

WAITOMO GLOWWORM and ARANUI CAVES

Travis Cross

Fact File

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Compiled by: Travis Cross

Position: Environmental Officer

No. of staff: Around 45 (including restaurant and admin staff)

Personal Background: I moved to Waitomo from Dunedin for this job and have now lived here for 5 years

Target market: WGC is touted as anyone can do "high-heel" type tour. Aranui is quieter, slightly more demanding but still an easy going walkway tour.

Retail Cost:

Waitomo Glowworm Cave:

Adults NZD\$48.00

Children NZD\$21.00

Aranui:

Adults NZD\$46.00

Children NZD\$21.00

Awards: The new Waitomo Caves Visitor Centre has won various architectural awards.

Worst moment: My new boss keeps reminding me about "airing dirty laundry" in public so I probably shouldn't say anything. Maybe after a few too many at the Waitomo Tavern next May.....

Best moment: The best moments are when I get to spend time underground enjoying the caves.

Message for ACKMA members: I'm looking forward to showing and sharing what we do here in Waitomo, especially after all the wonderful times and hospitality I've enjoyed as part of ACKMA over the years.



WAITOMO GLOWWORM CAVES

There have been many new developments since 1997 when ACKMA last visited Waitomo. The Waitomo Caves building that 1997 conference attendees will remember was complemented by a much larger facilities building opened in 1999, subsequently burnt down in 2005 and was replaced with a \$14.5 million facility that was opened in 2010.

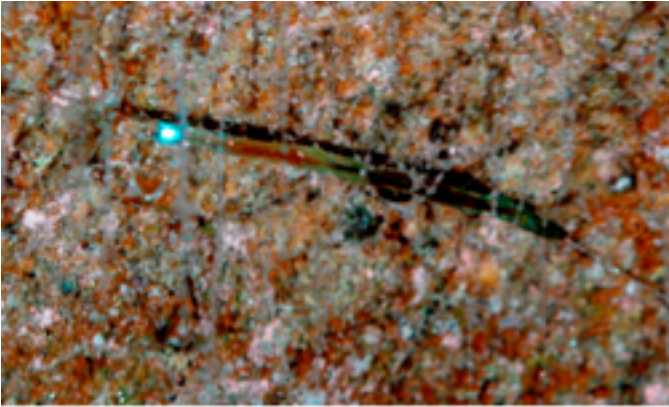
More recent changes include having a new operations manager, Gordon Hewston, across both WGC and Blackwater Rafting businesses. He's been with us for 4 months now and came to us from the NZ Historic Places Trust and has a background in environmental science and business management and has previously worked at Cheddar Gorge and Sherwood Forest. Huia Davis has been our new head guide since August 2012. He is an ex-geography teacher who was born and bred locally. Huia has guided at WGC for the last 5 years.

From an environmental prospective, we have had several interesting developments during the 5 years that I have been here. We've gone from no glowworm monitoring, to photo-monitoring glowworm lights on a monthly basis, to a permanent 30 minute interval time-lapse photo-monitoring system, based on Dave Merritt's work. The time-lapse monitoring is now coming to fruition because we are able to plot glowworm data alongside humidity and temperature data which is increasing our knowledge remarkably.

The climate monitoring system is constantly evolving. Several years ago, after a yearlong case study, we moved the Grotto temperature and humidity sensors to a site that better reflects conditions where the glowworms are. The previous site was being influenced by visitors waiting at the jetty for a boat ride. Another case study showed that we could reduce the speed of psychrometer fans (aspirated humidity sensors), reducing the fan noise impact on visitors whilst maintaining accurate humidity readings.

Most of these changes are in collaboration with the Environmental Advisory Group (EAG), made up of cave specialists in the various speleological fields. We meet every 6 months and discuss all environmental matters for the Waitomo Glowworm, Aranui and Ruakuri Caves. For me it's fantastic to be able to call upon that calibre of expertise to work through any environmental problem.

Despite all the changes, the tour format is probably much the same, the glowworms are still glowing and tourists are still enjoying their visit to the caves.



A glowworm

ARANUI CAVE

Aranui has had a few changes since 1997 and further changes in the pipeline. Much of Aranui's infrastructure, being of a 1950s' vintage, was or is still in need of replacement. A 5 year upgrade plan was developed to allow costs to be spread out. Year 1 of the 5 year plan included replacing the stairs, year 2 check and replace any sub-standard main trunk electrical cabling, year 3 replacing incandescent lights with LEDs, year 4 replacing flat wooden walkway sections and year 5 finishing off anything outstanding.

Currently, the stairs and main trunk cabling has been completed plus a test section of lighting has been installed. We are at about year 3 of the 5 plan although the project was stalled for a year with last year's financial climate. The next step is to decide what type of LEDs are to be used, develop a lighting plan and costings for year 3. Hopefully and with a bit of luck, much of the lighting upgrade will complete by the time ACKMA visits next year.

MONITORING

Although no permanent monitoring was carried out in Aranui Cave when I started, there had been research. Many of you will remember Tony Amar's climate research talk given at the 2005 Westport conference plus there had been radon and water quality research to name a few. A carbon dioxide, temperature and humidity logger was installed at the Eastern Scene during 2009, with the aim of identifying potential problem areas. Data from this logger have shown relatively stable cave climatic conditions so no obvious issues. Four temperature loggers were also installed at sites used in Tony's study, which have confirmed his findings. Given that conditions at the Eastern Scene were relatively stable, the logger was moved to the Fairy Walk in January 2012. This site has shown some high CO₂ occurrences during summer (3,000 ppm is the maximum CO₂ concentration allowed under our licence agreement). Thus, management practices will need to be reviewed and changed to avoid these high CO₂ days without compromising any other aspects of the cave.



Van Watson and Miles Pierce inspect the new Aranui Cave infrastructure

The thing I like about cave climate monitoring is that it doesn't have to be the latest whiz bang gear. Just a couple of small temperature loggers have given us some great daily, seasonal and annual information. Based on

that information, we're often tweaking, adding or changing things around. You should see my jobs to do list from the Environmental Advisory Group!



L-R. Miles Pierce, Van Watson, Rhonwen Pierce and Libby Chandler in Aranui Cave



*Left. Scene in Aranui Cave. Right. Kent Henderson and Peter Chandler at Aranui Cave entrance, 2005.
Photos: Steve Bourne*