

EARTH & ENVIRONMENTAL SCIENCE YEAR 11

Module 1 Earth Resources &

Module 4 Human Impacts Fieldtrip



Year 11 EES Student Outcomes A student will learn to:

EES 11/12-3 Conduct investigations to collect valid and reliable primary and secondary data and information.

EES 11-8 Describe key features of the Earth's systems, including the four spheres & how they are interrelated.

EES 11-11 Describe human impacts in relation to hydrological and geological processes and biological changes.

Pre-Fieldtrip Prep: View the CEC Microplastic pre-fieldtrip lecture and work scientifically to design a practical investigation or if you'd like more support for Module 4, a 30 hour, full term program is also available for download.

Sample Program:

Enter the CEC for a brief lecture to support Module 1 outcomes on how the four spheres have interrelated to produce the Narrabeen environment. Your CEC Educator will explain how humans have impacted on the hydrosphere of Narrabeen Lagoon and have introduced species that compete with native plants on coastal dunes.

The **Microplastics Survey** will be based on the **student's pre-fieldtrip planning** and using the CEC AUSMAP kits. We will survey along the lagoon edge to obtain accurate and reliable data on the presence of microplastic particles. Students will follow the AUSMAP standardised methodology to carefully sift, sort, identify their primary data. A Microplastic Site Assessment will be undertaken as well as a Macro litter survey depending on the time available. All primary data will be recorded, compiled and included on either the AUSMAP and / or ADMI database. Microplastics particles will also be sent for further University analysis. This will be followed by a brief morning tea break at the CEC where students can upload their data, clean the field equipment and interact with the CEC displays such as a flume tank, microEYE and catchment models.

On **Narrabeen Headland** students will observe how the four spheres interact and they will complete a fieldsketch to recall how these processes have produced the coastal dune in front of them. Students observe the current state of the Narrabeen Lagoon Entrance and explain the processes that cause the lagoon to naturally close. We will then walk to enjoy a brief lunch break near North Narrabeen SLSC, where toilets, café's and shade are available nearby.

North Narrabeen Dune is the final field site where students will conduct a practical investigation to explain the formation of soil through the interaction of the four spheres over time. Finally, if there is sufficient time before your bus departure, students can collect abiotic data to study the effects of an introduced species on the coastal environment.

Students need to bring:

Clipboard, Worksheet, Pens and Pencils
Pre-Fieldtrip Planning Group Sheets
Lunch, Morning Tea, Refillable **water bottle**
Hat, Sunscreen and Raincoat (if necessary)
Old Sandshoes (that can get wet)



northern
beaches
council

Coastal
Environment Centre
Narrabeen

<https://www.northernbeaches.nsw.gov.au/environment/coastal-environment-centre/high-school-programs>