Rialtas na hÉireann
Government of Ireland

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

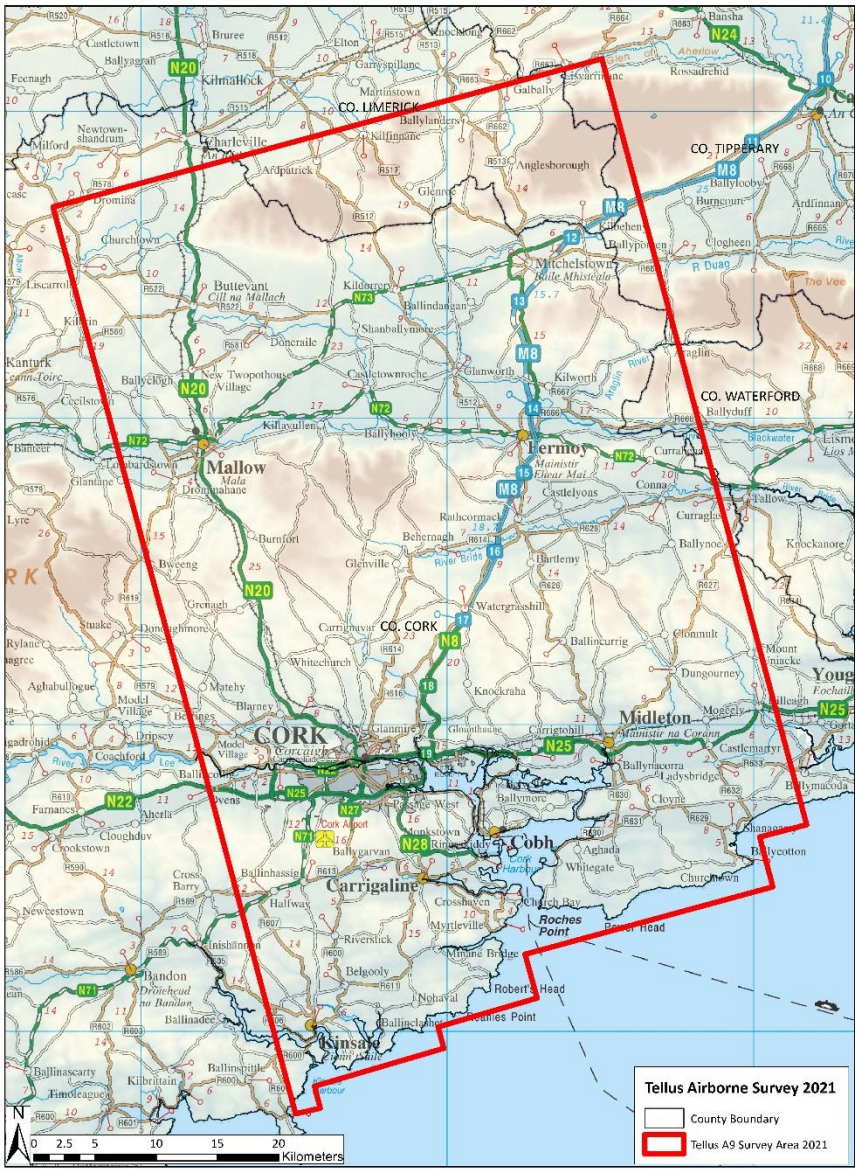
Tellus Survey 2021 - Frequently Asked Questions:

1. What is Tellus?

Tellus is a nationwide ground and airborne geoscience mapping programme, collecting chemical and geophysical data that will inform the management of Ireland's environment and natural resources. The project, run by the Geological Survey Ireland, involves gathering data via a low-flying survey aircraft and a ground-based sampling programme. New data will be joined with maps already available from these existing Tellus surveys and will be made available free of charge to the greater public.

2. Where is the Tellus airborne survey underway?

A9 – East Cork and Surrounds Surveying Block:



Geophysical: The current phase of the airborne survey covers the eastern part of County Cork and neighbouring parts of south County Limerick and west County Waterford. The survey is expected to commence towards the end of July and conclude at the end of September, weather permitting. For up to date information and the planned weekly flight schedule, please visit www.tellus.ie.

3. Why do we need to do this survey?

The survey will give a comprehensive picture of the environment in the region today. This will help us sustainably manage the environment, natural resources and protect public health in the future. Previous Tellus surveys have:

- Provided improved data for the GSI to update geological maps for planning and research purposes
- Provided new data to improve radon risk mapping
- Assisted mineral exploration companies to invest locally
- Facilitated new third-level research on environmental pollution, agricultural productivity, peat and wetlands.

4. Where does the name "Tellus" come from?

In Roman mythology, Tellus was the goddess of the Earth.

5. Is Tellus anything to do with…

i. Mineral exploration?

Tellus isn't engaged in commercial mineral exploration. The data collected will be impartial and freely available to all, including mineral exploration companies who may use the data to assist their exploration programmes and regulators responsible for permitting such activities. The data is likely to highlight areas which would be of interest to mineral exploration companies for further investigation, but the data alone cannot indicate where economic mineral deposits are present. Previous Tellus surveys have stimulated considerable investment into local economies from mineral exploration companies who use the data as part of their exploration programmes.

ii. Fracking?

All shale gas or unconventional hydrocarbons hydraulic fracturing (or 'fracking') licensing or exploration in Ireland is now suspended under moratorium. A bill has been passed which bans onshore fracking in Ireland. Tellus data is not being acquired to assist fracking.

iii. Radon gas?

The rocks and soils across Ireland can naturally contain minerals which are radioactive and are a source of radon gas. The airborne survey will measure and map a range of radiogenic elements at a high resolution, and the data are used to map areas of potential radon gas risk. Research into this is being carried out in conjunction with the Office of Radiological Protection, part of the Environmental Protection Agency.

iv. Bog conservation/turf cutting?

Tellus collects data on the land and surface environment including areas covered by peat; however, the project is not involved with the selection of bogs for conservation or the cessation of turf cutting. Previously,

research has been carried out using Tellus data in the border region on peat bogs to assess how much carbon is stored in peat and variation in peat deposit thickness.

v. Wind turbines?

Tellus is not involved with wind turbines.

vi. Pylons?

Tellus is not involved with electricity pylons.

vii. Septic tank inspections?

Tellus is not involved with septic tank inspections.

viii. Water meters?

Tellus is not involved with installing or inspecting water meters or pipes.

6. What type of aircraft is being used in the airborne survey?

The aircraft is a de Havilland Twin Otter plane operated by the specialist survey company, Sander Geophysics Ltd, based in Canada. The white, twin propeller plane has a red tail, black stripe, and registration number C-GSGF.

7. At what height and speed will the survey aircraft fly? Why does it have to fly at a low altitude?

The aircraft flies at a safe height and is authorised by the Irish Aviation Authority (IAA). In rural areas this will be 60 metres – about eight times the height of a two storey house. In urban areas the height will be 240 metres. It flies at a low altitude because the instruments on board the plane can sense the properties of soil and rocks more accurately at a low altitude. The speed of the aircraft is about 216 km/h (or 130 mph), and the sound of the aircraft passing overhead is similar to that of a passing lorry.

8. What equipment is the plane carrying and what do they measure?

The aircraft will carry a range of instruments for navigation and for measuring geophysical properties of the ground. The navigation instruments carried on the aircraft include:

- A satellite navigation system;
- A radar altimeter for measuring altitude; and
- A video camera, which gives us a record of where the plane has flown for quality control purposes. The video footage will not be used for any other purpose.

The geophysical instruments on board the plane comprise:

- A magnetometer which measures variations in the Earth's magnetic field; mounted in a rod on the back of the plane.
- A gamma ray detector which measures the natural radioactivity of shallow soil and rocks; housed inside the plane.
- A frequency-domain electromagnetic (EM) system which measures variations in conductivity between different soils and rock; mounted in pods at the end of each wing.

The EM system is the only instrument which sends out a signal to the earth. The EM system on one wing pod sends a very weak and safe signal, equivalent to the power of a light bulb, into the ground. A receiver in the other wing pod will measure small changes in this signal as it passes through different types of rocks and soil. The other instruments are passive — they don't emit any signals.

9. Who is doing the work?

The project is funded by the Department of Environment, Climate and Communications (DECC). The project is being managed by the Geological Survey Ireland which is a line division of the DECC. The survey work will be undertaken by qualified, highly specialised and experienced contractors on behalf of the Geological Survey Ireland. Airborne surveying is carried out by Sander Geophysics.

10. Is COVID-19 affecting the Tellus airborne survey?

The airborne survey has started later than originally planned as a result of the global pandemic, otherwise the airborne survey has not been impacted by COVID-19. There is no physical interaction between the aircraft crew and the public. The aircraft takes off from and lands at its base at Waterford Airport only. All members of the Tellus survey team strictly adhere to the Government guidelines, including social distancing, regular hand sanitising, the wearing of face coverings, and regular surface disinfection.

11. Where can I get more information?

You can contact us by email, phone or through our website to get more information on Tellus.

Freephone 1800 45 55 65
Email tellus@gsi.ie
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Website www.tellus.ie