

Year 4 - Science

Teacher Guide: Life cycle of Tasmanian eels

Tasmania is home to two species of eel, the Long-finned eel (*Anguilla reinhardtii*) and the Short-finned eel (*Anguilla australis*). Eels are ecologically important in Tasmanian inland waters, and they are our largest, native, freshwater fish.

Eels are diadromous. They are born in marine waters (ocean, sea, saltwater) and migrate into freshwater (creeks, lakes or rivers) as juvenile eels (elvers). Eels remain in freshwaters until they reach maturity or adulthood. This may take anywhere from eight to twenty years, or possibly longer. Eels complete their lifecycle by migrating back to the marine waters to spawn.

As a result of these traits, worldwide populations of freshwater eels are vulnerable to population decline. A range of freshwater eel species from around the world are listed as endangered or critically endangered on the International Union for the Conservation of Nature Red List.

Hydro Tasmania has long recognised that hydropower structures, such as dams and diversions, can block fish passage and therefore interfere with migration. Eels are particularly vulnerable as they are long lived, take significant time to reach reproductive maturity and migrate long distances between marine and fresh water.

Hydro Tasmania works collaboratively with the Inland Fisheries Service to assist the eels' passage past barriers that may block their migration. Hydro Tasmania has particular strategies to support eel populations at Trevallyn Dam in northern Tasmania, and Meadowbank Dam in the south.

Australian Curriculum

Learning Area SCIENCE	Content Descriptions
ACSSU072	Living things have life cycles
ACSSU073	Living things depend on each other and the environment to survive
ACSHE061	Science involves making predictions and describing patterns and relationships
ACSHE062	Science knowledge helps people to understand the effect of their actions
Cross Curriculum Priority	Sustainability
General Capability	Critical and Creative Thinking, Literacy

Learning goals

Know:

- The names and stages of the eels' life cycle.
- Eels move from fresh to salt water to breed and complete their life cycle (diadromous).

Understand:

- Some eel species are threatened (working to keep our Tasmanian species from becoming threatened).
- Our actions have impacts.
- Science assists us in making informed decisions.

Do:

- Engage in classroom discussions.
- Research material for activities.
- Consider the local environment.

Achievement standard

By the end of Year 4, students

Science

... describe relationships that assist the survival of living things and sequence key stages in the life cycle of a plant or animal. They identify when science is used to understand the effect of their actions.

Adjustments / strategies to include all students

	Enabling	Extending
Content:	Spend time introducing students to the language of the eels' life cycle unit	Compare and contrast another migrating eel i.e. American eel
Process:	Guide students one-to-one where necessary such as by explaining language used on the website and resource sheets	Ask students to contact Hydro Tasmanian's Education Coordinator to interview them about works at Trevallyn Dam
Product:	Have students draw their own life cycle of the eel modifying the poster supplied	Invite students to design a scientific diagram with labels that gives an explanation of the Trevallyn elver ladder

Assessment

Refer to *Options for assessment and extension* in each Lesson Plan.

Evidence of student learning

- Students identify the key stages of the eel's life cycle.
- Students are able to represent an eel's lifecycle using a medium of their choice.

Group reflection

Refer to *Elaborate and Review* in each Lesson Plan.

Teaching and learning resources

- Hydro Tasmania website: Helping Fish Migrate
<https://www.hydro.com.au/environment/environmental-water-management/fish-migration>

- ABC story on HT eel migration study
<http://www.abc.net.au/news/2016-09-22/tasmanian-eels-tracked-using-sonar-in-dam-migration-bypass-study/7865400>

- ABC Catalyst Program – Eel Migration (2011)
<http://www.abc.net.au/catalyst/stories/3291553.htm>

It is recommended that the video is set up prior to class or student viewing

Materials	Number
Smart board or projector	1
Internet connection	1
Activity – Life cycle of Tasmanian eels (reference document for front of class display)	1
Activity – Short-finned eel poster (reference document for front of class display)	1
The Elver Story	1 / 1 each

Teacher reflection

- What went well?
- What could be improved?
- How might you deliver this lesson differently next time?

Feedback

If you would like more information or to provide feedback please contact our Education Coordinator at education@hydro.com.au