Southern Cross University

Stable isotope analysis with the Environmental Analysis Laboratory

Stable isotope analysis

Carbon, nitrogen, hydrogen and oxygen stable isotope analysis

Applicable for a range of environmental purposes

Analysis of solid and liquid matricies

Strict sample preparation methods and quality control procedures

For further details about analytical options contact EAL

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Quality, innovative stable isotope analysis

EAL, Southern Cross University's Environmental Analysis Laboratory, is an Australian leader in providing high quality, innovative analytical services to environmental, agricultural and industrial managers through university, government, corporate and private partnerships.

EAL provides measurements of stable isotopes for light elements (carbon, nitrogen, hydrogen and oxygen) in environmental samples through partnership with the Centre for Coastal Biogeochemistry Research (CCBR).

The stable isotope laboratory is equipped with four isotope ratio mass spectrometers (IRMS), coupled to peripherals such as elemental analysers, TOC analyser and gas chromatographs. These provide the laboratory with extensive analytical capabilitie to measure stable isotopes in a range of environmental samples.

Measurement of carbon and nitrogen stable isotopes in solid samples is the most popular application. For example, an elemental analyser coupled to the IRMS is used in the study of soils and animal or plant tissue, as well as filters containing particulate organic matter from water (like plankton and detritus). Other common applications include food source and migration patterns for animals, nutrient source and water use efficiency for plants, and source of organic matter for soils and sediments.

There are also several parameters measurable in water samples including hydrogen and oxygen isotopes in the water molecule (H_2O), carbon in dissolved inorganic or organic carbon, nitrogen and oxygen in nitrate, and nitrogen gas.

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