

✓ Problem

- Water scientists and monitoring agencies need many water samples taken frequently to develop and support findings.
- Frequent water sampling in remote locations is expensive and time-consuming.

✓ Current Technology

- *Handheld sampling*: requires time-consuming and costly repeat test-site visits
- *Remote sensors and loggers*: only monitor a limited range of parameters
- *Current autosamplers*: have open sample containers, short battery life, are often bulky and heavy

✓ Value Proposition

- Highest quality water samples over up to a year with only two site visits.
- Simple to deploy and low cost to operate.

The University of Waikato has developed an **automatic water sampler** purpose-built for the requirements of field-active climate scientists, environmental researchers and water monitoring agencies.

The sampler

Is a portable device that can autonomously collect and store up to 52 discrete samples over a year-long period. It uses silicon-sealed containers, a sophisticated purging system and extensive data-logging to gather comprehensive environmental information. It will be ready for sale in limited quantities in the second half of 2020 and we are now taking pre-orders.

Status:

- Field-tested our prototype trial unit
- Ready for manufacture & sale in the second half of 2020
- We are taking sales pre-orders

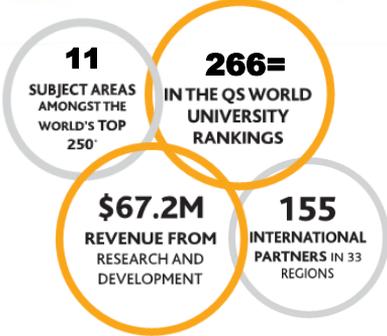
Feature summary:

- ✓ *High sample capacity*: holds up to 52 discrete samples
- ✓ *Lab-quality samples*: sealed containers & automated purge of sampling machinery prevents contamination
- ✓ *Long battery-life*: 12+ months of continuous, weekly sampling using AA batteries
- ✓ *Compact design*: can be disassembled to fit easily in a backpack
- ✓ *Customisable sampling programme*: fully configurable sample duration & intervals
- ✓ *Easy set-up & configuration*: Over a wireless connection via a mobile phone
- ✓ *Data logging of concurrent conditions for each sample*: automatic logging of humidity, temperature, air pressure, full-vial events

Pictured below, right: the automatic water sampler deployed in a cave in Niue

Parameter	Device specification
Size (H x W x D)	Assembled: 356mm x 312mm x 242mm Top half: 194mm x 312 x 242mm Bottom half: 160mm x 312mm x 242mm
Weight	9.2kg
Batteries	8 – 16 AA (Alkaline or Lithium)
Run-time (Alkaline batteries)	12 months: 168 hour (7 day) sample period 9 months: 24 hour sample period
Sample containers	52 x 100ml silicon-sealed vials





WaikatoLink: Commercialisation and Technology Transfer Office for the University of Waikato

Telling the story of our environment with water

Water is a rich source of information about our environment, its past, and the changes occurring within it today. Water monitoring is essential to our understanding of climate, ecology & their response to industrial growth. But our understanding is limited by ineffective tools that don't provide the depth of data researchers & monitoring agencies require.



Setting up the auto-sampler

Inventor and University of Waikato researcher, Dr. Adam Hartland is using the device to build models that can better predict weather patterns and climate conditions. This used in planning and decision-making for applications such as agriculture and hydroelectric generation.

Adam's research builds on our knowledge of how changing climate conditions impact the chemical properties of water. By understanding this relationship, it is possible to draw detailed conclusions about historic climates and make predictions of future events. Other groups use this information to investigate biodiversity patterns, impact of pollution and environmental management policies.

Before creating this device, Adam & his team had to collect water samples by hand: there were no solutions available to suit his needs. The device allows Adam to conduct rigorous research in new, remote areas.



The automatic sampler in Niue

The auto-sampler's development was also motivated by the Waikato Environmental Geochemistry group's commitment to sustainable research practices. The device allows researchers to limit the frequency of their travel, decreasing carbon emissions & environmental impact.

We're setting a new standard for reliable, long-term water monitoring.

Contact Us

We want to talk to researchers & institutions with an interest in our automatic water sampler:

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