

# Activity 6: Marine reserves for everyone



Let's explore values and look at how marine conservation ideas and practices have changed over time



## CURRICULUM LINKS

### Learning areas

#### Social science: Levels 1–4:

- Social Studies

**Science capabilities:** Interpret representations, Engage with science

**English:** Listening, Reading, and Viewing; Health and Physical Education: Healthy communities and environments

#### Te Marautanga o Aotearoa:

**Tikanga ā iwi; Pūtaiao:** The natural world

### Learning intentions

#### Students are learning to:

- Explore their own values about the ocean, marine reserves and conservation.
- Appreciate that attitudes of the New Zealand public have changed over time about looking after the resources in our oceans.

### Success criteria

#### Students can:

- Find statements to describe their values and attitudes to the ocean, marine reserves and conservation.
- Identify how values and attitudes about marine reserves and conservation in New Zealand have changed over time.

# CONTENTS

## BACKGROUND NOTES

What are values? .....	3
Changing attitudes to marine conservation in New Zealand .....	4
The history of the first New Zealand marine reserve .....	4
Marine reserves today .....	4

## LEARNING EXPERIENCE 6: MARINE RESERVES FOR EVERYONE

Changing how we think about the marine environment .....	5
Our values .....	5
Values statements .....	6
<b>New Zealanders' values and attitudes towards the sea over time</b> .....	7
Changes in local marine ecosystems over time .....	7
Investigating changes in public opinion about marine conservation in New Zealand.....	7
Reflecting on learning .....	8
Extending learning .....	8
Other resources about people and the ocean .....	9



# BACKGROUND NOTES

## Note

This activity explores the changes over the past 200 years in how people in New Zealand see and understand:

- the resources of the sea, e.g. fish stocks, shellfish, and seaweeds
- the need for protection of the coast and sea
- conservation and sustainability.

Our values and attitudes changed as we learnt more about ocean ecosystems and our impact on them.


## WHAT ARE VALUES?

Values are deeply held beliefs that are very important to people. Not all values are the same; in fact, everyone has slightly different values. Examples of values from the New Zealand Curriculum are: excellence, respect, resourcefulness, and innovation. Values underpin our teaching and are part of our learning programmes.


DOC's education big picture values include: manaaki, mauri, tapu and mana.

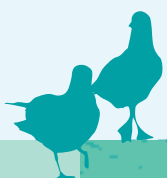
- Manaaki means to look after and to care for. It is an important value when exploring marine reserves and protection.
- Mauri is a life force or energy which connects everything, including people, animals and the natural world.
- Tapu is about sacredness and restrictions.
- Mana means respect, power, authority, and relates to dignity. From the Māori world view, everything has mana within the natural world.

These values all play a part in marine protection. See:

 <https://teara.govt.nz/en/te-ao-marama-the-natural-world/page-5>.

For information on DOC's other big picture values, see:

 [www.doc.govt.nz/what-is-conservation-education#big-picture](http://www.doc.govt.nz/what-is-conservation-education#big-picture).




## CHANGING ATTITUDES TO MARINE CONSERVATION IN NEW ZEALAND

Most people living today can see the benefits of marine reserves and conservation, but that certainly wasn't always the case. Many New Zealanders have changed their thinking over time and generations. From the 1840s to the 1930s, many people saw the ocean as a limitless source of food and thought that human impacts on it could only ever be minimal. Fishing was seen as a basic human right, and the idea of conservation was not accepted by the mainstream.


Even in the 1930s, the pressure on fishing stocks started to become clear. There were calls to regulate commercial fishing to conserve stocks into the future, as people had to venture further to get an abundant catch.

By the 1970s the impact of over-fishing could be felt widely in our waters and many people saw a need for conservation measures. People started to think about the potential benefits of protecting some areas of habitat and resources. Laws and rules were then introduced to protect our fish stocks and marine resources for the future.

Now the idea of a network of marine reserves around New Zealand is widely accepted. The community is beginning to understand the vulnerability of the ocean and its creatures. For a more detailed description of marine conservation and changes over time, see:  <https://teara.govt.nz/en/marine-conservation/print>.

## THE HISTORY OF THE FIRST NEW ZEALAND MARINE RESERVE

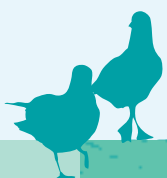
The idea of a marine reserve was first suggested by Professor Chapman from the University of Auckland in 1965. At that time, it was difficult to carry out experiments as they could be disturbed by fishing or shellfish gathering. Scientific study was the first motivating factor for protecting an area of coastline. The idea of sustainable fishing had not yet been developed. The idea of a reserve was thrown out by the New Zealand Marine Department who could see no reason to protect marine areas by law.

Dr Bill Ballantine was one of the key people involved in the creation of the first no-take marine reserve at Leigh – the Cape Rodney-Okakari Point Marine Reserve known as Goat Island. It took approximately 12 years of persistent research and fighting, but this area became legally protected in 1977. The no-take status was not a popular idea with everyone at the time and it had been opposed by many. See:  <https://www.youtube.com/watch?v=pmFUxbueFdM>.

It is only now becoming obvious just how important these areas of preserved ecosystems are, so that we can understand what these habitats were like before people arrived.

## MARINE RESERVES TODAY

Today we have a total of 44 no-take marine reserves in New Zealand (as at July 2017). There are also other marine protected areas where some activities such as recreational fishing are allowed, but these have been shown to be much less effective than no-take reserves for the long-term benefits of vulnerable species. The first few marine reserves took decades and a lot of effort and evidence to put in place. In the past, there have been objections from recreational fishers in local communities about having marine reserves in their closest fishing areas.



# LEARNING EXPERIENCE 6: MARINE RESERVES FOR EVERYONE

## Resources for this activity

- Timeline of marine conservation in New Zealand (📄 page 10)
- Marine values statements (📄 page 11)
- Fictional *New Zealand News* articles (📄 pages 12–15):
  - 1901: 'A sea full of fish'
  - 1937: 'Is our fish supply limited?'
  - 1974: 'Long struggle for marine protection'
  - 2017: 'More protection needed for marine habitats'

## Vocabulary

Values, attitudes, resources, conservation, sustainability, rules, laws, decisions, responsibilities, kaimoana.



**Focus question:**  
How has our thinking changed over time about the ocean and marine reserves?

## Inquiry stage 4: Extending thinking



## CHANGING HOW WE THINK ABOUT THE MARINE ENVIRONMENT

*Note: These are suggestions only, teachers are encouraged to adapt and change material to suit their students.*

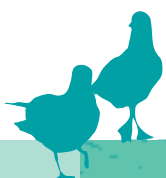


### Our values

- Define what values are, referring to your school values or the values identified by the New Zealand Curriculum (e.g. excellence, respect, resourcefulness, innovation).
- Discuss the values described in the *Timeline of marine conservation in New Zealand* (📄 page 10) e.g. honour, duty, exploration, innovation, harmony, knowledge, curiosity, sustainability.

Timeline of marine conservation in New Zealand

	1900s	1900s–1950s	1950s–1970s	1970s–2000	2000–2020	
<b>Values</b>	Honour, duty, exploration	Growth, doing, strength, courage	Order, power, courage	Fairness, harmony, knowledge	Care, honesty, respect	Sustainability, innovation
<b>Ways of using New Zealanders at that time</b>	People should be able to do whatever they like in the sea. The sea is a limitless resource.	What happens in the ocean does not affect me or other people.	We should be able to fish anywhere in our local waters to provide for our families.	It is important to try and understand what is happening in the ocean and how it is changing.	The resources and fish in the sea are limited and could run out. The fish and people in the ocean should be protected by rules, laws and marine reserves.	We are all responsible for caring for the sea to keep it healthy and full of life. If the ocean is clean and healthy, it can provide people with healthy foods and resources.
<b>Photos of people at that time</b>						
<b>Marine events</b>	Before 1800s: Māori settle in New Zealand. Coastal fishing on fish and shellfish for food. The haka was sung for the marine environment. 1800–1850s: Waves of immigrants arrive from Europe and elsewhere and set up fishing settlements.	Early 1900s: Trawling brings new species like fish, dogfish, and the Five Star Star jupe. Pressure on resources.	Overseas fishers fish in New Zealand without rules or limits. During the Second World War the fishing industry continues. Fishing is a big industry, earning New Zealand a lot of money through exports.	The fight for marine protected areas that include marine reserves is established at Leigh in 1975. New Zealanders begin to think about marine reserves and care of the environment. Fishing industry still growing but fish stocks are reducing.	Limits on fishing (quotas) are introduced in the 1980s as fish stocks fall further. Marine reserves are established in New Zealand with the help of the public. Marine reserves are established for commercial fishers.	Co-government of protected areas by local and government allows targets to be set to ensure the marine environment while the marine environment. Marine reserves are established for commercial fishers.
<b>Conservation and marine protection</b>	Māori fish ponds and kaitiaki have their own systems in place (e.g. Kaitiaki and Kaitiaki) for harvesting and consume resources. Some kaitiaki and closed reserves for certain species (environmental fishing). No high marine protection for most fish species.	The idea of marine conservation is starting to be thought about. Recreational fishing still has no rules but more restrictions for commercial fishing are introduced.	The idea of marine conservation is talked about more but not much is protected. The last sealing colony in New Zealand is 1966.	The request of the fishing industry begins to be felt and the idea of marine protection is introduced by Māori people. Cape Rodney/Quarantine Marine Reserve (CQR) (closed) becomes New Zealand's first marine protected area (1975). Whiting is overfished in 1984.	Marine reserves protected areas and reserves are created. Quota management system introduced in 1980 which sets yearly catch limits for certain fish species. Recreational fishing (angler limits) are introduced in 1985.	A growing amount of marine protection around New Zealand. Further limits on recreational fishing. Fish as fish stocks keep declining. Sea change and other planning tools are used to repair the marine environment.



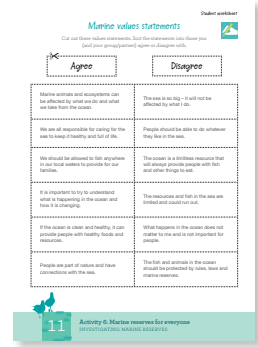
## Values statements

First introduce the vocabulary: resources, responsibility, ecosystem, rules, laws, rights, sustainability, limitless, limited.

- Explore the personal values of students. In pairs, students can decide if they agree or disagree with the *Marine values statements* on page 11. They can sort them into those they agree with and those they disagree with. Encourage discussion and debate.

### Questions:

- Which statements did you strongly agree with? Why do you strongly agree with these statements?
  - Which statements did you strongly disagree with? Why?
  - Would other people have the same opinions as your group?
- After they have sorted statements into those they agree and disagree with, ask students to group the statements into categories, such as the following (other groupings are acceptable too):





Category	Value statement
<b>Rules, laws and freedom</b>	People should be able to do whatever they like in the sea.
	The fish and animals in the ocean should be protected by rules, laws and marine reserves.
<b>Rights and responsibilities</b>	We are all responsible for caring for the sea to keep it healthy and full of life.
	The sea is so big – it will not be affected by what I do.
	We should be allowed to fish anywhere in our local waters to provide for our families.
<b>Health and connectedness</b>	If the ocean is clean and healthy, it can provide people with healthy foods and resources.
	What happens in the ocean does not affect me or other people.
	People are part of nature and have connections with the sea.
<b>Sustainability and resource management</b>	It is important to try and understand what is happening in the ocean and how it is changing.
	The ocean is a limitless resource that will always provide people with fish and other things to eat.
	The resources and fish in the sea are limited and could run out.
	Marine animals and ecosystems can be affected by what we do and what we take from the ocean.



# NEW ZEALANDERS' VALUES AND ATTITUDES TOWARDS THE SEA OVER TIME


- Explain to students that values can change over time. Individuals and communities can change their values for all sorts of reasons, including following experiences and events. New Zealanders have changed their thinking about the ocean and its resources over the past hundred years, as its resources have become more scarce.

## Changes in local marine ecosystems over time

- What can your community's elders remember about fishing, fish and the sea?
- From a Māori perspective, how have views and marine management changed over time? (See  Activity 5 for more information). How has the mauri in your area changed?
- How have your community's values and perspectives changed over the last 100 years? Interview a particular relative, kaumātua, and/or local personality about their values and attitudes to marine conservation. Start to build a picture of how people's views and the marine environment have changed over time and why those changes have occurred. For ideas about preparing for an interview and thinking about possible questions, see:  <https://www.history.com/images/media/interactives/oralhistguidelines.pdf>.



## Investigating changes in public opinion about marine conservation in New Zealand

- Students read the headlines and articles on  pages 12–15 (either individually or in pairs) and then match each one to the newspaper article it came from. Their aim is to find which headlines and articles describe the views and attitudes towards conservation and fishing at each time in history (1901, 1937, 1974, 2017).
- After reading these articles, discuss how values and attitudes about fish and the sea have changed over time in New Zealand. How do the values statements on pages 5–6 fit with each time period?

Note: These fictional articles are based on ideas from real newspaper articles of the time, for example the 1901 article, 'A sea full of fish' is based on 'Auckland's fish supply', *The New Zealand Herald*, Volume XLVIII, Issue 14571, 6 January 1911. The language and concepts have had to be simplified so the age group can understand them. The opinions expressed in the articles represent the views of mainstream New Zealand at the time, but are not indicative of every person's views at the time.



## How does your wider community feel about marine reserves and protecting marine environments?

- Ask or survey your wider local community about their attitudes, views and values about marine reserves. Design a survey (possibly an online survey) or interview your families, school community and neighbours. Collate the results to identify the current values and views of your community.
- Look closely at your survey results and find patterns and trends. Overall, does your community support the idea of marine reserves? Why or why not? If they do not support marine reserves, what are the reasons for this? What other measures do they have in place to ensure that the marine environment is safeguarded for future generations?





## Looking after community marine resources

- How are marine resources protected in your local environment? Which groups of people are in control of this?
- How are local iwi involved in marine management and conservation?

## REFLECTING ON LEARNING




Now that you have identified the past views of the sea and values relating to the marine environment, complete the statement on the right to describe your own views about marine reserves.



*Marine reserves are ...*

- ... important for the future of our oceans*
- ... safe areas for fish to breed*
- ... a good idea but shouldn't be in my local area*
- ... unnecessary and not important to me.*

## EXTENDING LEARNING

- Research local marine conservation heroes. Bill Ballantine was a marine biologist who was a marine conservation hero for New Zealand. He was one of the people at the forefront of the creation of New Zealand's first marine reserve at Cape Rodney-Okakari Point, known as Goat Island, near Leigh in 1975. Listen to this Radio New Zealand interview with Bill Ballantine in 2015 about the new Kermadec Ocean Sanctuary and its significance:  [http://www.radionz.co.nz/audio/player?audio\\_id=201773183](http://www.radionz.co.nz/audio/player?audio_id=201773183). He is also interviewed about winning the Goldman prize:  <https://www.youtube.com/watch?v=pmFUxbueFdM>.
- Find out more about groups of people who have influenced marine conservation (for example, Southern Seabird Solutions, the New Zealand Marine Studies Centre and the Hauraki Gulf forum) by looking at their websites, reading their material and talking to them. Explore their values and perspectives and how these have influenced their decisions and actions.
- What other questions do you have about how people have changed the marine environment in your local area?
- Explore how the needs of people might be balanced with other values and needs across the community in this Science Learning Hub and Sustainable Seas Challenge resource:  <https://www.sciencelearn.org.nz/resources/2506-looking-at-ecosystem-based-management-ebm>.





## OTHER RESOURCES ABOUT PEOPLE AND THE OCEAN

- OceanMOOC | 6.2 | *The ocean through history* (05.51 min):  
▶ <https://www.youtube.com/watch?v=HyDtoRBB2Jo>
- Description and timeline of fisheries in New Zealand:  
🔗 <http://fs.fish.govt.nz/Page.aspx?pk=51&tk=164>
- Learn about becoming a marine scientist with the Science Learning Hub's video interview with Dr Miles Lamare from University of Otago, *Becoming a marine scientist* (01.25 min):  
▶ <https://www.sciencelearn.org.nz/videos/35-becoming-a-marine-scientist>
- The BBC World Service series about people and oceans around the world from *The Compass*: ▶ <https://itunes.apple.com/nz/podcast/ocean-stories-the-atlantic/id1052738045?i=1000395119103&mt=2>



# Timeline of marine conservation in New Zealand

1800s

1900s–1930s

1930s–50s

1960s–1970s

1980s–2000

2000–2020

**Values**  
Honour, duty, exploration

Growth, daring, strength, courage

Order, power, courage

Fairness, harmony, knowledge

Curiosity, honesty, reason

Sustainability, innovation

**Views of many New Zealanders at that time**  
People should be able to do whatever they like in the sea. The sea is a limitless resource.

We should be able to fish anywhere in our local waters to provide for our families.

It is important to try and understand what is happening in the ocean and how it is changing.

The resources and fish in the sea are limited and could run out. The fish and animals in the ocean should be protected by rules, laws and marine reserves.

We are all responsible for caring for the sea to keep it healthy and full of life. If the ocean is clean and healthy, it can provide people with healthy foods and resources.



Ohi Bay, Bay of Islands – photograph of an oil painting (unknown artist) of the Rangihoua Mission Station. Archives NZ Archives New Zealand Reference: AAAME 8106 W5603 Box 111/11/1128 (CC BY 2.0)



Showing a recent catch of fish in the Hauraki gulf, near Thames, 1901, Auckland Weekly News. Photo: R. Lidyard. Sir George Grey Special Collections, Auckland Libraries, AWNS-19010726-8-2.



“Modern fishing methods in the Hauraki Gulf”, seine netting operations in progress, 1935, Auckland Weekly News. Photo: Staff photographer. Sir George Grey Special Collections, Auckland Libraries, AWNS-19350612-40-2.



Portobello, Otago Harbour. Ref: WA-72009-F. Alexander Turnbull Library, Wellington, New Zealand.



Cathedral Cove at Hahai became a marine reserve in 1993. Coromandel Peninsula – Cathedral Cove Beach – Christmas Barbeque Activities, January 1980. Photo: J. Waddington Archival reference: R24845126 AAQT 6539 W3537 6 / R107133 (CC BY 2.0)



St Clair beach, Dunedin, 2016. Photo: Graeme Scott (Public Domain Mark 1.0)

**Marine events**  
Before 1820s: Māori settle in New Zealand. Coastal tribes rely on fish and shellfish for food. They have some impact on the marine environment.  
1820–1900: Waves of immigrants arrive from Europe and elsewhere and set up fishing settlements.

Overseas fishers fish in New Zealand without rules or limits. During the Second World War the fishing industry continues. Fishing is a big industry, earning New Zealand a lot of money through exports.

The fight for marine protected areas: the first no-take marine reserve is established at Leigh in 1975. New Zealanders begin to think about marine resources and care of the environment. Fishing industry still growing but fish stocks are reducing.

Limits on fishing (quotas) are introduced in the 1980s as fish stocks fall further. More marine reserves are established in New Zealand with the help of the public.

Co-governance of protected areas by iwi and government allow tangata whenua to contribute and lead more to revive our marine environment. More limits on catch are introduced for commercial fishers.

**Conservation and marine protection**  
Māori tribal elders and kaumātua have their own systems in place e.g. rāhui and noa to regulate harvesting and conserve resources. Some limits and closed seasons for certain species (commercial fishing). No legal marine protection for most fish species.

The idea of marine conservation is starting to be thought about. Recreational fishing still has no limits but more restrictions for commercial fishing are introduced.

The impacts of the fishing industry begin to be felt and the idea of marine protection is supported by more people. Cape Rodney-Okakari Point Marine Reserve (Goat Island) becomes New Zealand's first marine protected area (1975). Whaling is banned in 1964.

More marine protected areas and reserves are created. Quota management system introduced in 1986 which sets yearly catch limits for each fish species. Recreational fishing snapper limits are introduced in 1985.

A growing network of marine protection around New Zealand. Further limits on recreational fishing likely as fish stocks keep declining. Sea change and other planning tools aim to repair the marine environment.

# Marine values statements



Cut out these values statements. Sort the statements into those you (and your group/partner) agree or disagree with.



Agree

Disagree

Marine animals and ecosystems can be affected by what we do and what we take from the ocean.

The sea is so big – it will not be affected by what I do.

We are all responsible for caring for the sea to keep it healthy and full of life.

People should be able to do whatever they like in the sea.

We should be allowed to fish anywhere in our local waters to provide for our families.

The ocean is a limitless resource that will always provide people with fish and other things to eat.

It is important to try to understand what is happening in the ocean and how it is changing.

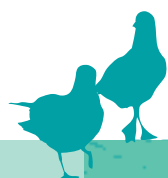
The resources and fish in the sea are limited and could run out.

If the ocean is clean and healthy, it can provide people with healthy foods and resources.

What happens in the ocean does not matter to me and is not important for people.

People are part of nature and have connections with the sea.

The fish and animals in the ocean should be protected by rules, laws and marine reserves.



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# New Zealand News, 1901

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## A SEA FULL OF FISH

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### So many fish in the sea

Most New Zealand waters are teeming with fish. The sea can supply food for everyone, but getting it out of the water and onto our tables can be expensive and difficult.

Fish is a very valuable and popular food. Seafood is an important part of our diets. We need new fishing methods to harvest more fish.

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Fish warehouse. Photo: Newcastle Libraries, Unknown c.1900. (Public Domain Mark 1.0)



### Few problems catching fish

Fishermen are catching so many fish that sometimes they don't know what to do with them all. It is not possible for people to reduce the fish and animals in the sea, since there is an enormous amount of water all over the planet. If we are having any trouble catching fish, we can move to another place, and there will usually be other fish waiting. Moving and travelling fish soon make up for any lost fish in an area. The sea can bounce back easily from fishing.

### Unwanted fish

Some types of fish are more delicious and more popular than others. We have so many fish available that we can pick and choose which ones we like to eat most. The less popular, less tasty fish can be used as fertiliser, pet food or be thrown away.



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# New Zealand News, 1937

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## IS OUR FISH SUPPLY LIMITED?

### Fish numbers

Fishermen are saying that it is a little harder to catch fish than it was years ago. Most fishing trips are successful, but sometimes it can take a while to catch a fish. We are not sure why, but our fish supply seems to be decreasing. It is not as limitless as we once thought it was. More research is needed to see what is happening.

### A limit to the number of fish?

Going further from land to find more fish is no longer working for fishers. People have fished far and wide. New types of fishing lines and nets have made it easier to catch a lot of fish at a time. But is this the right thing to do? Can we take as much as we want to? Would it ever be possible for us to run out of fish? At this time, we don't really know. In the future we will find out!

### Information and data

More information and scientific data is needed to understand the exact numbers of different fish in New Zealand. We don't know enough yet about how many fish are in our seas. When we have more information and data, we can then make better decisions about how we use them and if we need more rules about fishing.



*Photo: Newcastle Libraries, Unknown c.1930. (Public Domain Mark 1.0)*



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# New Zealand News, 1974

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## Long struggle for marine protection

### Marine protection for study

In the past, we believed that there was a limitless supply of fish and that we could never run out. Back then we could not observe fish easily and didn't know any better. Now scientists understand that there is a limited number of fish in the ocean.

For nine long years, scientists from Auckland University's Marine Laboratory have been fighting for one of the world's first marine reserves north of Auckland at Cape Rodney–Okakari Point, known locally as Goat Island or Leigh Marine Reserve.

Scientists would like to protect the area so they can study the sea life without disturbance. The scientists (Dr Bill Ballantine and Professor Val Chapman) have also recorded a loss in fish numbers in the last few years and have also seen the habitats in the area degrade over time. They have written to politicians, talked to schools and the public and organised public meetings trying to get protection for the area.

### Not all agreed

There have been some local residents who don't want a marine protected area. "I can't imagine not being able to fish in our own local



*Bill Ballantine at Cape Rodney–Okakari Point. Photo: Kennedy Warne.*

bay – it's our right," said one local. Others can see some potential for the area to become a haven for fish to breed and restore the fish supply.

### High hopes for marine reserve

Marine scientists behind the marine reserve idea are hopeful: "A no-take, no fishing reserve will protect our fish supply for the future. It will be a place to learn about marine animals and habitats and study the natural processes in the sea. We hope that it will also eventually be a tourist attraction and a nursery ground where fish can breed."





# New Zealand News, 2017

## More protection needed for marine areas



Fishing vessels docked at Viaduct Harbour, Auckland. Photo: D. Coetzee (CCo 1.0)

### More problems with harbour health

The health of the local harbour and sea have been tested and the results are alarming. Fewer fish are being seen and it is more difficult to find shellfish, crayfish and other things of a legal size to collect from the area.

### New study finds fish numbers down

Our fish supply has been found to be at an all-time low and something must be done if we want future generations to be able to have a healthy marine environment in the future. With more and more people living in the area and the recent problems with pollution and sediment from land, councils and other groups are looking at what they can do to make a difference to the situation.

### Changes to fishing and planning

It has been suggested that more marine protected areas are needed and that more fishing restrictions should be introduced if we want to continue to have a sustainable fish supply.

### Restoring harbour and sea

Scientists agree that there should be even more limits on fishing, marine farming and the release of sediment and nutrients from land. We will need more new types of protection for oceans to keep them healthy for the future.

A new marine plan is designed to improve the mauri (life force and vitality) of the sea and better protect marine animals for current and future generations.

