

Activity 6: Estuaries for everyone



Let's explore our values and find out how people view and use estuaries



CURRICULUM LINKS

| Learning areas | Learning intentions | Success criteria |
|---|--|---|
| <p>Science: Levels 1–4</p> <ul style="list-style-type: none">▪ Social Science: Social Studies.▪ Science: Planet Earth and Beyond: Interacting systems.▪ Nature of Science: Participating and contributing. <p>Science capabilities</p> <ul style="list-style-type: none">▪ Interpret representations.▪ Use evidence.▪ Engage with science. <p>Te Marautanga o Aotearoa</p> <ul style="list-style-type: none">▪ Tikanga ā iwi.▪ Pūtaiao: The natural world. <p>Other curriculum links</p> <ul style="list-style-type: none">▪ English.▪ Maths: Statistics. | <p>Students are learning to:</p> <ul style="list-style-type: none">▪ identify their views and values regarding estuaries▪ understand how their community views and values local estuaries. | <p>Students can:</p> <ul style="list-style-type: none">▪ describe their points of view about estuaries▪ design an appropriate survey to determine the views of their community. |

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BACKGROUND NOTES

HOW ARE PEOPLE INVOLVED WITH ESTUARIES?

Estuaries play an important role in all of our lives. People have gathered food at New Zealand estuaries for many generations. Estuaries also provide us with recreational opportunities, such as cycling, snorkelling, walking, running, bird-watching, kayaking, stand-up paddle boarding (SUPing), boating, fishing and sailing. They can be used as harbours for boats and as locations for shellfish farms or sometimes even tidal power schemes.



Finding fish at a community planting day at Cobden Aromahana Sanctuary in Greymouth.
Photo: Henk Stengs

WHAT DO WE MEAN BY POINTS OF VIEW AND VALUES?

A point of view is an opinion or position. People express their points of view through their actions and words. Values are deeply held beliefs that influence what a person considers to be important. Values can affect our points of view and can themselves be influenced by our knowledge and experiences. Culture, family, the media and the community can also influence our values and points of view. For example, I may hold the value that estuaries are important places for people to gather food and this may influence my point of view about how clean estuaries should be and how we should treat them.

Values are also described in the New Zealand Curriculum.

 The New Zealand Curriculum values

For information on DOC's other big picture values, see the *What is conservation education?* webpage on the DOC website.


 What is conservation education?

HOW CAN PEOPLE AFFECT ESTUARIES?

Like all living things, estuaries have a natural life span, eventually filling up with sediment and dying. This process can take thousands of years but can be shortened by human activities. Deforestation removes trees and plants from a catchment, removing the natural filtering process and creating more sediment, which ends up in the estuary. Pollution and litter can also cause problems for estuaries. Chemicals can enter the stormwater system, flow into streams and ultimately affect estuary wildlife. Waste products from people and farming can also have dramatic impacts on estuaries.



NEW ZEALANDERS AND ESTUARIES OVER TIME

Before Europeans arrived in New Zealand, our estuaries were traditional and seasonal homes for iwi that allowed them to travel via water and provided access to food and other materials. Estuaries were sought after locations and were sometimes a source of conflict. For more information, see  *Activity 7: Māori perspectives on estuaries*.

Early European settlers also valued estuaries, creating cities and harbours near these important resources. Examples of cities that are situated on or near estuaries are Whangarei, Auckland, Tauranga, Napier, Wellington, Christchurch, Dunedin and Bluff. Development, deforestation and farming have changed many estuaries over time and have caused problems for native wildlife. For more information about changes to our estuaries, see *Te Āra: The Encyclopaedia of New Zealand*.

 Estuaries - People and estuaries





Straw bales can be used to provide temporary homes for inanga along the edges of estuaries.
Photo: Helen Kettles, DOC



LEARNING EXPERIENCE 5: ESTUARIES FOR EVERYONE

Resources for this activity

- Student worksheet  Agree or disagree? (page 10).
- Student worksheet  Estuaries views statements (page 11).

Vocabulary

Community, views, point of view, values, connection, recreation, cultural, traditional, resources, materials, use.

Links

To open the links throughout this resource without losing your place in the document, follow either of these steps:

- Right click on the link and click **Open Hyperlink**. Now the link will be opened in new tab.
- Hit the **Ctrl** key while you left click the link. This will also force the browser to open the page in a new tab.

Either of these methods will open the link in a new tab leaving the teaching resource open.



Focus question
How do people
view and use
estuaries in your
community?



INTRODUCING THE CONCEPT OF ESTUARIES FOR EVERYONE

Note: These learning experiences are suggestions only. Teachers are encouraged to adapt and change the material to suit their students' needs and interests.

Inquiry stage 4: Extending thinking

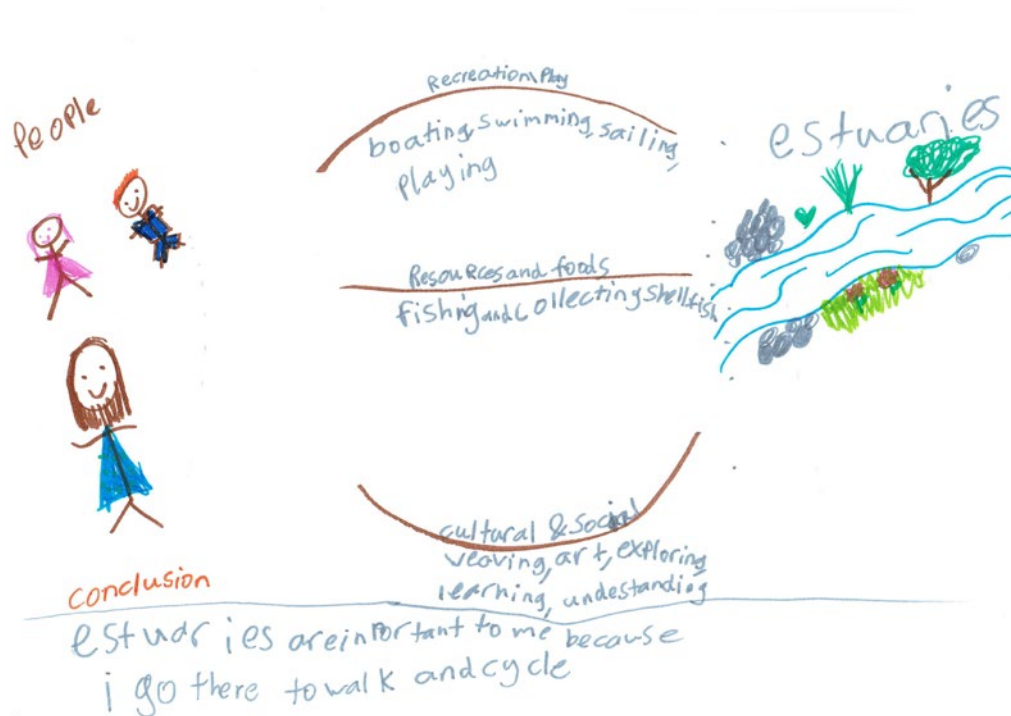


Our connections to estuaries



People have their own relationships and connections to estuaries. Some communities may be very connected to their estuaries and rely on them for resources and food, while other communities may have lost their connections.

- Students could draw a diagram to describe their connections with a local estuary. This could include connections related to recreation (play and having fun), resources (gathering food or materials) or cultural/traditional/social uses (eg learning, weaving and making traditional products).



A Wainui School student's connections to estuaries.

Thinking about how our community views and uses estuaries



- What is your view of estuaries?
- From the student worksheets on pages 10 and 11, sort the statements into those with which you agree and disagree. You can choose 2 or 3 statements to express your views or create your own statements.



Your local catchment



- Your local catchment is a unique environment, differing from other catchments around the country.
- To find out more about your local catchment and estuary, contact your local council or DOC, who may have catchment management plans or estuary plans that tell you about future planning for your estuary.
- To discover where communities and groups are working together to enhance estuaries and how to get involved, see DOC's *Restoring estuaries* map.
 - 🔗 [Restoring estuaries map](#)
- For more information on the quality of the land, air and water around New Zealand, visit the Land, Air, Water Aotearoa website.
 - 🔗 [LAWA connects you with New Zealand's environment through sharing scientific data](#)

Finding out more about how your community views and uses estuaries



- Design an online or paper survey to find out more about how your community views and uses your local estuary. For ideas, see this example survey created with Google Forms.
 - 🔗 [Community feedback about our estuary](#)

You can copy this survey and change the questions to make it relevant to your community.
- Revise the concept of a catchment using the *Estuaries and marine habitats* poster.
 - 🔗 [Estuaries and marine habitats poster](#)
- Discuss which human activities within a catchment could eventually affect the health of an estuary in either a positive or negative way. Which of these activities are happening in your local estuary?



Students at New River Estuary. Photo: Helen Kettles



REFLECTING ON LEARNING



- Print out a large map of your local estuary. Write and draw on the map any activities that people in your community are doing that might be affecting the estuary in either a positive or negative way, eg planting, littering, farming, swimming, discharging waste, building, boating, whitebaiting.
- Build a picture of what is happening in and around your estuary and catchment. Students can record their findings by drawing on paper or using digital drawing software.



A Wainui student's ideas about activities that are happening near their local estuary.

EXTENDING LEARNING



Views about people, the economy and the environment

- Read the Science Learning Hub article *Valuing estuaries*.

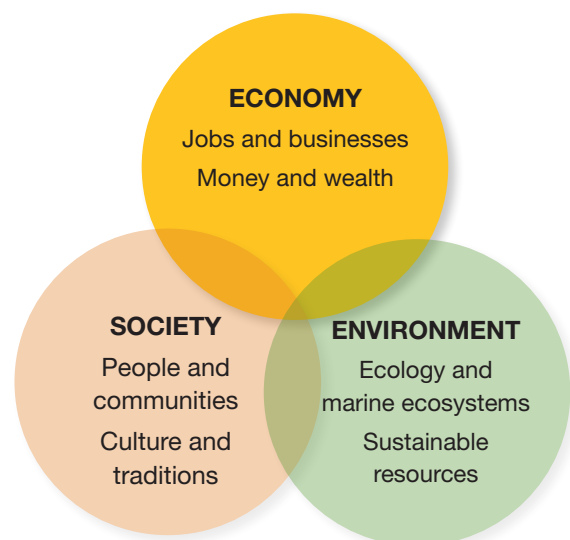


Valuing estuaries

- Ask your students to reflect on their own views about how we balance the needs of people, the economy and the environment. Which are most important?
- Discuss the different aspects of sustainability, eg economic, environmental and social sustainability. Is one of these aspects more important than the others?
- Listen to this audio recording about the use of Okura Estuary near Long Bay, in which Radio New Zealand's Jesse Mulligan interviews a member of the Long Bay-Okura Great Park Society to discuss the tension between these aspects (ie development and the resulting sedimentation and run-off, and the environmental effects on the estuary).



Fight to save the Okura Estuary from development



OTHER RESOURCES RELATING TO PEOPLE AND ESTUARIES

- DOC's *Harbours, Bays and Estuaries* resource:
 - 🔗 Harbours, bays and estuaries – at the edges of land and sea
- Science Learning Hub's *Valuing estuaries* article:
 - 🔗 Valuing estuaries



AGREE OR DISAGREE?



Sort the estuaries views statements on page 11 into those with which you agree and disagree.

Discuss each statement with your group and make a decision that reflects the majority of your group members.

| | |
|---|--|
| <p><i>We agree with these statements:</i></p> | |
| <p><i>We don't agree with these statements:</i></p> | |

We found it difficult to place these statements:

We very strongly agree with:

Our reasons:

We are now wondering about:

Google Docs version:  Views of estuaries Student worksheet



ESTUARIES VIEWS STATEMENTS

Our community has a **strong connection to our estuary.**

We can rely on our estuary for gathering food and catching fish.

Our community **cares about our estuary.**

Our school and community are **protecting our estuary.**

Estuaries are **places where I go to fish or collect shellfish.**

Estuaries are **places where we go as a family.**

Estuaries are **an important part of the natural environment.**

Estuaries are **natural resources.**

Estuaries are **full of life.**

Estuaries are **homes and highways for animals.**

Estuaries are **not very important to me.**

Estuaries are **places where I can swim and have fun.**

Estuaries are **peaceful places that help me relax and feel good.**

Estuaries are **muddy, dirty and not very nice.**

Estuaries are **beautiful places that are nice to visit.**

Estuaries are **places I don't really know or understand.**

We all need to look after our estuaries.

I feel connected to estuaries.

Google Docs version:  Views of estuaries Student worksheet

