

Aerial mapping of northern Southland groundwater

We're taking to the sky to understand our water better. From the beginning of November, we're using the latest airborne electromagnetic technology to understand more about one of our critical groundwater resources.

Aquifer mapping will be carried out in the northern Southland area covering parts of the upper Oreti and Mataura River catchments. You may see a low-flying helicopter towing a large loop hanging from a cable during November and December. It will fly over the area on the map and 'scan' to about 300 metres deep underground, where we've never seen before. We won't be flying over towns or built-up areas.

► How does it work?

Transmitters on the loop under the helicopter send electromagnetic signals underground, and sensors measure the behaviour of the returning signals. Think of it as similar to radar, sending out and receiving signals.

The technology has been used commercially since 2004 to map large aquifer systems in countries including Denmark, Netherlands, India, USA, Canada, Australia and New Zealand.

► Is it safe?

Yes, very safe. Because the helicopter is moving at high speed, there's very limited exposure to the electromagnetic signals. It's safer than watching a plasma or LCD TV or blow-drying your hair.



The latest airborne electromagnetic technology in operation.

▶ What about my animals?

The technology is safe to use above animals. Experience in other farming areas is that stock generally aren't disturbed much by the technology. In New Zealand the team has observed that horses moved to the other side of the paddock when the system came very near.

The timing of the survey is early summer for the best flying conditions but is also seeking to avoid the main lambing and calving seasons in Southland.

▶ What will the information be used for?

The information gathered by the helicopter and loop will take some time to process and analyse. Once available, it will provide a much better picture of the underground water resource and reduce uncertainty to help guide decisions for environmental protection, development, resource consents, water management, and water availability for the local community. It will be available to councils, tangata whenua, and community groups, subject to agreed guidelines.

We want to assure you that these flights are not in any way used for compliance monitoring. We only want to know about water.

▶ Who's involved?

The project is being undertaken by Aqua Intel Aotearoa, a partnership between GNS Science and Kanoa, funded by Central Government's Provincial Growth Fund. The work has been considered and scoped alongside science staff from Environment Southland.

The SkyTEM data collection is being carried out by the international company SkyTEM in collaboration with the New Zealand helicopter company Heli A1.

▶ Flight operation details

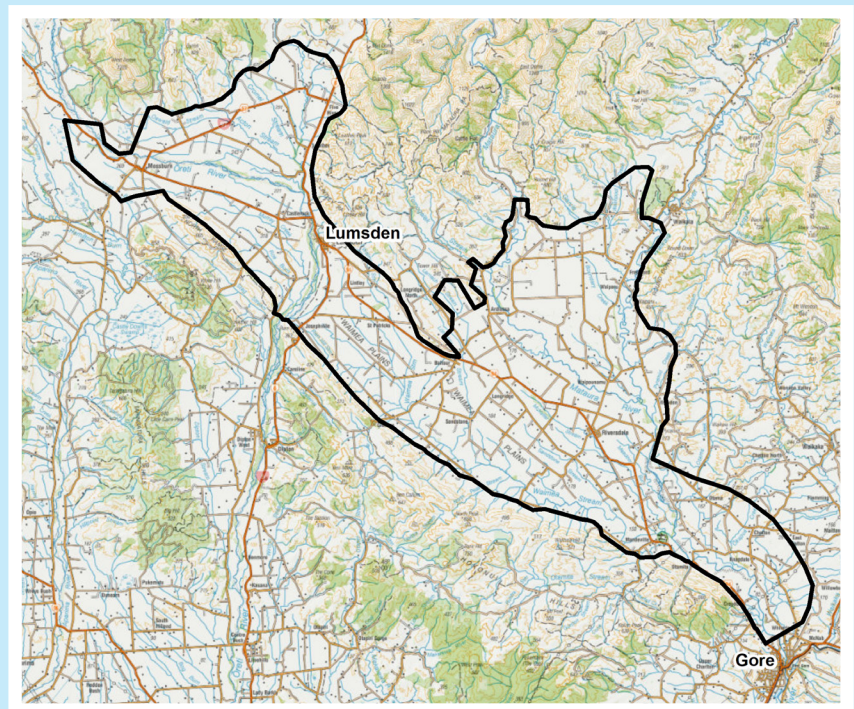
The helicopter will fly at 80-120 kph in parallel lines generally 200 metres apart and at a height of approximately 100 metres. The measurement instruments are suspended under the helicopter and will be about 30 – 50 metres above the ground.

The noise from the helicopter has been described as equivalent to a truck going past on a motorway and lasts for around two to four minutes. The helicopter flies up and down in lines, so once it flies over, it will then return approximately 15 minutes later but be at least 200 metres further away.

We will not be gathering data or information on anything above ground. While the helicopter will carry a camera, this is only to guide the crew managing the loop, and no photos or video are retained or shared.

▶ Check out where we are flying

Helicopter flights start around 1 November and will continue for about six weeks. We will be sharing the daily flight plan on our website and Facebook page – [Facebook.com/enviromentsouthland](https://www.facebook.com/enviromentsouthland).



Get in touch

Please contact us if you have any questions or concerns about helicopter flights over your place. Let us know if you have an event you'd like us to avoid (eg a stock sale, wedding, hui) and we'll do our best to plan around it.

Email:

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