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Glossary of Common Fisheries Management Terms

The following terms are intended to be used in this publication only, and are not intended to be inconsistent with fisheries legislation.

Adaptive management

Management involving active responses to new information or the deliberate manipulation of fishing intensity or other aspects in order to learn something of their effects. Within a stock, several sub-stocks can be regarded as experimental units in which alternative strategies are applied.

Age structure

A breakdown of the different age groups within an individual population, or population sample.

Allocation

Distribution of the opportunity to access fisheries resources, within and between stakeholder groups.

Anadromous

Fish that migrate from saltwater to freshwater to spawn.

Aquatic reserve

An area of water, or land and water, established as an aquatic reserve by proclamation under the Fisheries Act 1982.

Artisinal fishery

A small-scale, low-cost and labour-intensive fishery in which the catch is consumed locally.

Bag limit

The maximum number of a species that can be legally taken by a person per day or per fishing trip, as specified.

Benthic

Describes animals that live on, in or near the substrate.

Biodiversity

The variability among living organisms from all sources (including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part) and includes: (a) diversity within species and between species; and (b) diversity of ecosystems.

Biological reference point

An indicator of the status of an exploited stock and a standard for comparison between years. Two types are often used when sufficient biological data are available: those based on fishing mortality and those based on the sustainability of recruitment. In data-poor fisheries, other estimates of relative biomass may be used (i.e. total catch and catch per unit effort). Reference points can be either desirable targets (target reference points) or minimum biologically acceptable limits (limit reference points).

Biomass

The total weight or volume of individuals in a fish stock.





Boat limit

The maximum number of a species that can be legally taken by persons on a boat per day or per fishing trip, as specified.

Bycatch

At a broad level, fisheries bycatch includes all material, living and non-living, other than targeted species which is caught while fishing. It includes discards (that part of the catch returned to the water) and also that part of the catch that is not landed but is killed as a result of interaction with fishing gear.

Byproduct

Non-targeted catch that is commercially valuable and retained by fishers.

Catadromous

Fish that migrate from freshwater to saltwater to spawn.

Catch

The total amount (weight or number) of a species captured from within a specified area over a given period of time. The catch includes any animals that are released or returned to the water.

Catch per unit effort (CPUE)

The weight or number of a species caught by a specified amount of effort. Typically, effort units are defined using a combination of the following factors: gear type; gear size; the amount of gear; the amount of time the gear is used; and the number of people operating the gear. CPUE is often used as an index of relative abundance in fisheries stock assessment. In modern assessments, CPUE is standardised to account for the diverse range of factors that can affect CPUE.

Closures

Prohibition of fishing during particular times or seasons (temporal closures) or in particular areas (spatial closures), or a combination of both.

Cohort

A group of fish spawned during a specified period, usually within a year. A cohort is also referred to as an age class.

Co-management

Arrangements between governments and stakeholder groups to allow joint responsibility for managing fisheries resources on a cooperative basis. Co-management arrangements can range from a consultative model, where stakeholders have an advisory role to government, to an informative model where co-managers have decision-making powers.

Commercial fishing

Fishing undertaken for the purposes of trade or business.

Common property resource

A resource that is determined to be owned by the community, or by the state on behalf of the community, and to which no individuals or user groups have exclusive access rights.

Critical habitats

Habitats that are crucial in at least part of the life cycle of a species, which typically includes nurseries such as estuaries, mangroves, seagrass beds, reefs and defined spawning areas.

Data-poor fishery

A fishery where limited data are available to inform management, e.g. fisheries for species where baseline biological data such as size at maturity, fishing mortality and growth rates are unknown.

Ecologically sustainable development

Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

Economic efficiency

The maximisation of the value of the net benefits derived from fishery resources.

Ecosystem

A dynamic complex of plant, animal, fungal, and micro-organism communities and the associated non-living environment interacting as an ecological unit.

Effective fishing effort

Measures of fishing effort (such as hooks per day of fishing) that have been standardised so that the measure is proportional to the fishing mortality rate that the gear(s) impose on the stock of fish. Management measures to limit effective effort imply that the fishing mortality rate is to be limited.

Effort

Amount of fishing taking place, usually described in terms of gear type and frequency or period during which the gear is in use; for example, 'hook-sets', 'trawl-hours' and 'searching hours'.

Fecundity

Number of eggs an animal produces each reproductive cycle; the potential reproductive capacity of an organism or population.

Fisheries Management Committee (FMC)

A statutory advisory body established by the Minister to provide a forum for consideration of management issues relevant to a specific fishery, by stakeholders in that fishery. FMCs are designed to allow for stakeholder input to fisheries management.

Fishery

A term used to describe the collective enterprise of taking fish. A fishery is usually defined by a combination of the species caught (one or several), the gear and/or fishing methods used, and the area of operation.

Fishery-dependent data

Information collected about a fishery or fish stock by the participants of a fishery, e.g. catch and effort information from fishery log sheets.

Fishery-independent data

Information collected about a fishery or fish stock by researchers, independent of the fishery, e.g. scientific surveys, observer reports.

Fishing capacity

The amount of fishing effort that a fishing boat, or a fleet of fishing boats, could exert if utilised to its (their) full potential.





Fishing mortality

The rate of deaths of fish due to fishing.

Fully exploited

This describes a fish stock for which current catches and fishing pressure are close to optimum (the definition of which may vary between fisheries; e.g. catches are close to maximum sustainable yield). Categorising a species as 'fully fished' suggests that increasing fishing pressure or catches above optimum (allowing for annual variability) may lead to overfishing.

Gear restriction

A type of input control used as a management tool to restrict the amount and/or type of fishing gear that can be used by fishers in a particular fishery.

Growth over fishing

A level of fishing pressure beyond that required to maximise the yield (or value) per recruit; a level of fishing where young recruits entering the fishery are caught before they reach an optimum marketable size.

Habitat

The place or type of site in which an organism naturally occurs.

Harvest

The total number or weight of fish caught and kept from an area over a period of time.

Indicator species

A species whose presence or absence is indicative of a particular habitat, community or set of environmental conditions.

Individually transferable quota

A management tool by which portions of the total allowable catch are allocated among licence holders (individual fishers or companies) as units of quota. Quota entitlements can be made to be temporarily or permanently transferable between these licence holders.

Input controls

Limitations on the amount of fishing effort; restrictions on the number, type, and size of fishing vessels or fishing gear, or on the fishing areas or fishing times in a fishery.

Latent effort

The potential for effective effort within a fishery to increase over time (i.e. inactive fishing licences that may be used in the future).

Length frequency

An arrangement of recorded lengths of a species of fish, which indicates the number of times each length or length interval occurs in a population or sample.

Limited entry

Fishing effort is controlled by restricting the number of operators. It usually requires controlling the number of licences in a fishery. It can also include restrictions on the number and size of vessels, the transfer of fishing rights, and the replacement of vessels

Logbook

An official record of catch and effort data made by fishers.

Marine park

An area of water, or land and water, considered to be of national significance because of the aquatic flora or fauna of those waters or the aquatic habitat, and established as a marine park by proclamation under the *Fisheries Act 1982* and/or the *National Parks and Wildlife Act 1972*.

Marine protected area

An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means.

Minimum mesh size

The smallest size of mesh permitted in nets and traps; imposed on the basis that smaller individuals will escape unharmed.

Mortality

Rate of deaths (usually in terms of proportion of the stock dying annually) from various causes. Comprises (i) Natural mortality – deaths in a fish stock caused by predation, pollution, senility, etc., but not fishing, and (ii) Fishing mortality – deaths in a fish stock caused by fishing.

Nominal fishing effort

'Nominal' means quantities as they are reported, before any analyses or transformations. Nominal effort refers to measures of fishing effort or vessel carrying capacity that have not been standardised.

Non-retained species

Species that are taken as part of the catch but are subsequently discarded, usually because they have low market value or because regulations preclude them being retained.

Non-target species

Any part of the catch, except the target species, and including bycatch and byproduct.

Offshore Constitutional Settlement (OCS)

An agreement between the state(s) and the Commonwealth whereby the state or the Commonwealth (or in some cases a Joint Authority) is given jurisdiction for a particular fishery occurring in both coastal waters and the Australian Fishing Zone. When no OCS agreement has been reached, the fishery remains under the jurisdiction of the state out to 3 nm, and the Commonwealth from 3 to 200 nm.

Output controls

Limitations on the weight of the catch (quota), or the allowable size, sex or reproductive condition of individuals in the catch.

Over-exploited or over fished

A fish stock in which the amount of fishing is excessive or for which the catch depletes the biomass too much; or a stock that still reflects the effects of previous excessive fishing.

Parameter

A 'constant' or numerical description of some property of a population.

Parental stock

The weight of the adult population of a species.



Population

A group of individuals of the same species, forming a breeding unit and sharing a habitat.

Possession limit

A possession limit under the Fisheries Act 1982 is a prescribed number of fish for a species that represents what is considered a commercial quantity of that species. If a person has the prescribed amount of fish in their possession, then the onus of proof is reversed in any prosecution relating to taking those fish illegally.

Precautionary principle

This concept asserts that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decision making should be guided by: (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and (ii) an assessment of the risk-weighted consequences of various options.

Quota

A limit on the weight or number of fish that may be caught of a particular stock or from specified waters.

Quota entitlement

The proportion of a quota that is allocated to a particular licence, which limits the total amount of a species that is permitted to be taken pursuant to that licence.

Recreational fishing

Fishing for a purpose other than trade or business, where the catch is released or used for personal consumption or taken for sport.

Recruitment

The addition of new individuals to a stock.

Recruitment over fishing

Occurs when excessive fishing effort or catch reduces recruitment to the extent that the stock biomass falls below the pre-defined limit reference point.

Relative abundance

An index of fish population abundance used to compare fish populations from year to year. This does not measure the actual numbers of fish, but shows changes in the population over time.

Retained species

The species within the catch that are not discarded.

Sample

A proportion or a segment of a fish stock which is removed for study, and is assumed to be representative of the whole. The greater the effort, in terms of both numbers and magnitude of the samples, the greater the confidence that the information obtained is a true reflection of the status of a stock (level of abundance in terms of numbers or weight, age composition, etc.).

Seasonal closure

The closure of a fishing ground for a defined period of time, usually used to protect a stock during a spawning season.

Selectivity

The ability of a type of gear to target and catch a certain size or species of fish.

Size limits

A minimum or maximum size limit determines the legal size at which a given species can be retained.

Size of maturity

Length or weight of the fish when it attains reproductive maturity.

Socio-economic

Relating to both social and economic considerations.

Spatial

Of or relating to space.

Species

A group of organisms capable of interbreeding freely with each other but not with members of other species.

Slot size limit

Refers to a situation where both a minimum and maximum size limit has been determined for a given species.

Stakeholder

An individual or a group with an interest in the conservation, management and use of a resource.

Stock

A group of individuals of a species occupying a well-defined spatial range independent of other groups of the same species, which can be regarded as an entity for management or assessment purposes.

Stock assessment

A detailed analysis of stock status (abundance, distribution, age structure, etc.) to support the management of the species or fishery.

Target effort

Effort that is directed at a particular species.

Target species

The most highly sought component of the catch taken by fishers.

Temporal

Of or relating to time.

Threatened

A species or community that is vulnerable, endangered or presumed extinct.

Total allowable catch (TAC)

For a fishery, a catch limit set as an output control on fishing. The total amount of a species that may be taken during a specified time period.



Total allowable commercial catch (TACC)

For a fishery, a catch limit set as an output control specifically on commercial fishing. The total amount of species that may be taken by commercial fishing during a specified time period.

Traditional fishing

Fishing for the purposes of satisfying personal, domestic or non-commercial communal needs, including ceremonial, spiritual and educational needs and utilising fish and other natural marine and freshwater products according to relevant indigenous custom.

Trigger points

Events or measures that, if they occur or if they reach specified levels, are used to determine when a response should be made. Not usually used as a criterion for over fishing, but to indicate the need for review of management.

Uncertain

A fish stock that may be under fished, fully fished or over fished, but for which there is inadequate or inappropriate information to make a reliable assessment of its status.

Under-exploited or under fished

A fish stock that has potential to sustain catches higher than those currently taken.

Vulnerable species

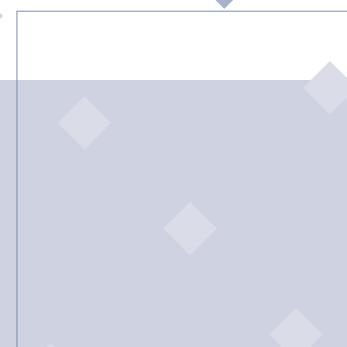
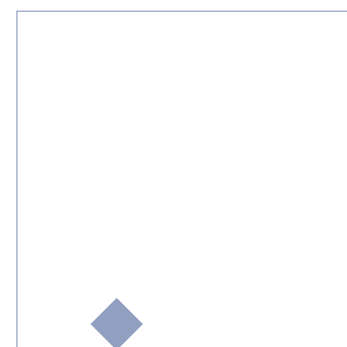
Under endangered species protection legislation, a species that within 25 years will become endangered unless mitigating action is taken.

Yield

Total weight of fish harvested from a fishery.

Yield per recruit

Analysis of how growth and natural mortality interact to determine the best size of animals for harvest.



acronyms

<i>AFMA</i>	Australian Fisheries Management Authority
<i>CPUE</i>	Catch Per Unit Effort
<i>CDR</i>	Catch Disposal Record
<i>CSIRO</i>	Commonwealth Scientific and Industrial Research Organisation
<i>EEZ</i>	Exclusive Economic Zone
<i>EPBC Act</i>	Environment Protection and Biodiversity Conservation Act 1999
<i>ESD</i>	Ecologically Sustainable Development
<i>FMC</i>	Fisheries Management Committee
<i>FRDC</i>	Fisheries Research and Development Corporation
<i>GVP</i>	Gross Value of Product
<i>ITQ</i>	Individually Transferable Quota
<i>MEY</i>	Maximum Economic Yield
<i>MPA</i>	Marine Protected Area
<i>MSY</i>	Maximum Sustainable Yield
<i>NZRLF</i>	Northern Zone Rock Lobster Fishery
<i>PIRSA</i>	Department of Primary Industries and Resources South Australia
<i>SAFIC</i>	South Australian Fishing Industry Council
<i>SARDI</i>	South Australian Research and Development Institute
<i>SARFAC</i>	South Australian Recreational Fishing Advisory Council
<i>SZRLF</i>	Southern Zone Rock Lobster Fishery
<i>TAC</i>	Total Allowable Catch
<i>TACC</i>	Total Allowable Commercial Catch

