

Teacher's glossary (for children's glossary see www.fishandkids.org)

Artisanal fishing – See page 10. Can be commercial or subsistence. Characteristics include using a small amount of energy and capital, staying close to shore and supplying local markets.

Aquaculture – See Fish farming.

Boycott – Refuse to deal with a person, business, group or nation so as to punish or show disapproval.

Bycatch – Marine creatures caught when fishing for other types of creatures. Sometimes this catch is used or sold but often it is thrown overboard dead or dying.

Commercially extinct – When fish stocks are too low to make fishing commercially viable, often due to prolonged overfishing.

Commercial fishing – Any fishing that takes place with the intention of making money for the fishers.

Commercial fish stocks – See Fish stock.

Consumer power – Consumer power is when people exert influence on shops or markets by choosing or demanding products because of a certain quality such as minimised environmental or social impacts. Collective opinion often has a stronger influence than individual opinion.

Coral polyps – Sea animals which can vary in size from a pinhead to a foot long. They excrete hard exo-skeletons which accumulate over time to create coral reefs. They have a symbiotic relationship with algae which live inside the polyp. The algae give the coral its colour.

Depleted fish stocks – Fish stocks at a historically low level probably due to overfishing.

Eco-label – See page 22. An eco-label provides environmental information on the production of a product that has been independently tested. Some labels give environmental information on other aspects of a product, like whether it is energy efficient or can be recycled.

Ecosystem – All plants and animals inhabiting an environment and interacting with each other.

Fish – Fish are vertebrate animals (they have back bones), and cold blood and live underwater. They breathe using gills and are usually streamlined and muscular.

Fishery – A unit determined by an authority or other entity that is engaged in raising and/or harvesting fish. Typically, the unit is defined in terms of some or all of the following: people involved, species or type of fish, area of water or seabed, method of fishing, class of boats and purpose of the activities.

Fish farming – Commercial rearing of fish in man-made tanks on land or cages in open water, usually for food.

Fishing – See page 10.

Fish stock – A term used for a group of individual fish of one species that live in a well defined area of the ocean independently of other groups of the same species. Some fish stocks are targeted by fishers for commercial reasons.

Food chain – The path that energy takes as it passes from the sun to producers to consumers (from plants to herbivores to carnivores to decomposers).

Food web – Linked food chains.

Fully exploited – fish stocks that are being caught at their maximum biological capacity. 52% of the world's fish stocks are fully exploited. Only 3% are underexploited.

Habitat – The place where a creature normally lives.

Industrial fishing – See page 10.

Invertebrates – Any cold-blooded animal without a spinal column e.g. squid, lobster, barnacle, mussel, sponges, corals, butterflies, periwinkle, starfish.

Lobbying – Where people try to influence decision makers like governments or business to support a cause. An example is a member of the public writing a letter to the government to ask for change to fishing laws so that it is more difficult to overfish.

Marine Protected Area – An area designated to protect marine ecosystems, processes, habitats, and species, which can contribute to the restoration and replenishment of resources for social, economic, and cultural enrichment.

MSC standard for sustainable fishing – The MSC has set a standard made up of a set of principles and criteria. Fisheries are measured against this standard by independent third parties. If they pass the fishery proves they are maintaining or improving fish stocks, looking after the whole ecosystem where they fish and that they manage their fishing sustainably.

Mammal – Usually have body hair, three inner ear bones and the females nourish their young with milk from mammary glands. Examples: cows, elephants, whales, dolphins, sea lions, rats.

Omega 3 – An essential chemical which humans cannot make themselves so they have to take it in through their diet. Oily fish offers a good source of it, as does flax and grass-fed animals.

Overexploited – Fish stocks that are being harvested over their maximum biological capacity. This results in depletion of fish stocks.

Overfishing – Occurs when fishing intensity is higher than the acceptable level. If less fishing were carried out, then it would be possible to catch more fish in the medium term (after stocks have recovered).

Population – A collection of people or organisms of a certain species living in a specified geographic area.

Population crash – Sudden decline in the numbers of a species because of decreased availability of resources required for survival, growth and reproduction. For example, overfishing of one species may lead to a population crash of another species higher in the food chain due to a reduced supply of food.

Recreational fishing – See page 10. In the UK, angling is a large part of the tourist industry.

Subsistence fishing – See page 10. Difficult to find true examples of this as excess fish is often traded for goods or services.

Sustainable fishing – Fishing at a level that can be sustained by the fish stocks indefinitely and support fishers and the ecosystem in the long term.

Sustainable fish – Fish that has come from a fishery that is being sustainably fished such as those that are certified to the MSC standard for sustainable fishing.

Unsustainable fishing – Fishing that causes the depletion of fish stocks or unacceptable impacts on the marine environment and subsequently has negative economic and environmental impacts.

Further resources (all correct as of April 2007)

www.fishandkids.org – Complementary website to support this resource. See 'Staffroom' for additional teaching materials. Also find more information, pictures, games and activities for children highlighting marine life, the impact of fishing and sustainable fishing.

Our oceans, food chains, fish, plants and animals

www.arkive.org – The world's centralised library of films and photographs of the UK and the world's endangered species and habitats – freely accessible to all online for private research and internal educational purposes.

www.bbc.co.uk/nature/blueplanet – Loads of information about the oceans and their inhabitants.

www.ocean.udel.edu/extreme2002/creatures – University of Delaware website for children showing a variety of weird and wonderful abyssal sea creatures.

www.nmm.ac.uk/upload/package/52/index.html – Your Ocean is a website aimed at KS2 but is accessible for younger children too.

Information about sustainable fish and fishing

www.msc.org – Marine Stewardship Council website; information for consumers about where to buy MSC-labelled fish, plus information about the MSC for fisheries and businesses.

www.fishonline.org – Marine Conservation Society (MCS) website with information on all types of fish, plus an indication of sustainability for each species, lists of "fish to eat" and "fish to avoid", and information on methods of fishing and fish-farming.

www.mcsuk.org – The website of the MCS, the UK charity dedicated to protecting our seas, shores and wildlife. Call 01989 566 017 for your free MCS Pocket Good Fish Guide. Check out the Cool Seas education resources for more great teaching ideas and classroom activities.

www.seafoodchoices.com – Global trade association promoting responsible use of the ocean's resources.

www.oceansatlas.org – Information on types of fishing; search using keywords such as artisanal, industrial, subsistence or recreational.

www.greenfacts.org/fisheries/index.htm#2 – Global fishing statistics provided by the Food and Agriculture Organisation.

Eco-labels and responsible consumption

www.defra.gov.uk/environment/consumerprod/pdf/shoppers-guide.pdf – Defra's free, user-friendly "shopper's guide" to environmental labels.

<http://eng.msc.org> – See the 'where to buy' page to help with your shopping.

www.fsc.org – The Forest Stewardship Council promotes responsible management of the world's forests by using an eco-label.

www.soilassociation.org – The Soil Association is the UK's largest organic certification body.

www.ncc.org.uk – National Consumer Council, drives change to meet the needs of consumers.

Health benefits of eating fish

www.seafoodtraining.org – Educate children about fish and fishmongering.

www.thesuperhumans.com – Seafish website for children to explain the health benefits of eating fish.

www.seafish.org – Promotes the UK seafood industry – works with fishers, processors, suppliers, retailers etc.

Sustainable food systems – improve your school meals

www.fishandkids.org – Get sustainable fish into your school!

www.soilassociation.org – See Food for Life campaign for practical guidance on getting healthy and sustainable food into schools.

www.sd-commission.org.uk – Search 'Double Dividend' to find a report on Best Practice delivery of school meals.

www.sustainweb.org – The alliance for better food and farming. Plenty of information on food issues surrounding health and sustainability.

www.feedmebetter.com – Jamie Oliver's campaign website aiming to improve school meals.

www.schoolfoodtrust.org.uk – Transforming school food and food skills to improve health and education.

www.foodinschools.org – DH and DfES initiative to help schools implement a whole school approach to food education and healthy eating.

International environmental organisations

www.panda.org – World Wild Fund for Nature, look for information under the global marine programme. Good facts and figures.

www.wwf.org.uk – World Wild Fund for Nature website focussing on UK issues and campaigns.

www.greenpeace.org/international – Plenty of information on unsustainable use of the seas in the 'Save our Seas' campaign area.

www.greenpeace.org.uk – Information on the Greenpeace campaigns in the UK.

www.projectaware.org – Charity set up to help conserve the underwater environment through education, advocacy and action. See www.projectaware.org/kids for some fun, practical activities for children.



Activity Sheet answers

Many of the answers are discussed in the teacher's notes.

Food chain

Who eats what?

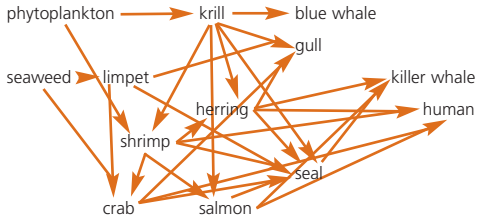
worm → fish → human
leaf → caterpillar → bird
pondweed → tadpole → fish → bird

What do you eat?

Grass → Shark (carnivore)
Worms → Cow (herbivore)
Fish → Human (omnivore)
Banana → Fish (could be carnivore, herbivore or omnivore, depending on species)

A delicate balance

Most examples are shown here.



Chain of effect

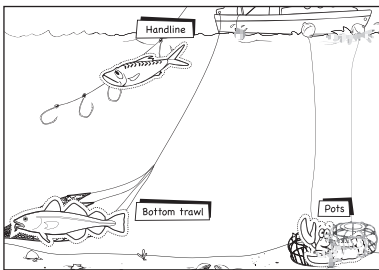
Potential roles to act out: 1) cod fisher 2) cod processor 3) snow crab fisher 4) lorry driver working for a transport company 5) supermarket manager [wants to buy cod and snow crabs from fishers, and then sell them to the public] 6) customer in a shop.

Fishing

What's in the sea?

Octopus = 3, whale = 1, starfish = 4, shark = 2, seahorse = 5.
Other creatures found in the picture: dolphins, seal, crabs, snails, coral, gulls.

How are fish caught?



Go fishing!

Mid-water trawl – herring, mackerel
Bottom trawl – prawns, cod
Longline – tuna, cod
Pots – lobsters, prawns
Handline – mackerel, cod

Plenty more fish in the sea?

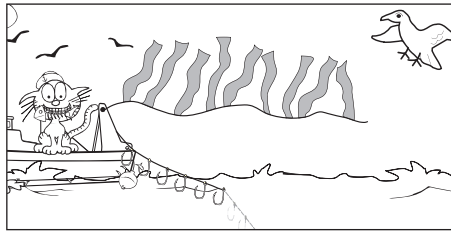
1b, 2d, 3c, 4e, 5a.

The Impact of fishing

Where would you go fishing?

Answer: picture 2. This shows a healthy ecosystem with lots of plants, fish and other marine creatures. Picture 1 shows a sea with very few fish and no plants or other sea life. There are also too many fishing boats.

Look after the sea!



This is one simple idea for a marine bird scarer. There are lots of other possibilities!

All fished out

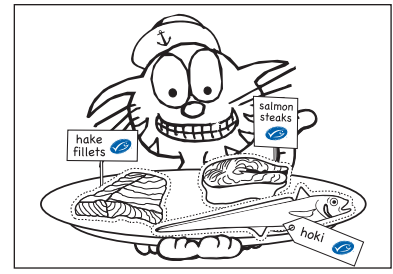
Picture 1 has been overfished. Other problems can include habitat destruction; bycatch of other fish, birds, mammals; increased competition for food for other creatures.

The future – sustainable fishing

- 1) ...allow small fish to get out.
- 2) ...warn dolphins to keep away.
- 3) ...keep birds away from fish hooks.
- 4) ...give fish a safe place to breed.
- 5) ...closed seasons.

Eco-labels

A visit to the shops



Look at the label

The picture could be of fresh fish, frozen fish, tinned, smoked, or a ready meal like a fish pie. Make sure there is a clear MSC logo to show that the fish is from a sustainable fishery!

What's inside?

Fish Fingers – product type and appearance, best before date, the fish is from a sustainable source.
Peas – product type and appearance, weight, storage instructions.
Potatoes – product type, country of origin.

Making your voice heard

Good things to include in the letter would be:
- Introduction – summary of the problems (overfishing, bycatch).
- Middle – shops and customers can help to support responsible fishers by choosing fish with the MSC eco-label.
- Conclusion – we can all do our bit to encourage sustainable fishing.



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Suggestions and comments would be gratefully received after you have used the pack and website. There is a feedback form on the website - www.fishandkids.org/staffroom - or you can email kids@msc.org.

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