****

**Introducing Waterwatch**

For over twenty years, up to April 2017, Waterwatch operated as an environmental outreach programme of Lincoln University for the benefit of schools and communities in Canterbury. Over this time, we have taken hundreds of groups to their local stream, river or pond to assess its condition with respect to aquatic life, and to determine the chemical, physical and biological status of the water. The programme operated under the umbrella of the University, but also received substantial funding over many years from the Rata Foundation (previously the Canterbury Community Trust). This funding, plus the support of Lincoln University, enabled Waterwatch to be delivered free of charge to schools and community groups.

**What is Waterwatch?**

Waterwatch provides hands-on activities for the participants, who are instructed in using scientific instruments to measure a range of key water parameters. This approach has been highly successful in educating thousands of students from Year 7 to Year 13 about the freshwater environment. We operate with up to six kits of test equipment, worth approximately $5,000 each, and we also provide nets, waders, gumboots, buckets, specimen trays and identification charts. These are used in the steps of catching and identifying aquatic macroinvertebrates. Most of our excursions are for science, biology and geography classes, but there has recently been increased uptake from agriculture/horticulture teachers too. Children of all ages (and adults too) invariably become fully engaged in the tasks we set, leading to very worthwhile outdoor learning experiences.

We also attend events organised by community groups to investigate the condition of their local waterways and to introduce them to water monitoring techniques and how we might help the groups to investigate these waterways.

Here are the parameters that we can measure or assess:

|  |  |  |
| --- | --- | --- |
| **Chemical** | **Physical** | **Biological** |
| Dissolved O2 content (mg/l) | GPS location | Macroinvertebrates |
| O2 saturation (%) | Habitat survey\* | Fish |
| pH | Stream flow (m3/s) | Microbiology (bacteria)\* |
| Conductivity (μS/cm) | Stream profile (m2) | Plant life \* |
| Nitrates (mg/l) | Turbidity (NTU) |  |
| Phosphates (mg/l) | Water temperature (oC) |  |
| Iron (mg/l)\* | Air temperature and humidity |  |
| Hardness \* | Cultural health index assessment\* |  |
| \*Optional, available on request |  |  |

Until a few years ago Waterwatch was one of a number of educational programmes operating in different regions in New Zealand which enabled students to engage with our aquatic ecosystems – streams, rivers, ponds and lakes – and thus benefit from a very worthwhile outdoor experience. Sadly, almost all of these programmes have now ceased to operate. This is despite the growing focus nationally on water issues, and the imperative to educate the next generation about current and future challenges to our water quality and availability.

Of the few remaining programmes still operating, only Waterwatch is enabling students to get outdoors and use sophisticated yet easy-to-use instruments. These instruments deliver scientifically-robust test results which are reliable indicators of water quality. The test results are entered into a database which until recently was accessible to anyone on our Lincoln University web page. Now, the historical results for a specific site are available on request. Recording the GPS coordinates enables the location of a site to be fixed on a map.

**Formation of the Waterwatch Education Trust**

When Lincoln University decided to end its formal association with Waterwatch from April 2017, we established a charitable trust, The Waterwatch Education Trust, to secure the future of the unique programme and its substantial assets. The Trust is registered charity with Charities Services (Registration No. CC54564). We have tax exemption from IRD and also meet the IRD qualifying criteria for donee organisation status so that companies can claim a deduction for any donations to Waterwatch.

The aims of the Trust are:

1. To deliver, free of charge, outdoor education and training programmes to schools, farming and community groups on the topics of water quality, freshwater ecosystems, sustainable land use and contemporary water issues;
2. To assist other regions to set up educational programmes on freshwater monitoring for schools and community groups to deliver the programmes set out in Aim 1;
3. To cooperate with other environmentally-involved organisations in initiatives and activities that promote Aim 1.

We have established a relationship with the Biological Husbandry Unit, near Lincoln, to acquire a new conveniently-located base with an organisation that espouses similar environmental values to Waterwatch.

To finance its future operations the Waterwatch Education Trust will be seeking funding support from organisations and businesses having a vested interest in water quality and utilisation, as well as those that have a passion for environmental education. While the Rata Foundation (formerly the Canterbury Community Trust) has been a major funder of Waterwatch for many years, its funding alone cannot fully meet our operating costs (educators’ wages, administration, vehicle operating costs, equipment maintenance and replacement, consumables etc.). Through their support of Waterwatch, businesses and other organisations can demonstrate their commitment to educating the younger generation and the wider community about the value of water to our lives. Their sponsorship will be acknowledged in our publications, news releases and web site, and by other means (eg, vehicle signage for major sponsors).

We are also keen to cooperate with other groups who provide (or wish to provide) outdoor experiences for young people. This invitation could include groups outside Canterbury who are keen to establish a programme similar to ours, perhaps extending the Waterwatch “brand” nationwide.

The farming community is becoming increasingly concerned about the impact of their operations on water quality. We are willing to introduce farming groups to the concepts and methods of water quality testing so that they may establish their own capabilities in this area. Enquiries are welcome via our web site:

**www.waterwatch.co.nz**

**The Waterwatch team**

Our team is a small, enthusiastic group of retired scientists and teachers with complementary skills and experience relevant to Waterwatch. The trustees of the Waterwatch Education Trust are:

Mr Kelvin Nicolle: Formerly with New Zealand Meteorological Service, Senior Tutor at Lincoln University, co-founder of the Waterwatch programme over 20 years ago and manager of Waterwatch operations up to his retirement from the university in 2014. Kelvin now coordinates the programme, is Chairman of the Trust and is a Waterwatch educator.

Dr Sue Jarvis QSM: Former Head of Biology at Lincoln High School, Chair of Lincoln Envirotown Trust from its inception until 2015. Sue is currently Adjunct Senior Lecturer at Lincoln University, Deputy Chair of the Trust, and is our curriculum adviser to schools.

Dr Errol Wood: Former teacher of physics and mathematics at Cashmere High School, Head of Physics and Measurement Division at Wool Research Organisation of New Zealand, half-time professor and HOD in Department of Wool Science and Technology at Lincoln University, Education Services Manager at AgResearch. Errol is now a Waterwatch educator and Treasurer of the Trust.

Dr Jonet Ward, a freshwater ecologist and retired senior lecturer at Lincoln University, was a co-founder of the Waterwatch programme. Jonet is now Secretary of the Trust.

In addition, Mr Mike Glover, a Springston-based artist and activist in water issues, has been appointed a trustee.

Mr Chris Konings is our Waterwatch Educator based in Timaru. He delivers the programme to the schools and community groups in Mid and South Canterbury. At the start of 2018 Chris replaced Dennis Veal who provided great service as our educator in the region for many years.