Teacher Kit

Years 4, 5 and 6

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The PFA, together with the Coffs Harbour Fishermen's Cooperative, thank the New South Wales Government for funding the Seafood Industry Partnership Program. We would also like to acknowledge the Fisheries Research and Development Corporation for financial support to assist in the preparation of this kit. This kit was developed by Honey and Fox Pty Ltd with professional advice and support from Hayley Reynolds.

PFA Fisheries Excursion Unit Outline

In this unit, students will cover an extensive range of curriculum points through an in-depth look at New South Wales' fishing industry and an inquiry project. They will investigate fishing through the ages, from Pre-Colonisation Indigenous fishing to the present and also look at the challenges to be faced for fishing in the future. They will explore the connection between humans and the marine environment and how they interact. Students will begin to explore species of fish and marine life commonly caught in New South Wales and the process of fishers bringing this seafood from ocean to table. They will understand why sustainable fishing is so important, to the environment, the economy and society as a whole, and how Australia is a global leader in their laws and regulations surrounding this area.

Australian Curriculum Strands Covered in this Unit

English

Year 4

- Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and information (ACELY1687 - Scootle)
- Use interaction skills such as acknowledging another's point of view and linking students' response to the topic, using familiar and new vocabulary and a range of vocal effects such as tone, pace, pitch and volume to speak clearly and coherently (ACELY1688 - Scootle)
- Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences (ACELY1689 - Scootle)
- Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features (ACELY1694 - Scootle)
- Re-read and edit for meaning by adding, deleting or moving words or word groups to improve content and structure (ACELY1695 - Scootle)
- Use a range of software including word processing programs to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1697 - Scootle)

Year 5

- Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences and present and justify a point of view (ACELY1699 - Scootle)
- Plan, rehearse and deliver presentations for defined audiences and purposes incorporating accurate and sequenced content and multimodal elements (ACELY1700 - Scootle)
- Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience (ACELY1704 - Scootle)
- Use a range of software including word processing programs with fluency to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1707 - Scootle)
- Re-read and edit student's own and others' work using agreed criteria for text structures and language features (ACELY1705 - Scootle)

Year 6

- Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions (ACELY1709 - Scootle)
- Use interaction skills, varying conventions of spoken interactions such as voice volume, tone, pitch and pace, according to group size, formality of interaction and needs and expertise of the audience (ACELY1816 - Scootle)
- Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis (ACELY1710 - Scootle)
- Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience (ACELY1714 - Scootle)
- Re-read and edit students' own and others' work using agreed criteria and explaining editing choices (ACELY1715 - Scootle)
- Use a range of software, including word processing programs, learning new functions as required to create texts (ACELY1717 - Scootle)

Science

Year 4

- Living things depend on each other and the environment to survive (ACSSU073 - Scootle)
- Natural and processed materials have a range of physical properties that can influence their use (ACSSU074 - Scootle)
- Science involves making predictions and describing patterns and relationships (ACSHE061 - Scootle)
- Science knowledge helps people to understand the effect of their actions (ACSHE062 - Scootle)
- With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSIS064 - Scootle)
- Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS071 - Scootle)

Year 5

- Living things have structural features and adaptations that help them to survive in their environment (ACSSU043 - Scootle)
- Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions(ACSHE081 - Scootle)
- Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083 - Scootle)
- Compare data with predictions and use as evidence in developing explanations (ACSIS218 - Scootle)
- Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS093 - Scootle)

Year 6

- Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions(ACSHE098 - Scootle)
- Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100 - Scootle)

Humanities and Social Sciences

Year 4

- Pose questions to investigate people, events, places and issues (ACHASSI073 - Scootle)
- Locate and collect information and data from different sources, including observations (ACHASSI074 - Scootle)
- Examine information to identify different points of view and distinguish facts from opinions (ACHASSI077 - Scootle)
- Interact with others with respect to share points of view (ACHASSI080 - Scootle)
- Reflect on learning to propose actions in response to an issue or challenge and consider possible effects of proposed actions (ACHASSI081 - Scootle)
- Present ideas, findings and conclusions in texts and modes that incorporate digital and non-digital representations and discipline-specific terms (ACHASSI082 - Scootle)
- The diversity of Australia's first peoples and the long and continuous connection of Aboriginal and Torres Strait Islander Peoples to Country/Place (land, sea, waterways and skies)(ACHASSK083 - Scootle)
- The custodial responsibility Aboriginal and Torres Strait Islander Peoples have for Country/Place, and how this influences views about sustainability (ACHASSK089 - Scootle)
- The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090 - Scootle)

Year 5

- Develop appropriate questions to guide an inquiry about people, events, developments, places, systems and challenges (ACHASSI094 - Scootle)
- Work in groups to generate responses to issues and challenges (ACHASSI102 - Scootle)
- Use criteria to make decisions and judgements and consider advantages and disadvantages of preferring one decision over others (ACHASSI103 - Scootle)
- Reflect on learning to propose personal and/or collective action in response to an issue or challenge, and predict the probable effects (ACHASSI104 - Scootle)
- Present ideas, findings, viewpoints and conclusions in a range of texts and modes that incorporate source materials, digital and non-digital representations and discipline-specific terms and conventions (ACHASSI105 - Scootle)
- The influence of people, including Aboriginal and Torres Strait Islander Peoples, on the environmental characteristics of Australian places (ACHASSK112 - Scootle)
- How people with shared beliefs and values work together to achieve a civic goal (ACHASSK118 - Scootle)
- The difference between needs and wants and why choices need to be made about how limited resources are used (ACHASSK119 - Scootle)
- Types of resources (natural, human, capital) and the ways societies use them to satisfy the needs and wants of present and future generations (ACHASSK120 - Scootle)

Year 6

- Develop appropriate questions to guide an inquiry about people, events, developments, places, systems and challenges (ACHASSI122 - Scootle)
- Locate and collect relevant information and data from primary sources and secondary sources (ACHASSI123 - Scootle)
- Examine different viewpoints on actions, events, issues and phenomena in the past and present (ACHASSI127 - Scootle)
- Evaluate evidence to draw conclusions (ACHASSI129 - Scootle)
- Work in groups to generate responses to issues and challenges (ACHASSI130 - Scootle)
- Use criteria to make decisions and judgements and consider advantages and disadvantages of preferring one decision over others (ACHASSI131 - Scootle)
- Reflect on learning to propose personal and/or collective action in response to an issue or challenge, and predict the probable effects (ACHASSI132 - Scootle)
- The obligations citizens may consider they have beyond their own national borders as active and informed global citizens (ACHASSK148 - Scootle)
- How the concept of opportunity cost involves choices about the alternative use of resources and the need to consider trade-offs (ACHASSK149 - Scootle)
- The effect that consumer and financial decisions can have on the individual, the broader community and the environment (ACHASSK150 - Scootle)
- The reasons businesses exist and the different ways they provide goods and services (ACHASSK151 - Scootle)

Design and Technology

Year 4

- Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010 - Scootle)
- Investigate food and fibre production and food technologies used in modern and traditional societies (ACTDEK012 - Scootle)
- Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013 - Scootle)
- Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP015 - Scootle)
- Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017 - Scootle)

Year 5 & Year 6

- Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use (ACTDEK019 - Scootle)
- Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy (ACTDEK021 - Scootle)
- Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (ACTDEK023 - Scootle)
- Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024 - Scootle)
- Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025 - Scootle)
- Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027 - Scootle)

Information and Communication Technology (ICT)

Students use and understand the Key Ideas for ICT capability in a range of lessons throughout this unit. Specifically, they will be required to use skills involving the ICT for investigating and ICT for creating learning continuums to research and prepare a presentation during their inquiry project.

Critical and Creative Thinking

Students will be practicing their critical and creative thinking skills throughout this unit in the following ways:

- Posing questions within the classroom and during the excursion
- Identifying and clarifying information and ideas with peers, teachers and specialists (e.g. fishers)
- Organising and processing information received from various sources - written, media, oral, experimentation.
- Imagining possibilities, considering alternative and seeking solutions when looking critically at the fishing industry, environmental impact, economic impact and future issues that may arise
- Reflecting on their work in a personal way, deciding what they did well and what could have been improved
- Drawing conclusions about gathered information and presenting an opinion in the form of an inquiry project

Sustainability

Students explore and inquire about sustainable practices throughout the entire unit. Sustainability is linked in all lessons and all subject areas, and covers the fundamental understandings and key ideas. This unit covers all areas of Systems, World Views and Futures when referring to sustainability in the fishing industry and students complete an inquiry project with a complete focus on sustainability and environment.

Ethical Understanding

Students will explore a range of ethical understandings related to fishing practices, human pollution and consumer impacts throughout this unit. The curriculum points covered are as follows:

- Recognise ethical concepts
- Explore ethical concepts in context
- Reason and make ethical decisions
- Consider consequences
- Consider points of view
- Explore rights and responsibilities
- Examine values

Personal and Social Capability

Students are constantly learning about themselves and others during this unit, with plenty of group interaction, personal reflection and questioning and considering of others. The main points in the curriculum covered are:

- Develop reflective practice
- Express emotions appropriately
- Appreciate diverse perspectives
- Contribute to civil society
- Understand relationships
- Communicate effectively
- Work collaboratively

LESSON PLANS

Lesson 1	Biology: Species of Fish, Molluscs and Crustacea and Their Adaptations	
Learning Intentions	I will understand that there are many different species of fish and seafood and that they can be identified by their physical features I will understand that certain species of fish and seafood have adaptations that help them to survive in their environment	
Tuning in	Look at the wide variety of fish and marine life together as a class and identify which ones you know/are most common using this **link** and the NSW Seafood Fact Sheet in Appendix 1.	
Lesson and Activities	10 Minute Partner Activity: In pairs choose two fish or seafood species from the list and create a Venn diagram (Appendix 2) of their physical features. Bring everyone back together and discuss a few of the differences and similarities for their chosen fish/seafood type. • Give a brief introduction of adaptations (info on adaptations **here**) • Ask students what adaptations they think fish and other seafood species might have to help them survive in their environment. Read about **fish adaptations** together as a class Add any new features to your Venn diagram that you may have missed.	Activity 2 - With partners Give students a fishing habitat and get them to research which animals live there and what adaptations they have to help them survive • Rocky and coral reefs • Rocky shores and rock pools • Rivers • Open ocean • Beaches and mudflats • Mangroves **Present** Choose one animal from your fishing habitat and talk about its adaptations and how they help it survive.
Standards Addressed	(ACELY1688 - Scootle) (ACELY1694 - Scootle) (ACELY1700 - Scootle) (ACELY1709 - Scootle) (ACELY1816 - Scootle) (ACSSU073 - Scootle) (ACSIS064 - Scootle) (ACSIS071 - Scootle) (ACSSU043 - Scootle) (ACSIS093 - Scootle)	

Lesson 2	Indigenous Fishing Pre-Colonisation	
Learning Intentions	I will understand the various tools and strategies used by Indigenous Australians when fishing (Pre-Colonisation) I will understand that Indigenous Australians have a special connection to the land and this naturally leads to sustainable practices	
Tuning in	Read some excerpts from **Article 1** and **Article 2**	
Lesson and Activities	Discuss the importance of Indigenous peoples' connection to oceans and rivers and their mantra of keeping the oceans and waterways sustainable. Read some excerpts from **Article 1** (in this example land also includes water) and **Article 2**. Watch the video in Article 1 entitled "Who We Are – Country/Place" View and read about **Aboriginal Fishing Methods** Discuss and view traditional Indigenous fishing methods and equipment. <u>Activity 1</u> Complete a 'Past Present Future' chart (Appendix 3 or students may make their own) Students are to complete the past section only at this point on Indigenous tools/weapons and methods of fishing.	<u>Activity 2</u> Write a diary entry of a 'day in the life' of an Aboriginal Fisher. Be sure to include information about what equipment/techniques you are using and why the land, ocean and rivers are so important to you.
Standards Addressed	(ACELY1666 - Scootle) (ACELY1789 - Scootle) (ACELY1676 - Scootle) (ACELY1687 - Scootle) (ACELY1688 - Scootle) (ACSSU073 - Scootle) (ACSHE062 - Scootle) (ACHASSK083 - Scootle) (ACHASSI073 - Scootle) (ACHASSI094 - Scootle) (ACHASSK112 - Scootle) (ACHASSK113 - Scootle) (ACHASSI122 - Scootle) (ACHASSI123 - Scootle) (ACHASSK140 - Scootle) (ACELY1694 - Scootle) (ACELY1704 - Scootle) (ACELY1714 - Scootle)	

Lesson 3	Humans, The Earth and Sustainable Fishing	
Learning Intentions	I will learn new vocabulary related to the fishing industry to further my understanding I will understand how the PFA and AFMA work together with fishers to ensure the sustainability of the seafood industry	
Tuning in	Watch **Tide to Table Program Overview** by OceanWatch Australia as a class and this short documentary about plastics in the ocean by **National Geographic** and briefly discuss what sorts of things are happening today that are impacting a healthy marine habitat.	
Lesson and Activities	Brainstorm together to make a list of the sorts of things that are impacting a healthy marine environment. Then brainstorm as a class what things you think the fishing and seafood industry are doing to interact with the environment. Do you think your views are true? If you think they are true (or false), how do you know that this is a fact based on evidence? Where did you get your information from to form this opinion? Hand out Fishing Glossary (Appendix 4) and introduce fishing and seafood terms and what each means. Add new vocabulary to glossaries. (Students continue to add to glossary throughout unit) <u>The Professional Fisherman's Association (PFA)</u> Visit the **PFA website** and discuss how fishers with the PFA are ensuring they contribute to healthy marine habitats and follow the law.	<u>The Australian Fisheries Management Authority (AFMA)</u> Read the AFMA pdf on Sustainable fishing (Appendix 5) Discuss briefly how laws are put in place and how they help protect the environment. <u>Group Discussion</u> In the groups from Activity 1, have students revisit their ideas for solving marine habitat issues and add any laws and rules they would create if they were in charge of governing the marine environment. Share with the class. <u>View and Reflect</u> Watch the following **videos** of just a few examples fishers are doing to ensure our marine habitats are healthy and sustainable. From what you have learned, have you changed your opinion from Activity 1?

		Reflect Students to write down 5 questions they would like to ask whilst on the excursion.
Standards Addressed	(ACELY1666 - Scootle) (ACELY1789 - Scootle) (ACELY1676 - Scootle) (ACELY1687 - Scootle) (ACELY1688 - Scootle) (ACSSU073 - Scootle) (ACSHE062 - Scootle) (ACHASSK083 - Scootle) (ACHASSI073 - Scootle) (ACHASSI094 - Scootle) (ACHASSK112 - Scootle) (ACHASSK113 - Scootle) (ACHASSI122 - Scootle) (ACHASSI123 - Scootle) (ACHASSK146 - Scootle) (ACHASSK148 - Scootle) (ACHASSK150 - Scootle) (ACHASSK151 - Scootle) (ACHASSK117 - Scootle) (ACHASSK118 - Scootle) (ACHASSK119 - Scootle) (ACHASSK120 - Scootle) (ACHASSK121 - Scootle)	

<table>
<tr><th>Lesson 4</th><th colspan="2">Excursion</th></tr>
<tr><td>Learning Intentions</td><td colspan="2">I will learn new vocabulary related to the fishing and seafood industry to further my understanding
I will understand how the Coffs Harbour Fishermen's Cooperative is a provider of sustainable seafood
I will understand the journey of fish and seafood from ocean to table
I will understand different types of fishing and the types of equipment used for each</td></tr>
<tr><td>Tuning in</td><td colspan="2">All talks/activities provided by the Coop will be the basis of these lessons and will be the 'tuning in'</td></tr>
<tr><td>Lesson and Activities</td><td><u>Resources required by students to bring:</u>
• Glossary of fishing terms sheet (Appendix 4)
• Questions written down to ask the Cooperative and the PFA
• AFMA Fisheries report handout (Appendix 6)
• Chain sequence handout (Appendix 7)
• Notebooks to sketch/write down information
• Pencils

<u>Activities/Information provided by the Coop and the PFA</u>

• Explanation of 'ocean to table' procedure (Students have a chain sequence worksheet provided that they can fill out with each step in the ocean to table process)
• Explanation of how NSW seafood is sustainable
• Tours/Viewing of boats and fishing equipment used (Students should sketch/write information about the equipment used as they will be comparing it to the past/explaining how the fishing technology has advanced)</td><td>• Show students the different species of fish, molluscs and crustacea that is fished in NSW (could do a quiz with the students or 'name the species' game)
• Sustainability should be the main focus - why is it so important to protect our marine habitats, why sustainable fishing helps to do this, why practices in some other countries such as overfishing are bad for the marine environment.
• Encourage students to ask questions where appropriate (they will have a list of questions)

The aim is to give students a 'hands on' experience with the equipment specifically - e.g. looking at and feeling/using nets, line, boating equipment (where safe of course)</td></tr>
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Standards Addressed	(ACELY1666 - Scootle) (ACELY1789 - Scootle) (ACELY1676 - Scootle) (ACELY1687 - Scootle) (ACELY1688 - Scootle) (ACSSU073 - Scootle) (ACSHE062 - Scootle) (ACHASSK083 - Scootle) (ACHASSI073 - Scootle) (ACHASSI094 - Scootle) (ACHASSK112 - Scootle) (ACHASSK113 - Scootle) (ACHASSI122 - Scootle) (ACHASSI123 - Scootle) (ACHASSK146 - Scootle) (ACHASSK148 - Scootle) (ACHASSK150 - Scootle) (ACHASSK151 - Scootle) (ACHASSK117 - Scootle) (ACHASSK118 - Scootle) (ACHASSK119 - Scootle) (ACHASSK120 - Scootle) (ACHASSK121 - Scootle)

Lesson 5	Advances in Fishing Technology + Reflection on Excursion	
Learning Intentions	I will compare the differences in fishing equipment between Indigenous Australian times and Post-Colonisation (current) I will understand how technological advances in fishing equipment have helped the environment and economy	
Tuning in	Reflection on Excursion - Look at photos and notes students have taken. Turn and Talk - 3 minute discussion on what you learned from the excursion	
Lesson and Activities	Activity 1 Write a reflection on the excursion and include: - Three things that surprised you - Three experiences you learned from - Three questions you still have Activity 2 Get students to take out all their notes, sketches, and worksheets on the fishing equipment from the excursion, as well as the 'Past, Present, Future' sheet from Lesson 1. Fill in the 'Present' section of the worksheet with the equipment seen at the Fishery excursion.	Activity 3 Divide students into two groups. Give the students 20 - 30 min to brainstorm as many ways fishers could help the marine environment even more (innovative thinking). Activity 4 Have students then brainstorm in smaller groups what the future of fishing equipment could look like to ensure sustainable and healthy marine environments continue well into the future. Have them draw/write down their ideas and designs in the 'Future' category of the worksheet. (These activities may need to be continued in another session due to time constraints)
Standards Addressed	(ACELY1666 - Scootle) (ACELY1789 - Scootle) (ACELY1676 - Scootle) (ACELY1687 - Scootle) (ACELY1688 - Scootle) (ACSSU073 - Scootle) (ACSHE062 - Scootle) (ACHASSK083 - Scootle) (ACHASSI073 - Scootle) (ACHASSI094 - Scootle) (ACHASSK112 - Scootle) (ACHASSK113 - Scootle) (ACHASSI122 - Scootle) (ACHASSI123 - Scootle) (ACHASSK146 - Scootle) (ACHASSK148 - Scootle) (ACHASSK150 - Scootle) (ACHASSK151 - Scootle) (ACHASSK117 - Scootle) (ACHASSK118 - Scootle) (ACHASSK119 - Scootle) (ACHASSK120 - Scootle) (ACHASSK121 - Scootle) (ACTDEK010 - Scootle) (ACTDEK019 - Scootle) (ACTDEP015 - Scootle) (ACTDEP025 - Scootle)	

Lesson 6	The Importance of Protecting Our Oceans (Part 1)
Learning Intentions	I will understand how plastic pollution is harming oceans, wildlife, humans and the fishing industry I will understand how we can help to protect the oceans through everyday choices
Tuning in	Watch the **video** on how much plastic is in the ocean
Lesson and Activities	Activity 1 - Thinking Skills Divide the class into 3 groups Group 1 - Black Hat Thinking How does plastic pollution in the ocean negatively affect the fishing industry? (E.g. Think about fish population, health of oceans, what that means for the economy and jobs in the future etc). Group 2 - Green Hat Thinking What are your suggestions for helping to reduce plastic use/stop plastic from getting into the ocean? (Very open to creative thinking!) Group 3 - Yellow Hat Thinking What are the ways the fishing industry would benefit from reduced plastic in our oceans? (E.g. Increased health of oceans and fish populations = healthier and bigger fish for fishers to catch, strong economy, job opportunities). Have students present their ideas to the class and allow for new ideas and constructive feedback.
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Lesson 7	The Importance of Protecting Our Oceans (Part 2)
Learning Intentions	I will use inquiry and research skills to explore a specific topic related to the NSW fishing industry and conservation of our oceans I will understand the importance of sustainable fishing the impact on environment, economy and society I will understand how we can help to save the oceans through everyday choices
Tuning in	View project brief on 'Healthy Ocean Habitats' Inquiry Project (Appendix 8)
Lesson and Activities	INQUIRY PROJECT Students are to choose an inquiry project from the list provided in the project brief (Appendix 8) They must work in pairs (or a group of 3 if uneven numbers) At the conclusion of the project (suggest giving them 2-3 weeks worth of lessons to complete this) they must present to the class and complete a self-assessment sheet (Appendix 9).
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APPENDIX 1

New South Wales Seafood Fact Sheet

AUSTRALIA'S PREMIUM

SEAFOOD

CAUGHT WITH CARE FROM NEW SOUTH WALES


Santa Rocco
SANTO ROCCO
DI BAGNARA

Our seafood is harvested by the skilled fishers of New South Wales, Australia.


LFB 13615

Beautiful & Wild

New South Wales is the perfect habitat for many seafood species. It's glistening lakes, rivers, estuaries and deep blue ocean all teem with life.

Sydney, Newcastle, Coffs Harbour and other towns in New South Wales are home to some of Australia's most picturesque fishing harbours. Our fishers have a passion for what they do. They have a strong connection to nature and fiercely protect their unique waterways.

New South Wales is the home of the world-famous Sydney Fish Market, a popular stop for locals and tourists alike.

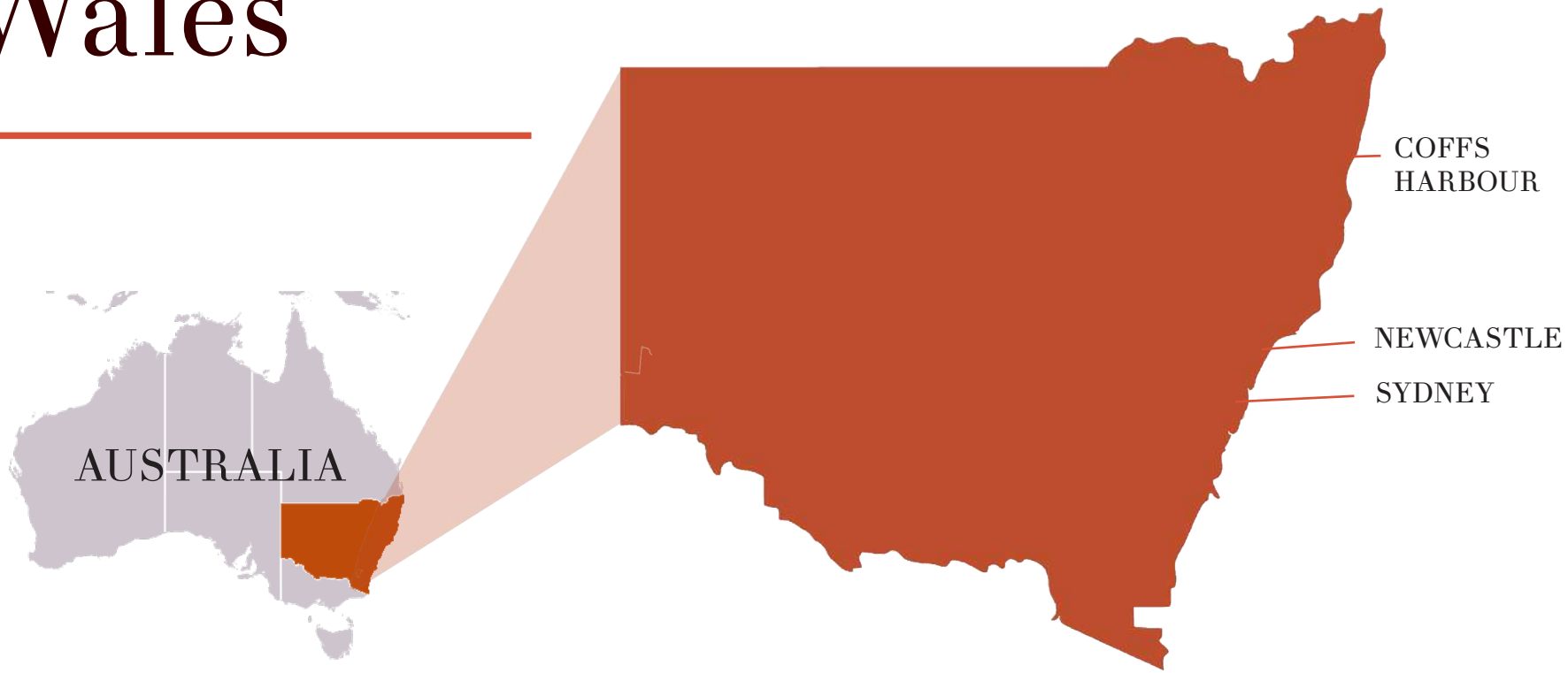
Commercial Fishermen's Co-Operative

COFFS HARBOUR FISHERMEN'S COOP

SYDNEY FISH MARKET

PFA PROFESSIONAL FISHERMEN'S ASSOCIATION

Caught in New South Wales



NSW Seafood Partners

The **Professional Fishermen's Association** represents commercial fishers from across New South Wales, from the Tweed River to Eden. The organisation is focused on representing the interests of its members and achieving a constructive role to increase the overall economic and ecological sustainability of wild harvest commercial fishers of NSW.

Find out more: **www.nswpfa.com.au**

The **Coffs Harbour Fishermen's Co-operative** has been operating on the foreshores of Coffs Harbour since the early 1950s. It is owned by about 50 local fishermen who supply fresh seafood every day.

Find out more: **www.coffsfishcoop.com.au**

Formed in 1945, the **Commercial Fishermen's Coop** is headquartered in Newcastle, with 130 fishers supplying seafood. The Cooperative also has a processing facility enabling them to produce a variety of products to suit customer demand.

Find out more: **www.fishcoop.com.au**

Sydney Fish Market, known as 'Australia's Home of Seafood', is the largest market of its kind in the Southern Hemisphere with more than 500 species traded annually. Sydney Fish Market has been the flagship commercial and retail venue for the NSW fishing industry for over 70 years. In Australia alone, more than 300 fishing communities contribute to supplying SFM's weekday auction. Sydney Fish Market trades more than 13,500 tonnes of seafood annually. Sydney Fish Market is also one of Australia's most popular tourism destinations. Onsite SFM has six seafood retailers and a range of specialty food stores, restaurants and cafés.

Find out more: **www.sydneyfishmarket.com.au**

Our Range of Wild Caught Seafood

NSW has a variety of seasonally available seafood. Here is a sample of the wide range we have to offer. For more information about the species and formats available, please contact **eo@pfai.com.au**

Long fin Eel

Anguilla reinhardtii

Blue Mackerel

Scomber australasicus

Octopus

Octopodidae

Our Range of Wild Caught Seafood

Ocean Jacket

Nelusetta ayraud

Mullet

Mugil cephalus

Eastern School Whiting

Sillago flindersi

Our Range of Wild Caught Seafood

Silver Trevally

Pseudocaranx georgianus

Australian Salmon

Arripis trutta; Arripis truttace

Pipi

Donax deltoides

Our Range of Wild Caught Seafood

Luderick *Girella tricuspidata*

Royal Red Prawn *Haliporoides sibogae*

Yellowtail scad *Trachurus novaezelandiae*

Ribbonfish *Trichiuridae*

Shovelnose Ray Ray *Aptychotrema rostrata*

Tiger flathead *Platycephalus richardsoni*

For more information about our range of seafood and product forms, please contact us **eo@pfai.com.au**

our passion

TO YOUR PLATE

Our Guarantee

The waters of New South Wales are clean and biologically diverse. Australian fisheries are internationally recognised as some of the best managed in the world.

The Australian Government ensures this reputation through legislation, including the EPBC (Environment Protection and Biodiversity Conservation Act) and strict environmental management at the NSW State Government level.

Many of our fishers are 5th generation fishermen, whose families have lived and worked on our waters all their lives. Skills and knowledge are passed down through generations.

We have a long and proud history of harvesting seafood from New South Wales' waters. Our commercial fishers are accredited OceanWatch Master Fishermen, trained to ensure the fish are caught sustainably with care.

Commercial Fishermen's Co-Operative

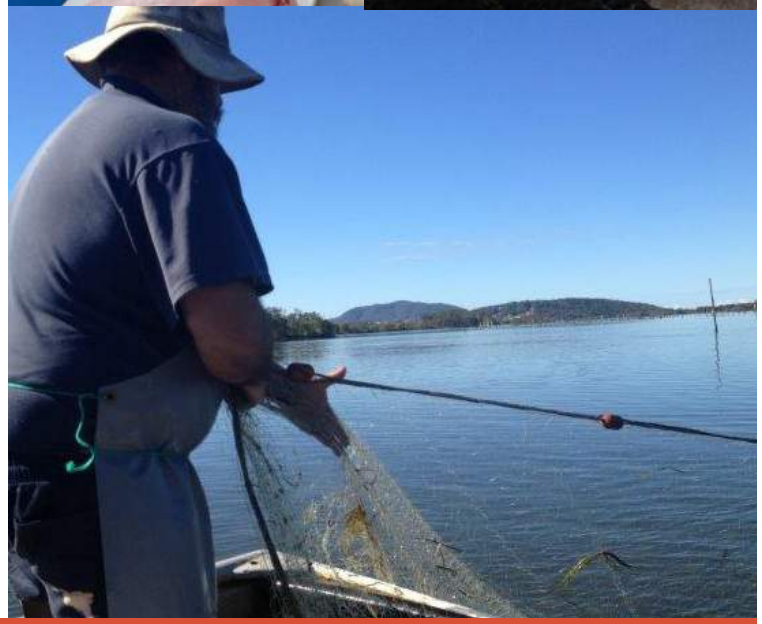
COFFS HARBOUR FISHERMEN'S CO-OP

SYDNEY FISH MARKET

PFA PROFESSIONAL FISHERMEN'S ASSOCIATION

OCEANWATCH AUSTRALIA

Healthy and safe



We go to great lengths to guarantee the high quality and safety of all our products. Consumers all over the world can be confident that when they eat our seafood, it is healthy and safe.

Our seafood complies with the national food safety standards set out by FSANZ (Food Standards Australia New Zealand). Our Seafood Exporters must be licenced to export. They have a comprehensive export compliance and management system, are regulated under the Export Control Regulations (1982), and have an approved HACCP (Hazards Analysis and Critical Control Point system).

Our products leave Australia with a health certificate issued by the Australian Government that attests to its safety and certifies that it meets the food safety standards requirements of Australia and the importing country.

For further information

email: eo@pfai.com.au

Commercial Fishermen's Co-Operative

COFFS HARBOUR FISHERMEN'S COOP

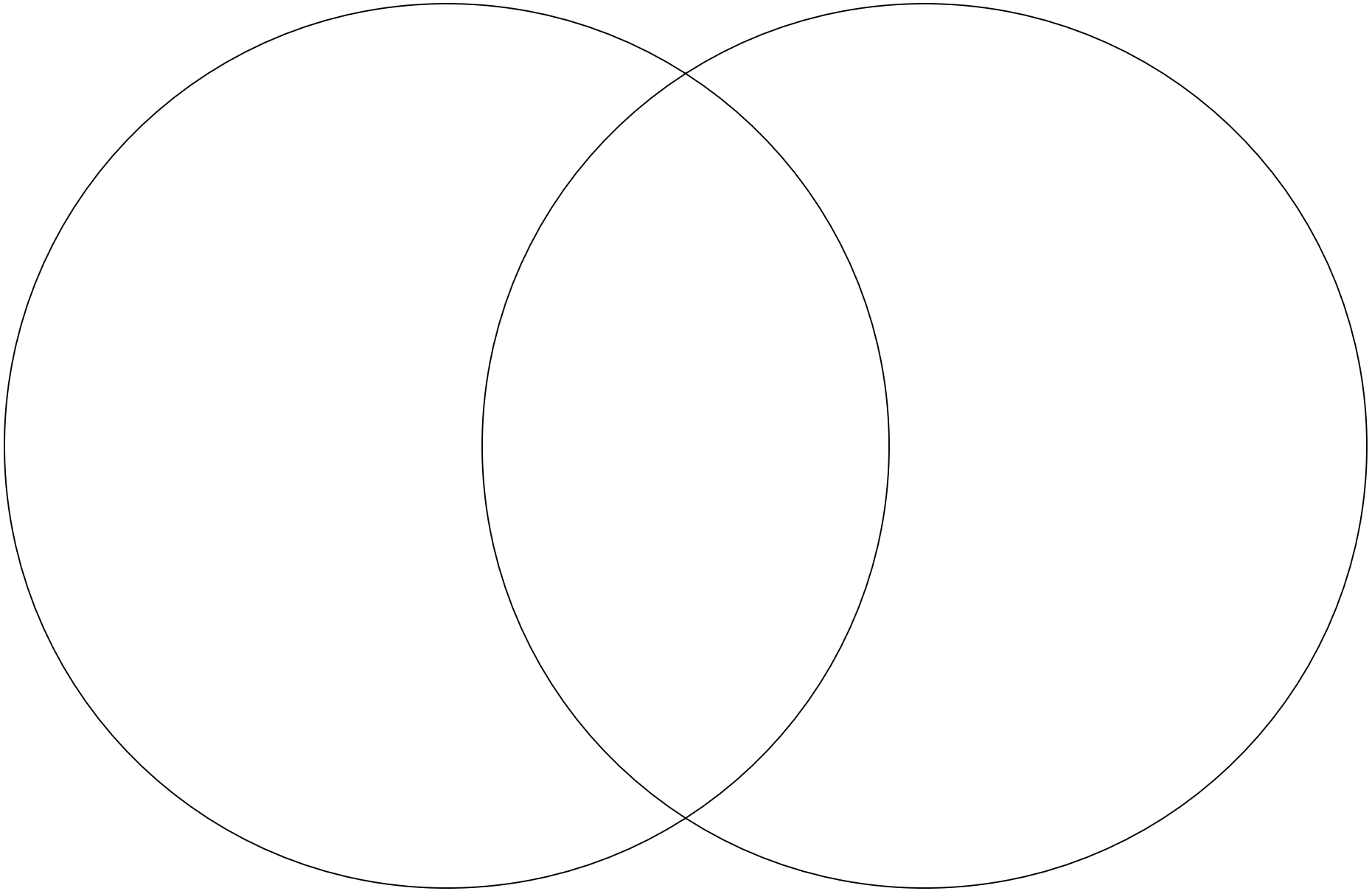
SYDNEY FISH MARKET

PFA PROFESSIONAL FISHERMEN'S ASSOCIATION

APPENDIX 2

Venn Diagram

Venn Diagram Graphic Organizer



APPENDIX 3

Past, Present and Future Chart

PAST

PRESENT

FUTURE

APPENDIX 4

Fisheries Glossary Chart

Fishing Glossary

WORD	MEANING
Aquaculture	Growing and harvesting aquatic life (e.g. fish, shellfish) especially for food. Also known as a 'fish farm'
Biodiversity	The number and variety of organisms (wildlife) found in a specific area
Commercial Fisher	A person who has a special license to fish to then sell
Ecosystem	A community of living things and the environment in which they live
Global Warming	The increase in temperature of the Earth's near-surface air and oceans
Marine Protected Area	Areas of marine environments given extra protection through government rules and laws
Overfishing	When fish are being fished at a rate that is unsustainable as set by a Marine Fisheries Service or Government department
Trawling	Fishing by pulling a large, cone-shaped net through the sea at a deep level behind a special boat in order to catch fish

APPENDIX 5

Australian Fisheries Management Authority Sustainability Fact Sheet

Contributor

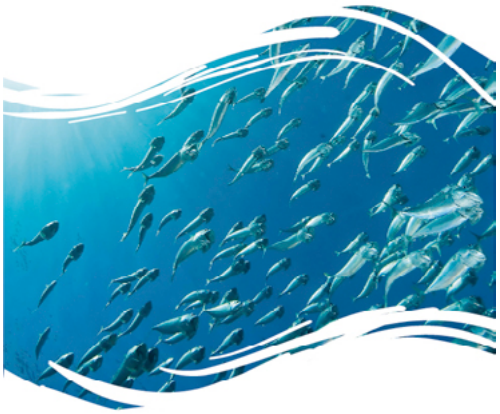
Australian Government
Australian Fisheries Management Authority
www.afma.gov.au

Protecting Our Fishing Future

Protecting Our Fishing Future

Sustainability and the environment

The Australian Fisheries Management Authority *(AFMA)* protects and manages our fisheries so that the Australian people can continue to have a safe, secure and sustainable source of healthy seafood and a profitable fishing industry that supports Australian communities.



AFMA is committed to the conservation of marine ecosystems and biodiversity by promoting the sustainable use of our fisheries resources.

How does AFMA make sure fish stocks are maintained?

One of AFMA's most important jobs is to make sure that the number of fish in fisheries is maintained and sustainable. They do this by:

- working with scientists and the fishing industry to set catch quotas *(number limits)* that allow fish stocks to be maintained
- developing policies and practices that make sure the marine environment, including wildlife, is looked after
- seeking advice from conservation, commercial and recreational fishing and marine science experts to create plans and systems to protect the marine environment.

All of these actions help to ensure that Australia's fisheries are well-managed. This means that consumers can be sure that the seafood they buy comes from a sustainable and environmentally friendly source.

Does Australia have healthy fish stocks?

Yes we do, because Australian fisheries are managed under strict rules. These rules reduce the environmental impacts of fishing and make sure that stocks will remain strong into the future.

Information collected by AFMA tells us that every year the number of fish stocks that are listed as 'overfished' or 'subject to overfishing' is decreasing. This is good news because it means that AFMA can increase the quota *(number limits)* in some fisheries, making healthy, sustainable seafood available for Australians.

Contributor

Australian Government
Australian Fisheries Management Authority
www.afma.gov.au

Protecting Our Fishing Future

Protecting Our Fishing Future

How does AFMA help the marine environment?

AFMA has an environment section that responds to environmental issues.

It helps to make sure that AFMA's environmental management approaches are among the best in the world. Two of the most important environmental programs are the 'Bycatch Program' and the 'Discard Program'. These help each fishery to develop a plan that focuses on reducing bycatch and caring for threatened, endangered and protected species.

Is there anything I can do to help?

You can support Australia's sustainable seafood industry by buying Australian seafood at your local fish shop or supermarket.

If you would like to find out more about what AFMA is doing to protect Australia's fishing future, check out their website www.afma.gov.au

APPENDIX 6

Fisheries Report

Contributor

Australian Government
Australian Fisheries Management Authority
www.afma.gov.au

Protecting Our Fishing Future

Protecting Our Fishing Future

Fisheries report

Name: _____

Visit the AFMA website *(www.afma.gov.au)* and select one fishery operation from the 'Fisheries' section. Fill in the information about that fishery in the table below.

Name of fishery	
Where is it located?	
How long has it been operating?	
What type of seafood does it catch?	
What fishing method/s does it use?	
Who is the catch supplied to *(e.g. is it exported or just sold in Australia)*?	
What other information can you find out about this operation?	

FOR TEACHERS for students

Published on
www.forteachersforstudents.com.au
Australian Education Resources

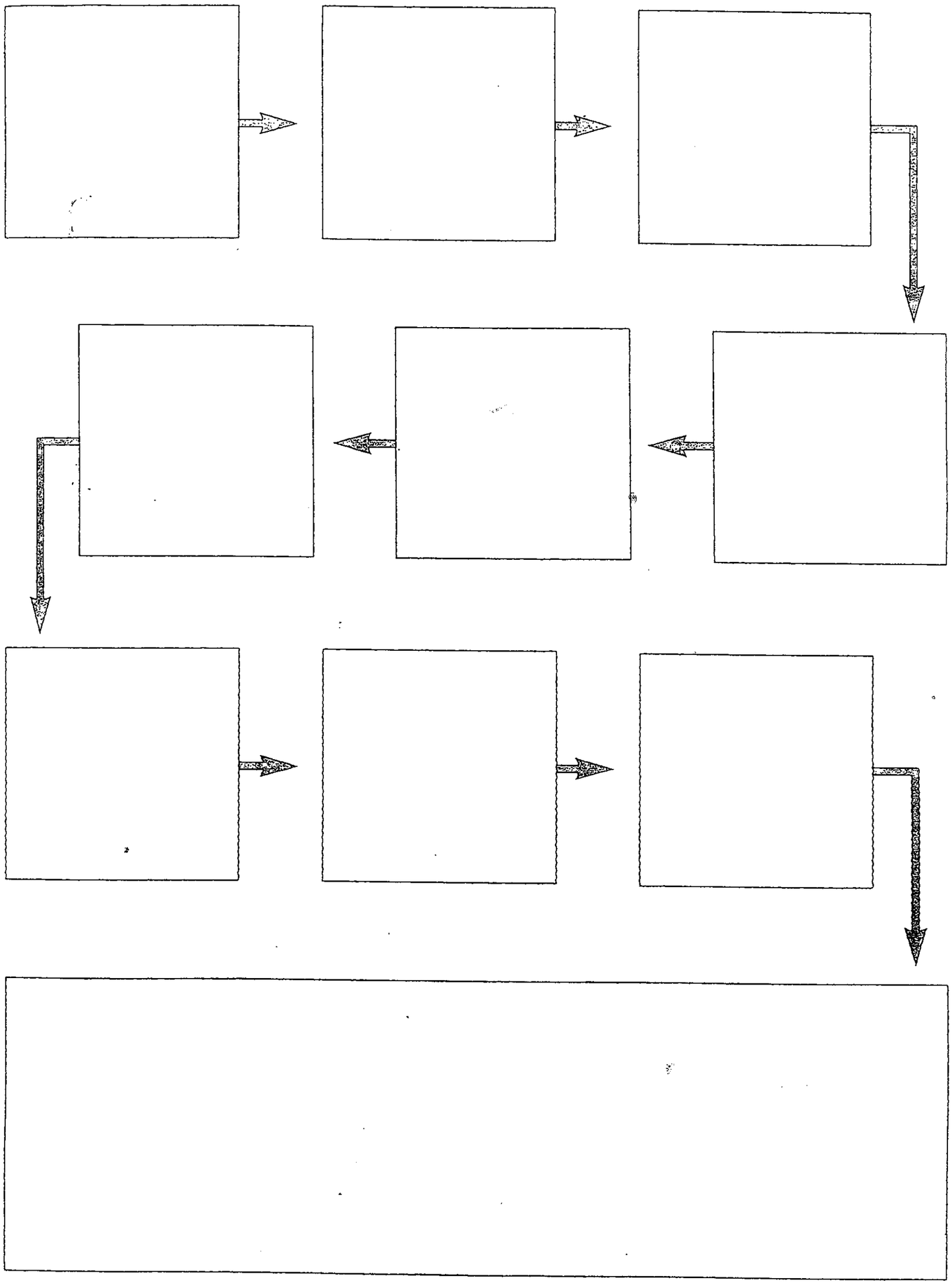
☐ Lower Primary ☑ Primary ☑ Middle Years

APPENDIX 7

Chain Sequence Handout

Name _____ Date _____

A Chain Sequence



APPENDIX 8

Inquiry Project Brief

Healthy Ocean Habitats

You have been chosen to conduct a research project of the highest importance. Choose one of the three topics listed below and demonstrate how you have used your own research and credible facts and sources in your research project!

TOPIC 1

Australia's Sustainable Fishing Industry

TOPIC 2

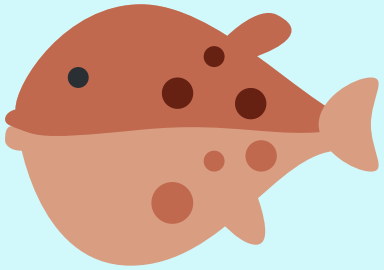
How To Protect Our Oceans

TOPIC 3

The Differences in Fishing From Past to Present

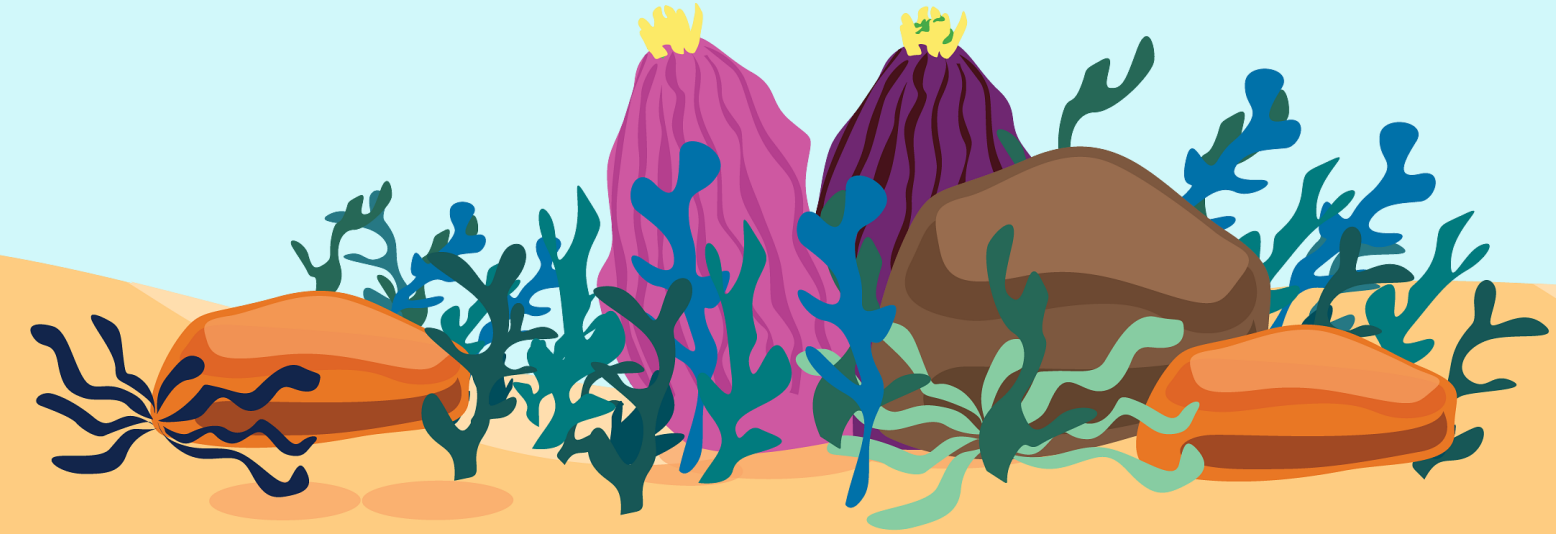
Your presentation must include:

- Information about Australia's fishing industry
- The relationship/impact between humans and the ocean
- Ways we can help the ocean
- Your use of credible sources of facts



You may choose how you wish to present your findings (for example PowerPoint, Poster, Newspaper Article etc.)

Make sure you put everything into your own words, and good luck!



APPENDIX 9

Self-Assessment Sheet

HEALTHY OCEAN HABITATS GROUP PRESENTATION
SELF ASSESSMENT

NAME:

	I Could Have Done Better	I Did An Acceptable Job	I Did A Really Good Job	I Did AMAZING At This Task
Spoke confidently and clearly	**1**	**2**	**3**	**4**
Used great information (written in own words)	**1**	**2**	**3**	**4**
Used interesting pictures	**1**	**2**	**3**	**4**
Included all information needed	**1**	**2**	**3**	**4**
Worked well in a team setting	**1**	**2**	**3**	**4**

Extra comments about my presentation:

OTHER USEFUL RESOURCES

Other Useful Online Teaching Resources

Fisheries Research and Development Corporation

http://www.frdc.com.au/en/Media-and-Publications/Educational-Materials/Stuff-for-Kids-and-Schools

http://www.frdc.com.au/en/Media-and-Publications/Educational-Materials/Stock-Assessment-Modelling-Videos

OceanWatch

http://www.oceanwatch.org.au/community/

https://masterfishermen.oceanwatch.org.au/

PrimeZone

http://www.frdc.com.au/en/Media-and-Publications/Educational-Materials/Primezone

(use search terms such as fishing, seafood, environment to locate resources)

Seafood and Health

https://superseafood.com.au/

https://www.seafoodcrc.com/resources/kidzone.html

Careers in Seafood

http://www.alife.net.au/a/profile/search

Merchandise

https://www.mfma.com.au/merchandise/seafood-posters/