological metric to meet consent requirements, and quantification of the effect of increased residual flows. National Institute of Water and Atmospheric Research Ltd, Christchurch.

Wilson, B. 2009. Whakapapa River: 2002 - 2009 Drift Dive Surveys. Unpublished report for Genesis Energy. Auckland/Waikato Fish & Game Council, Hamilton. 4pp

## 2.0 Waikaremoana Power Scheme

### 2.1 General Scheme Management

Genesis Power Limited (1998): Waikaremoana Power Scheme – Assessment of Effects on the Environment.

Genesis Energy (2008): Waikaremoana Power Scheme – Annual Environmental Report 2007/08

### 2.2 Lake/Wetland Management

Pitketheley R.; Kusabs I., 2005 – Waikaremoana Hydropower Scheme: Brown Trout Monitoring Programme. Report number 5 prepared for Genesis Energy Power Ltd.

Shaw, W.B., 1998 – Lake Waikaremoana Shoreline Vegetation. Wildland Consultants Ltd, Rotorua. Contract Report No. 151. Prepared for the Electricity Corporation of New Zealand. 116pp.

Single, M., 2005 – Assessment of Lake Waikaremoana Shore Morphology Monitoring Programme. Land and Water Studies International Ltd, Christchurch. Unpublished Report to Genesis Energy. 13pp.

Single, M.; Shaw W., 2005 – Lake Waikaremoana Shore Monitoring Objectives and Methodology. Land and Water Studies International Ltd, Christchurch and Wildland Consultants, Rotorua. Unpublished Report to Genesis Energy. 17pp.

Single, M., 2008: Lake Waikaremoana Shoreline Landform Monitoring – 2008 Shore Inspection. Shore Processes and Management Ltd, Christchurch. Unpublished Report prepared for Genesis Energy. 15pp.

Wells, R.; de Winton, M.; Edwards, T., 2008 – Lake Waikaremoana 2008 monitoring using aquatic plant indicators. NIWA Client report: HAM2008-066, February 2008. NIWA Project GPL08216. Unpublished Report to Genesis Energy. 15pp.

Wildland Consultants, 2008 – Lake Waikaremoana Shoreline Vegetation Monitoring: 2008 Progress Report. Contract Report No. 1949, Wildland Consultants, Rotorua. Prepared for Genesis Energy. 60pp.

## 2.3 River/Stream Management

Boubee, J., Bowman, E., Martin, M., Tipuna, M., 2008: Waikaremoana Power Scheme – Monitoring of elver trap and transfer programme – 2007-08. NIWA Client Report HAM:2008-109, April 2008. NIWA Project GPL06212. 39pp.

Kusabs, I., 2002 – Waikaremoana Hydropower Scheme: The impact of recreational flow releases on the trout population in the Waikaretaheke River. Report number three prepared for Genesis Energy Ltd.

Scarsbrook M., Bowman E., 2003 – Effects of changes to minimum flows on macroinvertebrate community composition of the Waikaretaheke River: Final Report. NIWA, Hamilton. Unpublished Report to Genesis Energy.

Strickland, R., 1996 – Fish of the Waikaretaheke and Wairoa Rivers, Hawkes Bay. Unpublished Report for ECNZ. River, Lake and Sea.

Tonkin & Taylor, 2009: Waikaretaheke River: Ecological Assessment. Client Report Reference 26045. Unpublished Report to Genesis Energy. Tonkin & Taylor Ltd, Auckland. 24pp;

## 3.0 Huntly Power Station

### 3.1 General Scheme Management

ECNZ, (1993): Huntly Power Station; Assessment of Water-Related Environmental Effects.

[This document draws on over fifty references to technical supporting documents]

### 3.2 River/Stream Management

Baker, C. F.; Grayling, S.; Smith, J. (2007). Huntly Power Station – Larval fish monitoring 2007. NIWA Client Report HAM2007-139. NIWA, Hamilton. 55 p.

Baker, C.F. (2005). Huntly Power Station – Fish migration monitoring 2004/05. NIWA Client Report HAM2005-114. NIWA, Hamilton. 32 p.

Baker, C.F. (2008). Huntly Power Station – 2008 fisheries monitoring report. NIWA Client Report HAM2008-174. NIWA, Hamilton. 94 p.

Baker, C.F.; Boubée, J.A.T. (2003). Monitoring of the Huntly Power Station Fishway: Summer 2002-2003. NIWA Client Report: HAM2003-040. NIWA, Hamilton. 13 p.

Baker, C.F.; Boubée, J.A.T. (2004). Huntly Power Station – Review of fish protection technologies at cooling water intakes, 2004. NIWA Client Report: HAM2004-029, NIWA Hamilton, 47 p.

Baker, C.F.; Davison, B.; Grayling, S.; van Houte-Howes, K.; (2008). Assessment of fish health near Huntly Power Station: January to June 2008. NIWA Client Report HAM2008-136. NIWA, Hamilton. 44 p.

Genesis Energy (2008). 2007 – 2008 Annual water monitoring report. Report prepared for Environment Waikato, 30 September 2008. 80 p

NIWA, September (2008): Waikato River Bathymetric Survey of Iowa Vanes at Huntly, September 2008. 204p.

#### 4.0 Kourarau Power Station

##### 4.1 General Station Management

Genesis Power Limited (March 2001): Kourarau Power Scheme – Assessment of Environmental Effects.

Wright-Stow A. and Baker C. September 2006: *Assessment of ecological effects of Dam Maintenance at Kourarau Power Scheme*. National Institute of Water and Atmospheric Research Limited, Hamilton.

##### 4.2 Lake/Wetland Management

Wildland Consultants, February 2009 – Ecological Assessment of the Upper Reservoir, Kourarau Power Scheme, Wairarapa, Wildland Consultants, Rotorua. Prepared for Genesis Energy.

##### 4.3 River/Stream Management

Parkyn, S.; De Rose, G. and Smith, J. January 2001: *Assessment of the effects of the Kourarau Power Scheme maintenance activities on downstream fish and invertebrate communities*. National Institute of Water and Atmospheric Research Limited, Hamilton.

