



# Methane gas in the Northern Territory

Methane gas is naturally produced in the landscape and is also part of natural gas development

To help work out what methane gas is present now and how much escapes following natural gas development, CSIRO measured the amounts of methane gas produced in the Beetaloo Sub-basin in the Northern Territory.

## Finding methane

The Beetaloo Sub-basin is south-east of Katherine and is rich in natural gas from shale. CSIRO researchers drove a 4WD across the land areas where they had permission to go and measured the natural methane gas in the air. They also looked at where that methane gas might be coming from.

The research showed that the Beetaloo Sub-basin is like other rural and natural areas in the Northern Territory and Australia – methane gas was already naturally in the air. There were some areas where natural methane gas was a little higher than the background level.

The extra methane came from:

- grazing cattle
- townships
- fires
- termites
- wetlands and
- some above-ground gas pipelines.

## Mapping

Scientists have made maps of methane gas levels in the Beetaloo Sub-basin area. By using information about the wind, the methane gas cloud and where the methane gas is coming from, scientists can calculate the flux and how much is in the air over time. This helps us understand how much methane gas is coming out above natural levels from existing sources, and by the gas industry in the future.

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# Frequently asked questions about methane gas

## What is methane gas and where does it come from?

Methane gas is a natural gas with no colour or smell. It comes from two main sources:

1. organic matter, like leaves, that is breaking down – such as in lakes, rivers, wetlands and soils;
2. deep underground (1,000 - 4,000 metres deep) where methane gas has naturally formed under high temperatures and pressures.

## What is methane concentration?

Methane concentration is the amount of methane gas in the air. It is usually reported as parts per million (ppm) or parts per billion (ppb). This means it is a very small amount compared to the amount of air around it.

## What does flux mean?

Flux is the amount of gas flowing over time, for instance, in grams per second. The flux of methane gas from any source (like natural gas wells) can be calculated using measurements of methane concentration, wind speed and direction, and the size and shape of the methane gas cloud.

## What is a tracer gas and what is it used for?

A tracer gas is a known type of gas that can be released next to natural gas wells. Knowing the flux of the tracer gas helps CSIRO researchers to measure the flux of the methane gas from those wells.

## What are the impacts of methane gas?

Methane gas is a greenhouse gas and it can cause a warming of the air and atmosphere. It does this by absorbing heat from the earth and then sending the heat back into the atmosphere. Methane gas is a more powerful greenhouse gas than carbon dioxide, however, it is in smaller amounts in the atmosphere (about 400 times less abundant).

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