

Human Impacts – Introduced Species (Full Day Program) | Stage 6 | Earth and Environmental Science

Students work scientifically and achieve fieldwork outcomes.

Note: This excursion can also be used as a model for a **DEPTH STUDY (5 hours)**.

Summary	Duration
<p>This excursion addresses outcomes from the NESA Stage 6 Earth and Environmental Science.</p> <p><i>Focus</i> – ‘Human Impacts’- Introduced Species – An Investigation in a Kayak</p> <p>This new, unique and highly engaging fieldwork program allows students to investigate first hand human impacts at Yarramundi lagoon. (15 minute bus trip from Penrith Lakes EEC).</p> <p>Before departing for Yarramundi Lagoon students will conduct a risk assessment of the day. The Lagoon has had issues in the past with the introduced floating aquatic plant <i>Salvinia Molesta</i>.</p> <p>Students undertake a paddling investigation to assess the current risk of a salvinia outbreak.</p> <p>Finally students conduct an aquatic macro invertebrate /vertebrate survey to ascertain the presence of <i>Gambusia</i> (an introduced species) which has contributed to the decline / extinction of an Australian native species.</p> <p>Students are guaranteed to be involved in a number of engaging and ‘hands on’ experiences during the course of the day through which students will further develop their geography inquiry, field work and group work skills.</p>	<p>An on-site and off-site excursion to Penrith Lakes Environmental Education Centre.</p> <p><i>Arrival time</i> - 10:00am</p> <p><i>Departure time</i> – 2:00pm</p> <p>Arrival and departure times are guides only. Distance and bus schedules may require modifications to the timetable.</p>

About Penrith Lakes	Learning across the curriculum
<p>Penrith Lakes Environmental Education Centre is located on Old Castlereagh road inside the Sydney International Regatta Centre. This great location allows us to provide studies of land and water management at Penrith Lakes along with local heritage sites and the environmental issues associated with the Nepean River, Yarramundi Lagoon and the Blue Mountains.</p>	<p><i>Cross-curriculum priorities enable students to develop understanding about and address the contemporary issues they face.</i></p> <p>Sustainability is concerned with the ongoing capacity of the Earth to maintain all life. It provides authentic contexts for exploring, investigating and understanding systems in the natural and made environments. Relationships, cycles and cause and effect are explored, and students develop observation and analytical skills to examine these relationships in the world around them to design solutions to identified sustainability problems.</p>

Key Inquiry question

- How do introduced species affect the Australian environment and ecosystems?

Outcomes for students

A student:

- evaluates questions and hypotheses for scientific investigation EES11/12-1
- evaluates investigations in order to obtain primary and secondary data and information EES11/12-2
- conducts investigations to collect valid and reliable primary and secondary data and information EES11/12-3
- describes human impact on the Yarramundi Lagoon Area in relation to hydrological processes, geological processes and biological changes EES11-11

Students:

- outline the biotic and abiotic effects of introduced species
- conduct an investigation into a local introduced species, including:
 - reason for introducing the species
 - biotic and abiotic effects of the species
 - area affected by the species
 - human impacts that favour the introduced species
 - control or mitigation methods
 - economic impact of the species
 - different views about the value of and/or harm caused by the introduced species
- analyse ways in which human activity can upset the balance of ecosystems and favour introduced species
- describe ways in which introduced species contribute to the decline or extinction of native Australian species

Teaching and learning activities

- Activity 1: Overview of Yarramundi Lagoon Area.
- Activity 2: Risk assessment for the investigation. Note: paddling is a major activity with this excursion.
- Activity 3: Instruction on use of abiotic instruments.
- Activity 4: Primary data collection A – from a kayak.
- Activity 5: Primary data collection B – from the shore
- Activity 6: Primary data collection C – walk to surrounding area.
- Activity 7: Wrap up and conclusions from first hand investigations and secondary data. Looking at key inquiry questions.

Resources

Provided by PLEEC:

- Access to Yarramundi Lagoon
- Water testing equipment
- Dip nets
- Kayaks/paddles
- Life jackets

Provided by visiting school/students:

- Enclosed footwear
- Change of clothes (you will get wet)
- Clipboards
- Student hats
- Sunscreen and towel
- First aid kit and student medications