



Marine Reader Series

Food from the Sea



Bob Moffatt
Kym McKauge

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www.wetpaper.com.au



ISBN 978-1-86283-217-6
(EPub) January 2025

National Library of Australia HARD COPY Cataloguing-in-Publication data

Moffatt, Bob.
Food from the Sea.
ISBN 1 86283 064 9 (bk. 14).

1. Readers (Primary) - Seafood. 2. Seafood - Juvenile literature.
I McKauge, Kym. II. Title. (Series: Kids and Water; bk. 14).

428.6

Marine reader series creators: Bob Moffatt and Jim Grant.
Printing: Heaneys Performers in Print, Gold Coast, Australia.
Editing: Rosemary Lancaster, Paula Moffatt and Barbara McKenzie.
Cover: Trent Moffatt Designs.

Reviewers: Graham Anderton, Annaliese Caston, Christine Cougan, Jeremy Currie, Taffy Evans, Ralph James, Barbara Jensen, Jim Kneale, Steve Langlands, Kym McKauge, Steve Parsons, Anna Redlich, Nigel Ridgway and Stephanie Smith.

Illustrations: Wet Paper, Rose Bedford.

Acknowledgements:

The Moffatt Group Australia Pty Ltd, ACN 086 521 084, is grateful to the following for permission to reproduce photographic material:

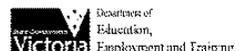
Victorian Markets - Cover - Department of Primary Industries, Queensland Fisheries Service 3, 5 (bottom), 6, 7, 8, 9 (top), 10 (bottom), 11 (top), 12; Mike Sudgen 5 (top); Neville Coleman 10 (top), 11 (bottom); Viewfinder Australia Photo Library (Gold Coast) 1, 2, 10 (middle), 9 (bottom); Bob Moffatt 4, 13 (bottom), Wet Paper 14; Tassal 13 (top); Centre for Research into introduced pests (CRIMP) 15.

This publication was supported by grants from Queensland Transport, NSW WaterWays, Australian Maritime Safety Authority, Marine Board Victoria, South Australia Transport, Western Australian Transport, Marine and Safety Tasmania, Northern Territory Transport and Queensland Government State Development.

The Gould League is supported by staff and other resources supplied by Department of Education, Employment and Training, State Government, Victoria.

Gould League: Genoa St, Moorabbin, Vic, 3189. Telephone: (03) 9532 0909 Fax: (03) 9532 2860. www.gould.edu.au

The Kids and Water Project was printed and published in Australia.





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Fishing lines

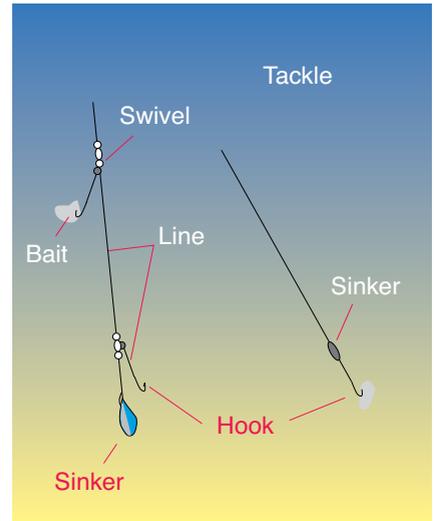
For hundreds of years, people have used fishing lines made from natural fibres to catch fish. Today, fishers use lines made from nylon. They wind them onto a metal or plastic reel.

On the end of the line is a hook. This holds the bait. Near the hook is a sinker — a weight that takes the hook down into the sea. Sometimes there is also a swivel, to stop the line from getting tangled.

Some baits are alive, some are dead, and some are artificial. Worms are an example of live bait, and squid is often used as dead bait. A lure is an artificial bait.

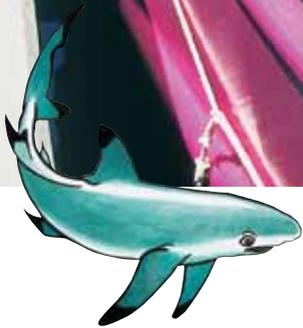
Both amateur and professional fishers use lines to catch fish.

These people are using fishing rods and lines. At the end of each line is a hook with bait.



A sinker helps to keep the bait down to where the fish are most likely to eat it.





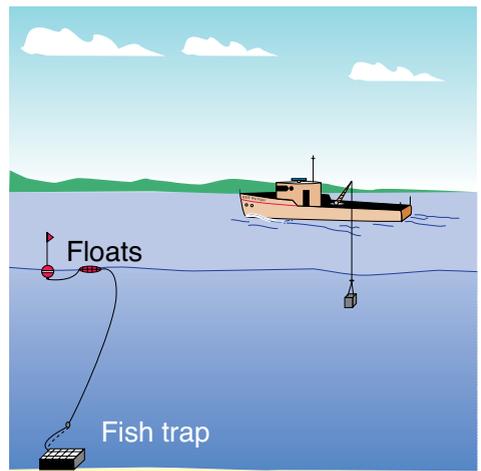
These are pots made of bamboo and wire. What type of sea creature do you think they would catch and how?

Fish traps and pots

Fishers use special kinds of fish traps and pots to catch particular types of sea creatures.

These lobster pots are made of bamboo and wire.

Aboriginal people used fish traps, pots and spears to catch fish. Sometimes they used natural poisons to stun the fish in a waterhole so that they could catch them easily.



Nets

In Australia, most fish we eat is caught in nets. Some nets, like the fyke net in the picture below, are used as traps.

Most nets are made from strong nylon line woven into a mesh (also called netting). Nets with a fine mesh catch small fish. A large mesh is used to catch large fish.

The net catches the fish by tangling them in the mesh or by surrounding them so that they cannot escape.

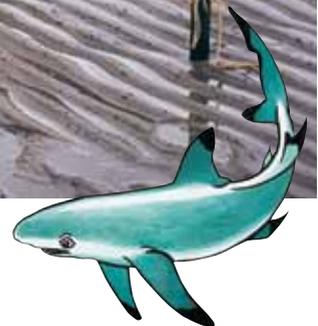
To catch a fish, the net must have a mesh size that is smaller than the fish.



To catch a fish, the mesh size must be smaller than the fish.

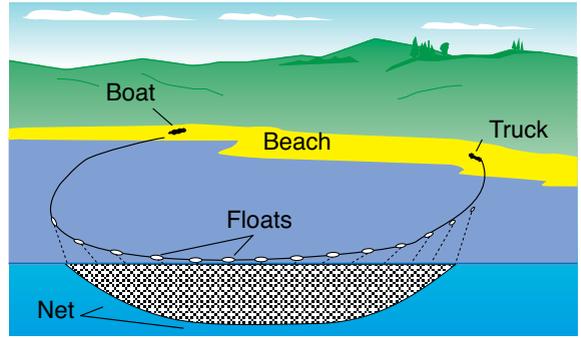


This is a fyke net. How do you think it will catch fish?



Some types of nets

- A cast net is a small net used to catch fish. The fisher throws it out from the shore. Small fish are caught in the mesh and are sometimes used as bait to catch bigger fish.
- A beach seine is dragged out into the water by a boat, then pulled back towards the beach.

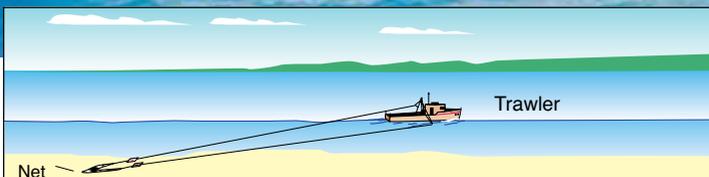


Cast net

There are other types of nets used on trawlers, and in rivers and estuaries.

The prawn trawler, shown in the picture below, drags its net along the bottom of the ocean for prawns.

Otter boards are used to keep the net open as it drags the bottom of the ocean for prawns and other marine life.



Trawler nets and otter boards

Shellfish

A shellfish is a sea creature that has a hard shell covering its body. Prawns, crabs and oysters are examples of shellfish.

Prawns

Adult prawns live on the seabed (the bottom of the sea). They are caught from special fishing boats called prawn trawlers. The trawler lowers its nets and pulls them behind the boat. Then the net, with its catch of prawns, is hoisted back on board. The catch is sorted on a big tray at the back of the boat.

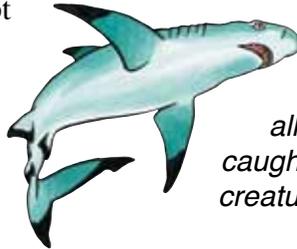
The prawns in the picture below are live.

Some prawns are cooked on board the trawler. Others are kept 'green' (raw) for sale.

Prawns turn red when they are cooked.



Sorting tray



This is a sorting tray. It contains all the sea creatures that have been caught in a trawling net. What types of sea creatures can you see?



Live prawns

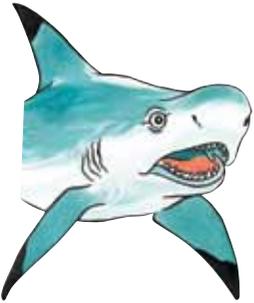
Oysters and crabs

Shellfish include molluscs such as oysters, mussels and abalone, and crustaceans such as prawns, crabs and lobsters. Abalone are single-shelled molluscs. Divers collect them in southern parts of Australia and export them to Asia.

Oysters are called bivalves. This means that they have two shells. People split their strong shells apart with a knife and eat the animal inside.



Oysters



How do you think the spanner crab got its name?

Oysters belong to which group of animals?



Live spanner crabs are red



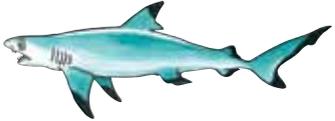
Mud crab

Crabs

Most of the crabs we eat, such as blue swimmer crabs and spanner crabs, are caught on sandy seabeds. Mud crabs are caught in estuaries where mangrove trees grow.

Traps or pots are used to catch most crabs. A tasty morsel of food is placed in the pot to lure the crabs in. Once a crab is in the pot, it is trapped and cannot get out.

Where does this mud crab live?





Gummy shark

Sharks and other fish

Sharks

Small sharks, such as gummy sharks and school sharks, are caught with nets and lines in southern Australia. When fish shops sell shark meat they call it flake. It is good to eat because it has no bones or scales. Australians eat thousands of sharks every year. There are many stories about sharks eating people, but shark attacks are rare.

Did you know that some sharks are protected species? For example, the great white shark is protected.

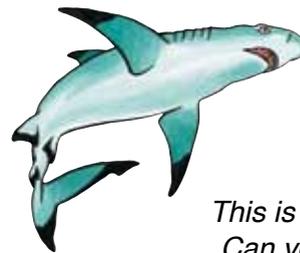
Fish

The creatures that we call 'fish' are called 'finfish' in the fishing industry. Most of the seafood we eat from the waters around Australia is finfish.

Scientists and farmers are breeding and growing many kinds of shellfish and finfish in special farms, so that we will have plenty of fish for the future. This is called aquaculture.



These fish are in a fish shop ready for sale. How can you tell?



*This is a finfish.
Can you find five types of fins?
Can you see the operculum and lateral line?*



Some popular finfish

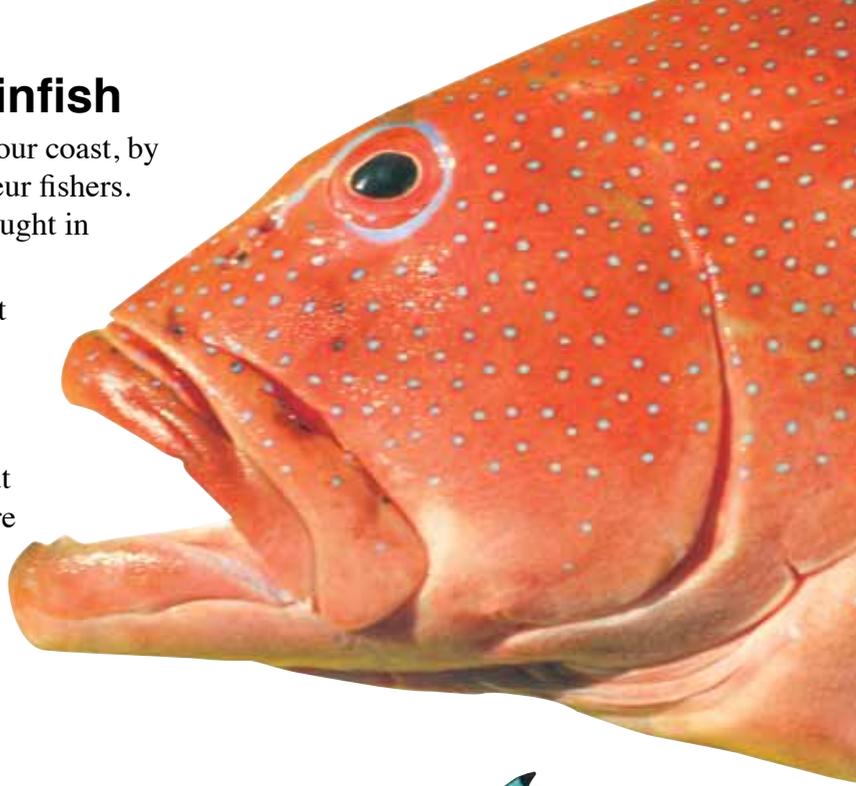
Whiting are caught around our coast, by both professional and amateur fishers.

King George whiting are caught in the south — delicious!

Coral trout live on the Great Barrier Reef.

In many places they are protected.

In other countries coral trout have been overfished and are now rare.



This is a coral trout – a tropical fish. Why is it so brightly coloured?



This is a King George Whiting



Water birds

Estuaries and inlets

Estuaries and inlets are areas between the sea and the land. Many animals and plants grow in these sheltered places. They are sometimes called buffer zones.

Estuaries and inlets are important breeding grounds or nursery areas for the sea creatures we use for food. A female fish may lay millions of eggs in the water of an inlet.

These eggs quickly hatch into baby fish, called fry. The fry then grow into fingerlings. These hide between the roots of trees and among sea plants such as seagrass.

Without these sheltered places, we would have no fish.

What is a breeding ground?

What is a fingerling?

What is a fry?

Why are estuaries considered important breeding grounds?



Fingerlings

Mariculture

Mariculture is a special kind of aquaculture. It means farming fish in the sea.

Baby fish grow in tanks.

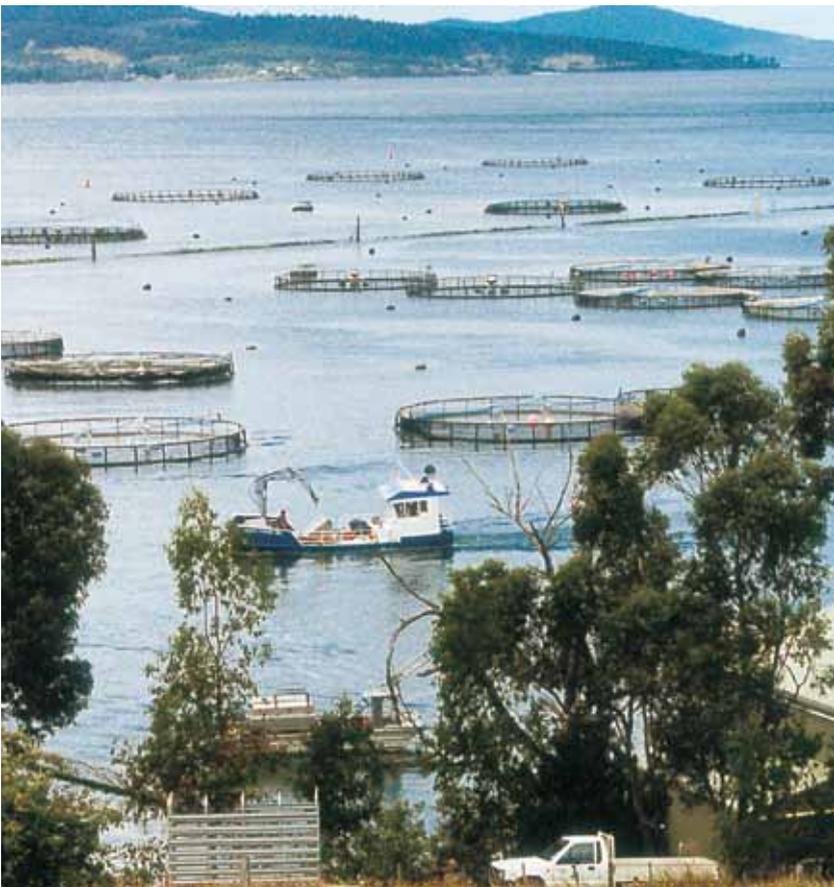
When they are big enough they are released into ponds or enclosures.

In Tasmania, salmon are grown in large ponds that are anchored offshore.

When the fish are the right size they are removed from the pond and cooled very quickly to keep them fresh.



Tasmanian salmon ready to market overseas



How many fish ponds are there in this picture?



These salmon ponds in Tasmania hold about 8000 fish each

Management: fish for the future

Many families rely on healthy fisheries for their livelihood. Looking after our fisheries is very important if we want to have fish for the future. There are some rules that fishers need to follow, to protect the fisheries.

Size limits for fish

A minimum size is the smallest size of fish that may be kept when it is caught. It means that the animal will have produced offspring at least once before it is caught.

There are other reasons why size is important. For example, the barramundi changes from male to female when it grows to a certain size.

Quotas

A quota is a maximum number of animals that may be kept from a catch. This means that enough will be left to breed and grow.

Closed seasons

A closed season is a time of the year (usually the breeding season) when no fishing is allowed. This gives the animals a rest from being caught and allows them time to breed.

Closed waters

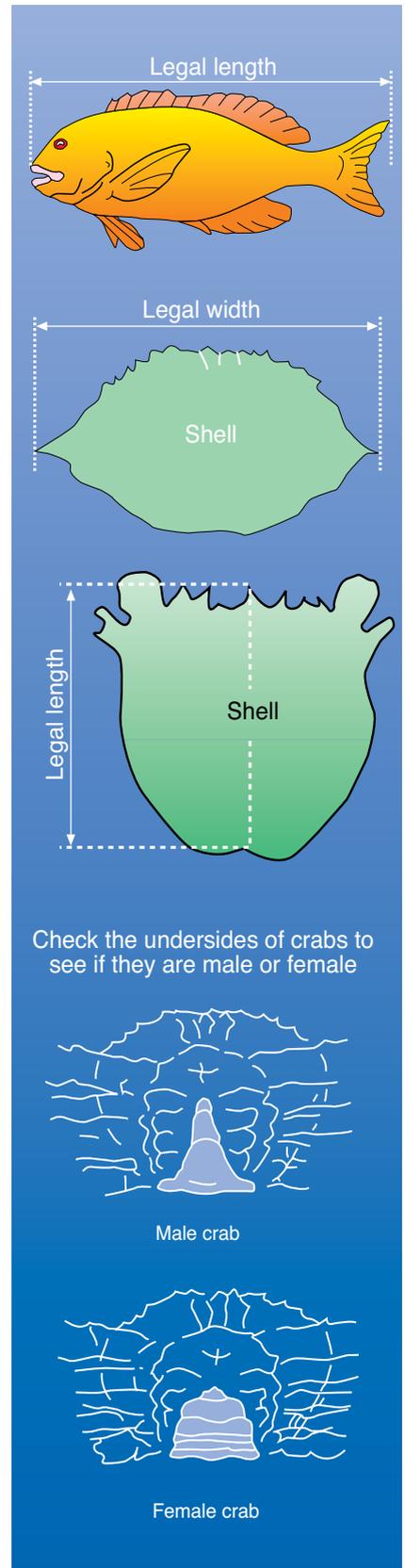
Fisheries managers sometimes close entire sections of rivers, or areas of the sea, so that the animals in those areas can live and breed without being disturbed.

Gear restrictions

Gear restrictions are used so that the animals have a 'fair go'. Examples include restricting the numbers of hooks on a line, or restricting the numbers of traps that can be used at any one time.

Fishcare

Many States in Australia run a Fishcare program, where volunteers can help by educating people about fishing rules, habitat and fisheries.



Marine pests

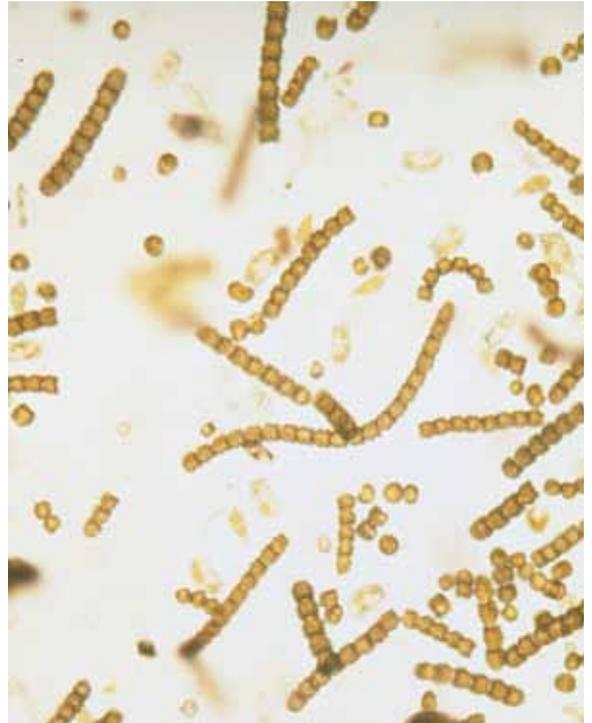
Marine pests can threaten our fisheries, just as rabbits and other pests are a threat on land.

The tiny algae shown in the photograph on the right were accidentally brought into Tasmania on ships. The algae grow quickly inside local mussels and oysters and produce a poison, or toxin. This toxin affects other animals when they eat the shellfish.

Northern Pacific sea stars, shown in the photograph below, are marine pests that came to Tasmania and Victoria from Japan.

Pests that damage just one type of sea creature will affect many others as well. This is because each creature depends on others for its food.

Pests also affect us, because there will be less seafood for us to eat in the future.



These tiny microscopic algae are an introduced pest

Why do pests that damage one type of sea creature affect many others as well?



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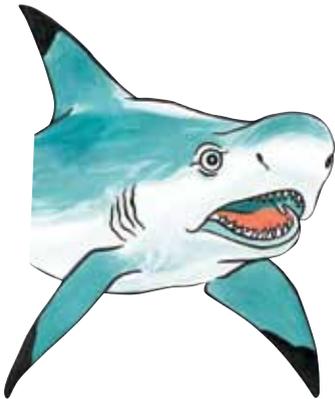
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