THE LAST ocean

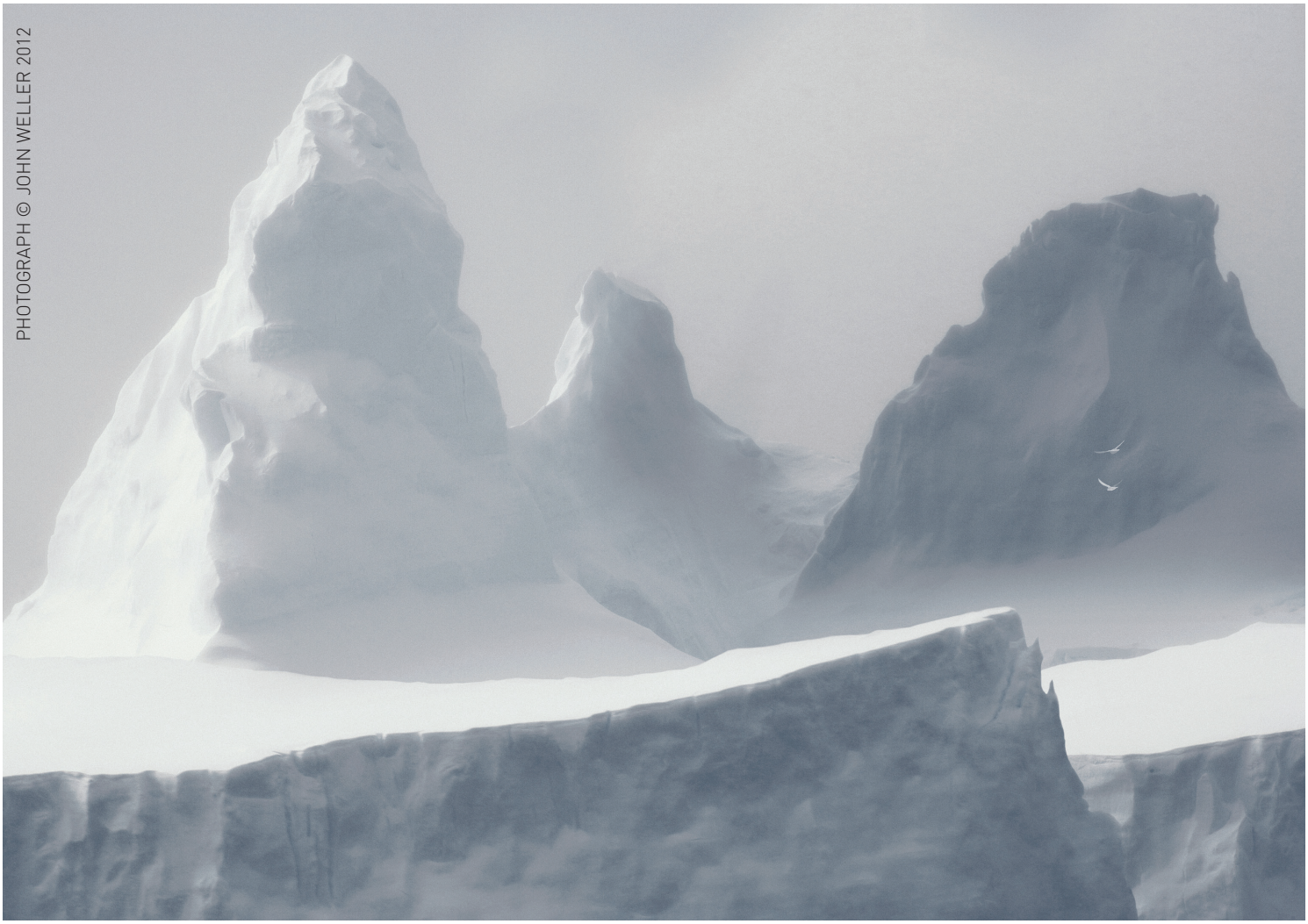
EXPLORING NEW ZEALAND'S CONNECTION TO THE ROSS SEA, ANTARCTICA

Education Resource for New Zealand Schools

YEARS 7-10

www.lastocean.org

theLASTOCEAN CHARITABLE TRUST



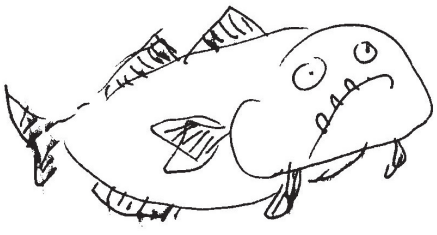
PHOTOGRAPH © JOHN WELLER 2012

ANTARCTICA FAST FACTS

- The first confirmed sighting of the continent was in 1820.
- Explorers first reached the South Pole in 1911.
- Antarctica is the coldest continent; temperatures in the winter can drop below -73°C (-100°F).
- The lowest temperature ever recorded on Earth was at Russia's Vostok Station in Antarctica: -89.2°C (-128.6°F) on 21st July, 1983.
- Antarctica is also the driest continent; it is almost entirely desert. Very little snow or rain falls on the continent, but because it is so cold, the small amount of snow that does fall does not melt. Over a long time this little amount of snow (just a few centimetres per year) has slowly grown into a huge ice cap.
- The ice can be more than 4 km thick in some places. This ice flows off the continent and creates floating ice shelves over the ocean; these shelves break up and create icebergs.
- About 70% of Earth's fresh water is in the Antarctic ice cap.
- There are no countries in Antarctica; the continent is governed by an international treaty (the Antarctic Treaty).
- There are no permanent residents, but up to 1,000 people may be wintering over at various research stations.

WOW

"If Antarctica's ice sheets melted, the world's oceans would rise by 60 - 65 metres!"



FOREWORD

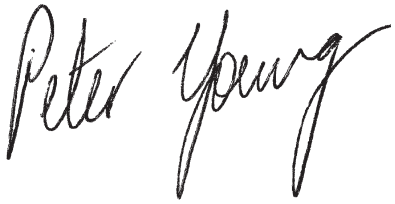
During my career as a documentary cameraman I have filmed on every continent on Earth, from the Serengeti to Siberia, the slopes of Everest to the underwater canyons of Kaikoura, and the Ross Sea is without doubt one of the most amazing places I have been to. It has the most productive waters in the entire Southern Ocean and teems with life, with many species found nowhere else on the planet.

What makes this remote corner of our world special is that it is the most untouched and intact marine ecosystem left on Earth. It is one of the last places where you can see the top predators, including large fish, whales, seals and penguins in natural numbers. Scientists refer to the Ross Sea as a living laboratory, a place that can teach us about the workings of all marine ecosystems.

The fishing industry has recently found its way to the Ross Sea. In 1996 New Zealand initiated an Antarctic toothfish fishery which now plans to reduce the adult population of toothfish by 50% over 35 years. We know from experience in every other ocean on Earth, that when you remove a top predator from an ecosystem it will have wide reaching impacts. Remove the toothfish and the natural balance of the Ross Sea ecosystem will be lost forever. This raises the simple ethical question: do we fish the last ocean or do we protect it?

With rapid environmental change taking place across the globe, it's vital that we inform our young people about what is happening in the world and engage them to think critically about issues and how they are reported.

The Last Ocean documentary was completed in July 2012. Used alongside this education resource, we hope to provide a tool for teachers and students that not only celebrates the remarkable animals of the Ross Sea ecosystem, but also explores the business, politics and values that affect this precious and important part of the world.



Peter Young

Director, The Last Ocean documentary

Co-Founder, The Last Ocean Charitable Trust

November 15, 2012

The Last Ocean Charitable Trust was established in Christchurch in August 2009, to raise awareness about the pristine qualities of the Ross Sea Antarctica and promotes the establishment of a Ross Sea marine protected area.

ACKNOWLEDGEMENTS

This resource has been coordinated by Tracy Roe from the Last Ocean Charitable Trust and Tanya Jenkins of the Environmental Education Consultancy, assisted by Sue Charmley (Senior Teacher) and Bill Simpson (Writer and Researcher). Al Nisbet provided the worksheet graphics. Mike Yule provided the toothfish cartoons.

In addition, special thanks are given to the following educators who have assisted by either trialling the resource or giving advice: Jocelyn Papprill, Heather Gibbs, Jamie L'Huillier, Christine Murphy, Nicky Gilkison. Thanks also to the Last Ocean Education Working Group: Kate Beer, Kate Sidey and Tracy Roe; Cassandra Brooks for research; Jude Sutherland for design and layout; and Elizabeth Koroivulaono for website coordination.

The resource is based on information contained in the Last Ocean Charitable Trust website, researched and written by Cassandra Brooks and Peter Young with input from Dr. David Ainley and John Weller. Documentary footage on the website has been provided by Peter Young. Photographic images and graphics (unless otherwise credited) have been provided by John Weller.

The Last Ocean feature film was produced and directed by Peter Young.
Full credits for the film are on the DVD.

Finally a big thank you to our sponsors for supporting this project either through the Trust or the film.

Antarctic Ocean Alliance - http://antarcticocean.org/home.php
Antarctic and Southern Ocean Coalition (ASOC) - http://www.asoc.org/
Biotherm - http://www.biotherm.com/
Eco-Sys Action - http://www.ecosysaction.org/
Fisheye Films - http://www.fisheyefilms.co.nz
Global Ocean - http://www.globalocean.org.uk/
International Fund for Animal Welfare - http://www.ifaw.org/united-states/
Logan Brown Restaurant & Bar - http://www.loganbrown.co.nz/
NZ on Air - http://www.nzonair.govt.nz/home.aspx
New Zealand Film Commission - http://www.nzfilm.co.nz/
Park Road Post Production - http://www.parkroadpost.co.nz/
Voila!
Whale and Dolphin Conservation - http://www.wdcs.org/
WinWeb Business Cloud - http://www.winweb.com/

PHOTOGRAPHS © JOHN WELLER 2012

CONTENTS

HOW TO USE THIS RESOURCE

The resource is designed to be used in Years 7 – 10 and has been developed in the Social Science / Inquiry, Science and English areas of the curriculum. It is based primarily on the Last Ocean Charitable Trust website:

www.lastocean.org

The topic has endless tangents, which students may explore with the Inquiry method, and would sit nicely within an Inquiry unit, either on the Ross Sea, Antarctica, or broader conservations issues. Included are example supporting questions to aid in this research. Additional activities, fact sheets and cameos to support exercises and further research can be found at the end of this booklet.

The resource is accompanied by a DVD of the 88-minute documentary film The Last Ocean, which can be viewed in sections or as a whole. The DVD comes with a short film trailer and a slideshow of photographic images of Ross Sea wildlife. Both provide useful introductions to the study topic.

The resource contains seven teaching and learning areas based on the Last Ocean website:

1 **OCEANS AND THE ROSS SEA**
2 **GEOGRAPHY**
3 **CLIMATE**
4 **WILDLIFE**
5 **ECOSYSTEM**
6 **FISHING**
7 **PROTECTION**

The resource has elements of research throughout which focus on the key question:

"Why is the Ross Sea called the Last Ocean?"

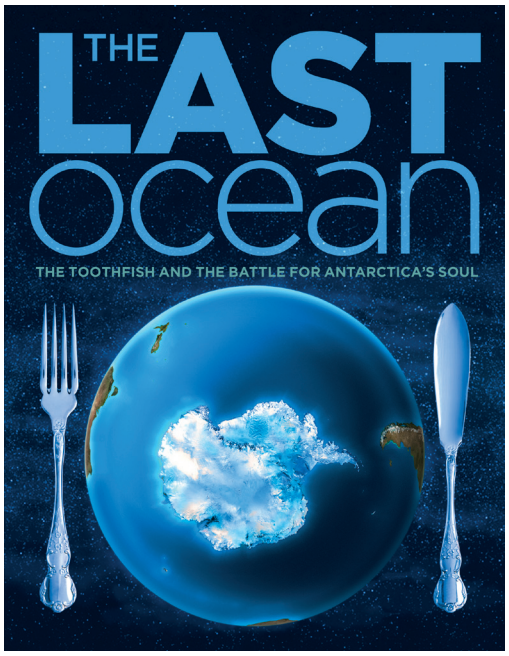
Students are guided to reflect on that question at the end of their studies, and reach their own conclusions.

- The students will need a workbook, log book or a clear file to keep a record of their responses, questions, findings, etc. as they work through the areas. Internet access is desirable for many of the learning activities.
- Access to a data projector or interactive whiteboard would be very useful throughout this unit.
- Access to DVD player and screen is desirable for viewing chapters from the Last Ocean DVD. Alternatively short videos may be viewed online from YouTube links within the resource, either individually or in the classroom.
- The resource includes a large number of activities, which may be researched by individuals, groups or the entire class.
- After gaining knowledge and an understanding of the near pristine nature of the Ross Sea, students are challenged to become involved in protecting this area. By doing so they realise what social responsibility is and its importance to local, national and global issues.
- Included in the resource are literacy lessons targeting 5 reading comprehension strategies:
  1. Summarising
  2. Visualising
  3. Making connections to prior knowledge
  4. Questioning
  5. Identifying the main idea
- The texts for the literacy lessons are based on the Last Ocean website and some of the specialised vocabulary is complex. Teachers may want to make use of the traffic light method, where the students skim and scan the text, prior to reading and highlight with colour key vocabulary they have found:
  Green = words I know the meaning of
  Orange = words I think I know the meaning of
  Red = words I do not know the meaning of

  The reader's prior knowledge is vital for comprehension; therefore it would be helpful for the students to have a basic knowledge of Antarctica in general and the Ross Sea in particular. The pre-reading discussion is a crucial part of the lesson.

Interested students may also be directed to the Last Ocean on Facebook and Last Ocean Blog to keep up with latest news about the Last Ocean campaign.

USING THE DVD



The Last Ocean feature documentary has a duration of 88 minutes. For your convenience the DVD is divided into 16 chapters facilitating navigation:

CHAPTER 1	**Beginnings**
CHAPTER 2	**Great White South**
CHAPTER 3	**Signing of the Antarctic Treaty**
CHAPTER 4	**CCAMLR** (Commission for the Conservation of Antarctic Marine Living Resources)
CHAPTER 5	**The Remarkable Toothfish**
CHAPTER 6	**State of the World's Oceans**
CHAPTER 7	**Ross Sea Wildlife**
CHAPTER 8	**David Ainley: The Scientist**
CHAPTER 9	**A campaign is born**
CHAPTER 10	**Fish markets**
CHAPTER 11	**Jim Barnes (ASOC) joins the campaign**
CHAPTER 12	**Call for a Ross Sea MPA**
CHAPTER 13	**Fishing in the Ross Sea**
CHAPTER 14	**Campaign goes global**
CHAPTER 15	**People Power**
CHAPTER 16	**Beautiful Ross Sea**

For classrooms without a DVD player, or for homework assignments, we have provided alternative links to similar short videos on The Last Ocean Education YouTube Channel. There are clear instructions within the resource on how to find each video which is labelled with a number and name that corresponds to the YouTube channel.

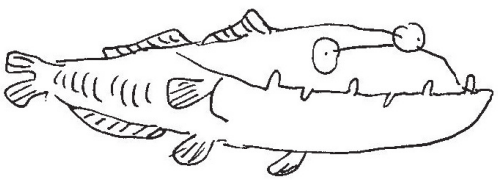
Also provided on the DVD

- The Last Ocean Official Trailer [duration 2'44"]
- A slideshow of John Weller's still photographic images of wildlife and scenery from the Ross Sea [duration 2'48"]
- Ross Sea Wildlife – a short video of the wildlife of the Ross Sea [no narration, duration 5 minutes]

All are excellent introductions to the study.

WOW

"Over a million people have signed the petition to protect my home."



WHERE TO BEGIN

Below are a number of 'starter' options to capture the interest of students.

- Introduce the concept of Antarctica and its inhabitants by watching the first 15 minutes of the animated film "Happy Feet."

  or

- Watch the Trailer of the documentary "The Last Ocean" on the supplied DVD or view the video on YouTube – 1. Last Ocean Official Trailer

  or

- Visit Google Earth, identify New Zealand and then track down to the Ross Sea and open the story "Our Ross Sea".

You can also use **WOW** statements to hook the student's interest. You can place these statements on the wall or simply discuss with students or ask a student each day to draw a question from a hat and read it out.

WOW The Ross Sea in Antarctica is the most intact marine ecosystem on Earth!

WOW It has not rained in the dry valleys for at least 2 million years!

WOW Antarctica is the only continent with no native human population, no language and no currency!

WOW Antarctica is the coldest, driest, highest, windiest, iciest continent on earth!

WOW If Antarctica's ice sheets melted, the world's oceans would rise by 60 – 65 metres!

WOW All time zones converge in Antarctica. So what is the time in Antarctica?

WOW During the feeding season, a full grown Antarctic blue whale can eat enough in one day to feed a human for 4 years!

Tell the students that they too can find their own **WOW** statements during their study and can write them on the large map or Antarctic notice board in the classroom.

Display the following questions prominently in the classroom for the duration of the study.

Where is the Ross Sea?

How much do you know about the Ross Sea?

What is special about the Ross Sea?

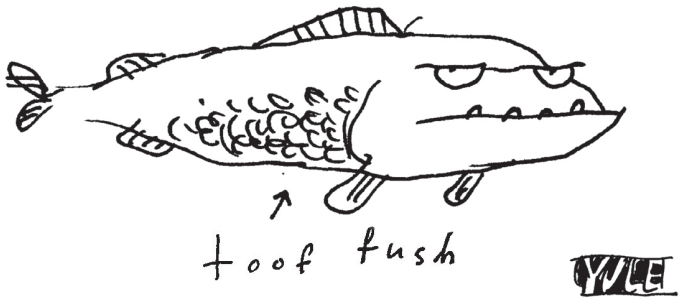
Why is the Ross Sea called The Last Ocean?

How can I help to protect the Ross Sea?

A large blank outline map of Antarctica is a useful resource to begin with. After discussions and research children could add place names and snippets of information onto the map either with felt pen or stick-it notes.

A template map is included in this resource.

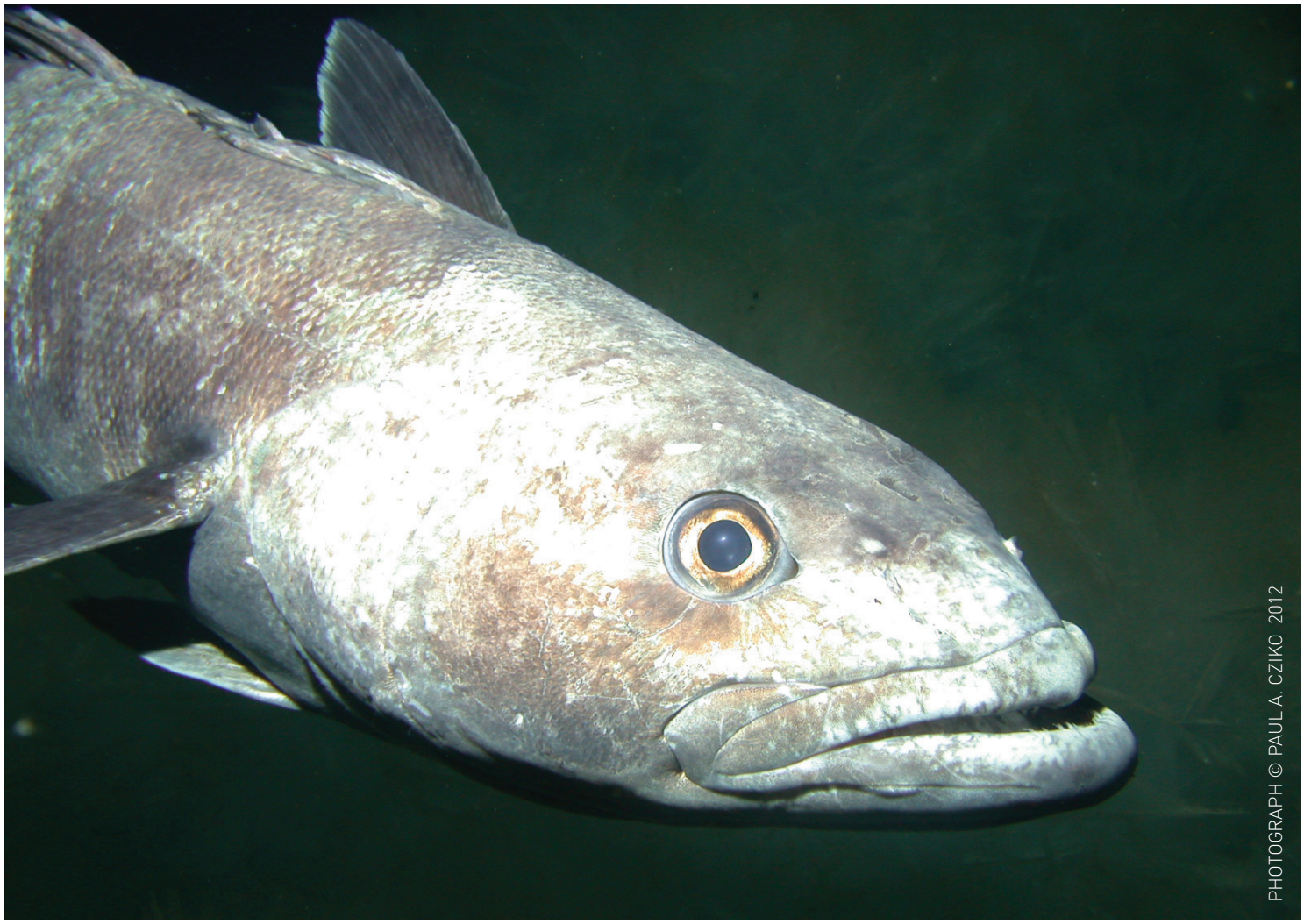
A large chart to record interesting/new/specific vocabulary could also be useful.



THE ANTARCTIC TOOTHFISH

Throughout this resource you will notice the cartoon character of the Antarctic toothfish. This fish is an important link in the ecology of the Ross Sea and it is essential that students become aware of the significance of the toothfish.

To help you, the toothfish character will voice the **WOW** statements that you can use to keep inspiring and motivating your students.

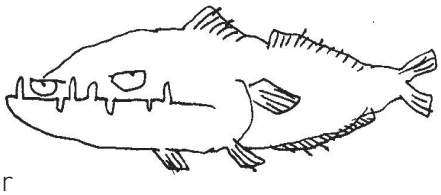


PHOTOGRAPH © PAUL A. CZIKO 2012

ANTARCTIC TOOTHFISH FAST FACTS

SCIENTIFIC NAME - DISSOSTICHUS MAWSONI

- Antarctic Toothfish are known to live up to 48 years. They can reach almost 2 metres in length and can weigh in excess of 80 kilograms.
- Antarctic Toothfish live in the ice-laden waters of the Southern Ocean surrounding Antarctica. They feed on icefish, violet fish, squid and silverfish. Juveniles may be prey of the Weddell seal, the leopard seal, large squid and orca.
- In the United States this fish is known as Chilean Seabass and sells for as much as US $70 per kilogram (source; New Zealand Seafood Industry Council, 2011).
- The Antarctic Toothfish produces large amounts of antifreeze glycoprotein, which allows it to survive the sub-zero waters of the Antarctic.
- The heart of the Antarctic Toothfish can beat as little as once every ten seconds.
- These fish also have amazing retina in their eyes; these retina are fully adapted to low light levels so that even when the surface of the sea is covered by ice and snow the specialized eyes can still see into great depths.
- The toothfish has been caught at depths in excess of 2000 metres.



WOW

"Can you believe I'm worth US$70 a kilogram?"

CURRICULUM CONNECTIONS

ACHIEVEMENT OBJECTIVES

Students will gain knowledge, skills and experience to:

SCIENCE

NATURE OF SCIENCE

LEVEL 3

- Appreciate that science is a way of explaining the world and that science knowledge changes over time.
- Use their growing science knowledge when considering issues of concern to them.
- Explore various aspects of an issue and make decisions about possible actions.

LEVEL 4

- Develop an understanding of socio-scientific issues by gathering relevant scientific information in order to draw evidence-based conclusions and to take action where appropriate.

ECOLOGY

LEVEL 3 AND 4

- Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.

SOCIAL SCIENCES

LEVEL 3

- Understand how people view and use places differently.
- Understand how people make decisions about access to and use of resources.

LEVEL 4

- Understand how exploration and innovation create opportunities and challenges for people places and environments.
- Understand that events have causes and effects.

ENGLISH

LISTENING, READING AND VIEWING
SPEAKING, WRITING AND PRESENTING

LEVEL 3

- Integrate sources of information, processes and strategies with developing confidence to identify, form and express ideas.

VALUES

By using the Last Ocean website and its associated educational resources, students will be encouraged to value:

- Excellence, by aiming high and persevering in the face of difficulties.
- Innovation, inquiry and curiosity, by thinking critically, creatively and reflectively.
- Community and participation for the common good.
- Ecological sustainability, which includes care for the environment.
- Respect for themselves, others and human rights.

KEY COMPETENCIES

Drawing on knowledge, attitudes and values in ways that lead to action. Students will utilise the following key competencies in a variety of activities.

- Thinking critically and creatively.
- Using language, symbols and texts.
- Managing self.
- Relating to others.
- Participating and contributing.

GREAT LINKS

In compiling this education resource, the authors consulted many websites. For your benefit they have listed some of the more useful sites to assist your studies of the Ross Sea and Antarctica.

WEBSITES FOR TEACHERS

http://www.sciencelearn.org.nz/Science-Stories/Research-Voyage-to-Antarctica - The story of a voyage of the NZ research ship Tangaroa to Antarctica. Excellent NZ site with information including life on board the Tangaroa, wildlife and making a foodweb.

http://www.coolantarctica.com/schools/antarctica_school.htm - This site is a very comprehensive source of information on all aspects of Antarctica and includes photos, lesson plans, quizzes and lots more. The site was developed by a UK scientist and teacher.

http://www.classroom.antarctica.gov.au - This is a comprehensive online teaching resource produced by the Australian Antarctic Division. It is particularly aimed at grades 5 to 8. It has a large on-line library of teacher resources and ideas for activities.

http://www.anta.canterbury.ac.nz/documents/GCAS%20electronic%20projects/GCAS%2010%20projects/Rebecca%20Logan.pdf - This is a NZ resource for teachers, it has curriculum linkages, website links etc. It also has a list of teachers who have been to Antarctica.

http://www.topmarks.co.uk/Search.aspx?q=antarctica - This site is a UK education search engine, it lists and grades teaching resources and then gives you links to their choices.

http://www.discoveringantarctica.org.uk/ - This is a British site with good access to videos, photos and many interactive resources.

http://www.scar.org/about/capacitybuilding/antarcticeducation/ - The education website for the international Scientific Committee on Antarctic Research, it has links to a wide range of education activities on other websites which could be used by both teachers and students.

Click on the website links or copy and paste into your web browser.

WEBSITES FOR STUDENTS

http://library.thinkquest.org/CR0215022/explorers.htm - This is an Antarctic site developed by six USA children on Oracle's ThinkQuest programme. The language is easy and there are a wide variety of topics covered – explorers, climate, wildlife, glaciers, timelines, ozone, etc.

http://www.aussieeducator.org.au/curriculum/socialscience/antarctic.html - This is an Australian site on the Antarctic and contains a one-page list of links. It is for students and teachers.

http://www.sciencelearn.org.nz/search?top_search=true&SearchText=antarctic&x=10&y=11 - This NZ site gives access to a series of short videos, activities etc. about the Antarctic – topics include ice fish, dressing for the ice, using a field toilet, the benthic zone etc.

http://www.sciencelearn.org.nz/Science-Stories/Research-Voyage-to-Antarctica - The story of a voyage of the NZ research ship Tangaroa to the Antarctica.

http://icestories.exploratorium.edu/dispatches/ - Dispatches from Polar Scientists.

http://www.britannica.com/EBchecked/topic/27068/Antarctica/24727/The-heroic-era-of-exploration - The heroic era of exploration – Scott and Shackleton both have strong ties with the Ross Sea.

http://www.penguinscience.com/classroom_home.php - The Penguin Science Education Page contains fun and educational activities to help students learn about Adelie penguin life, history and their relationship to climate change. There is also a link to a live Penguin Cam at Cape Royds adelie penguin colony: http://thistle.org/pcam/

http://www.ecosysaction.org/boopy/ - Ecosys-Action for Kidz: fun activities, online stories and cartoons about ecosystem management around the world led by Boopy and the action team.

KEY TERMS RELATED TO THE ANTARCTIC

ANTARCTIC TOOTHFISH

Dissostichus mawsoni

Closely related to the Patagonian toothfish, *Dissostichus eleginoides*. Both are referred to as "Chilean sea bass" in the market. In the Ross Sea, the Antarctic Toothfish fishery was initiated by New Zealand in 1996. Since then numerous nations have joined the fishery, which has an annual Total Allowable Catch of around 3,000 tonnes. From the beginning New Zealand has caught almost half of the total catch.

ANTARCTIC TREATY

The Antarctic Treaty was signed in Washington on 1 December 1959 by the twelve countries whose scientists had been active in and around Antarctica during the International Geophysical Year (IGY) of 1957-58. It entered into force in 1961 and has since been acceded to by many other nations. The total number of Parties to the Treaty is now 48.

Some important provisions of the Treaty:

- Antarctica shall be used for peaceful purposes only (Art. I)
- Freedom of scientific investigation in Antarctica and cooperation toward that end ... shall continue (Art. II).
- Scientific observations and results from Antarctica shall be exchanged and made freely available (Art. III).

(Source; http://www.ats.aq/e/ats.htm - website of the Antarctic Treaty Secretariat)

AOA

(Antarctic Ocean Alliance)

Established in 2010, the Antarctic Ocean Alliance (AOA) is a coalition of leading environmental and conservation organisations working to establish a network of designated, no-take marine reserves and marine protected areas in the Antarctic. With such a network in place, key Antarctic ocean habitats and wildlife would be protected from human interference.

(Source; http://antarcticocean.org/ - website of the Antarctic Ocean Alliance)

ASOC

(Antarctic and Southern Ocean Coalition)

The Antarctic and Southern Ocean Coalition (ASOC) is a global coalition of over 30 non-governmental organisations (NGOs) interested in Antarctic environmental protection. ASOC has a seat at the CCAMLR table and has worked since 1978 to ensure that the Antarctic Continent, its surrounding islands and oceans survive as the world's last unspoiled wilderness, a global commons for the heritage of future generations.

(Source; http://www.asoc.org - website of the Antarctic and Southern Ocean Coalition)

CCAMLR

(Commission for the Conservation of Antarctic Marine Living Resources)

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is the international body charged with managing the living marine resources around Antarctica. It was established by international convention in 1982 with the objective of conserving Antarctic marine life. It has made a commitment to designate a network of MPAs around Antarctica. The Ross Sea has been identified as one of these areas.

The CCAMLR commission, which is an extension of the Antarctic Treaty System, has 25 member nations and convenes for discussions once a year (usually in Oct/Nov). The commission operates on consensus with each member nation getting one vote.

(Source; http://www.ccamlr.org/en/organisation/about-ccamlr - website of CCAMLR)

CONTINENTAL SHELF

A continental shelf is the submerged edge of a continent. The Antarctic Continental Shelf is relatively narrow (60-240 km wide) and deep: it ranges very shallow areas of less than 50 m near the coast to areas deeper than 800 m and has an average depth of 500 m. Beyond the shelf the Antarctic continental slope descends to over 3000 m and levels out on the abyssal plains at depths of 3700-5000 m (5km).

(Source; website http://www.antarctica.gov.au/about-antarctica/wildlife/animals/seabed-benthic-communities)

ECOSYSTEM

An ecosystem is a group of plants and animals and the environment in which they live. It also includes the many relationships connecting these organisms, allowing them to survive in their environment.

Some relationships are simple, like those between a predator and prey or two species that compete for the same food. Others are more complex, like a link between a predator and its prey's prey. All these organisms are interconnected by a grand play of checks and balances - essentially the ecosystem functions as a single organism.

Damage to one part of an ecosystem (like removing a top predator by commercial fishing) will be felt

ECOSYSTEM continued	in a multiple of ways, inevitably changing the overall natural balance. Often these effects are difficult to anticipate or understand. *(Source; website http://www.lastocean.org/Ross-Sea/The-Ecosystem-/Ross-Sea-Antarctic-trophic-level-toothfish-predator-prey-__l.3487)*
HIGH SEAS	Oceans, seas, and waters outside of national jurisdiction are referred to as the "high seas" or, in Latin, mare liberum (meaning free seas). Ships sailing the high seas are generally under the jurisdiction of the flag state (if there is one) however, when a ship is involved in certain criminal acts, such as piracy, any nation can exercise jurisdiction under the doctrine of universal protection. A Convention on the High Seas was signed in 1958. *(Source; http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_1_1958_high_seas.pdf)*
ICE SHELF	An ice shelf is a thick floating platform of ice that forms where a glacier or ice sheet flows down to a coastline and onto the ocean surface. Usually the edge of the shelf is a high ice wall. The ice is from several sources: the flow from inland places to the coast, snow that has fallen on the upper surface and seawater that has frozen to the lower surfaces. Ice shelves are found only in Antarctica, Greenland and Canada. The Ross Ice Shelf is the largest in the world.
MARINE PROTECTED AREAS (MPAs)	Marine Protected Areas (MPAs) Marine protected areas (MPAs) are the ocean equivalent of national parks. They limit human impact to protect the biodiversity and the natural and cultural values of an area. *(Source; http://www.lastocean.org/Marine-Protection/Protection-Ross-Sea-Antarctica-__l.1898)*
PHYTOPLANKTON	These are tiny organisms, mostly single celled plants, that live near the surface of water. They drift with ocean currents. They are the base of the marine food web supporting all the animals above – they are eaten by a wide range of other species, such as small animal-like zooplankton. *(Source; http://earthobservatory.nasa.gov/Features/Phytoplankton/)*
POLYNYAS	Polynyas are large areas of open water that have formed among the pack ice. They tend to be very productive areas, full of phytoplankton, krill, fish, whales and seals. Emperor Penguin colonies tend to be located near recurring polynyas.
PREDATORS	A predator is an animal that eats another animal, referred to as its prey. In the Ross Sea food chain, the Antarctic Toothfish feeds on smaller fish such as squid and silverfish. In turn the Toothfish can be eaten by Killer Whales (Orca), Weddell seals, and possibly by large squid.
LAST OCEAN CHARITABLE TRUST	Established in Christchurch, New Zealand in August 2009, the Last Ocean Charitable Trust aims to raise awareness about the pristine qualities of the Ross Sea and promotes the establishment of a Ross Sea marine protected area. *(Source; http://www.lastocean.org/About-Us/Last-Ocean-Ross-Sea-__l.330)*
TOTAL ALLOWABLE CATCH (TAC)	In New Zealand Total Allowable Catch (TAC) refers to the total quantity of each fish stock that can be taken by commercial, customary Maori interests, recreational fishery interests and other sources of fishing-related mortality, to ensure sustainability of that fishery in a given period, usually a year. *(Source; website http://fs.fish.govt.nz/Page.aspx?pk=78&dk=1842)*
WORLD HERITAGE SITES	A World Heritage Site is a place of special significance for the international community. It may be important because of its physical or cultural values. By 2010 there were more than 900 sites listed. The list is kept by UNESCO (United Nations Education, Scientific and Cultural Organisation). The Pyramids of Egypt, for example, are a World Heritage Site because of their cultural value. The national parks of Southwest New Zealand (including Fiordland, Aoraki/Mt Cook, Mt Aspiring and the West Coast glaciers) are World Heritage Sites because of their physical importance. Because of its rich biodiversity, the Ross Sea has been suggested for World Heritage Site listing. Similar water bodies included as World Heritage sites are the African Rift lakes, the Galapagos Islands and the Lake Baikal in Russia. *(Source; website http://whc.unesco.org/)*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