

Appendix L. Glossary of Terms and Abbreviations

Absolute abundance - The total number of a kind of fish in the population. This is rarely known, but usually estimated from relative abundance (see **Relative Abundance**), although other methods may be used.

Abundance - See **Relative abundance** or **Absolute abundance**.

Acceptable biological catch (ABC) - A scientific calculation of the sustainable harvest level of a fishery as determined by federal fisheries biologists.

Adaptive management - In regard to a marine fishery, it means a scientific policy that seeks to improve management of biological resources, particularly in areas of scientific uncertainty, by viewing program actions as tools for learning. Actions shall be designed so that even if they fail, they will provide useful information for future actions. Monitoring and evaluation shall be emphasized so that the interaction of different elements within the system can be better understood.

Allocation - The apportionment of an item for a specific purpose to a particular person or group of persons; in this FMP it means to set aside a certain amount of nearshore fish for recreational, commercial, and ecosystem needs.

Assessment - As in species assessment (e.g., lingcod assessment): a formal study and review of a population based on standardized methodologies, often including the use of complex models when adequacy of data allows. The end result is generally to determine allowable harvest.

Assessment model - used by a scientist or scientific body to judge the state of a resource (e.g., size, health, pollution impacts), usually for passing advice to management authority.

Authority - The power to adopt and implement regulations delegated by law to the Fish & Game Commission or the California Department of Fish and Game. Specifically, It means "the provision of law which permits or obligates the agency to adopt, amend, or repeal a regulation" [Government Code Section 11349(b)].

Bag limits - The total amount of fish that may be captured per person per day by law.

Basic-sector - Industry sectors within a local economy, such as the fish harvesting sector, or the fish processing sector, whose products generate new dollars entering the local economy.

Beach seine - A fishing net that hangs vertically in the water with floats on the upper edge and sinkers on the lower edge. Deployed by hand or vessel to sample the wave-swept beach environment.

Benthic - On or relating to the region at the bottom of a sea or ocean.

Bioaccumulate - The ability of some substances to accumulate in an organism's tissues and be passed along food chains (e.g., from small animals to larger animals to humans or other top predators).

Biodiversity - The existence of a wide range of different species in a given area or during a specific period of time.

Bioenergetic - The transformations of energy in living organisms.

Biomass (B) - The total weight of a stock or population of organisms at a given point in time.

Biomass set asides - Generally, a portion of potential harvest that is assigned for some purpose other than catch and is subtracted (reserved) from the MSY harvest to arrive at allowable harvest. This reserved portion may be assumed necessary for the benefit of other species such as marine mammals, birds, etc., or may be part of a management goal such as a trophy fishery, non-consumptive uses (e.g., saving some garibaldi for their aesthetic qualities), or research.

B_{msy} - Biomass level associated with maximum sustainable yield (MSY).

Bottomfish - Fish that live (and are caught) on the sea floor.

B_{unfished} - The unfished or pristine biomass.

Bycatch - Fish or other marine life that are taken in a fishery but which are not the target of the fishery.

Catch Per Unit of Effort (CPUE) - The catch obtained by a vessel, gear, or fisherman per unit of fishing effort (e.g., number of fish caught per hour of trawling).

California Environmental Quality Act (CEQA) - This Act (Public Resources Code §21000 et seq.) 1) identifies the significant environmental effects of California's public agencies' actions; and either 2) avoids those significant environmental effects where feasible, or 3) mitigates those significant environmental effects where feasible.

Charter boat - A sport-fishing boat which has been hired to take out a group of sport fishermen.

Chumming - Placing any material other than on a hook in the water while angling, for the purpose of attracting fish to a particular area in order that they may be taken.

Coefficient (employment) - Used to estimate the impact of a resource change, or the

contribution of an industry sector to local employment.

Coefficient (income) - Used to estimate the impact of a resource change, or the contribution of an industry sector to local personal income.

Cohort - A group of individuals of a species that resulted from a single spawning event, period, or season. See **Year-class**.

Commercial fishing - The act of fishing with the intent of selling the catch.

Commercial passenger fishing vessel (CPFV) - A licensed fishing vessel that takes recreational anglers fishing in return for a fee. The vessel operator must follow certain requirements such as providing the Department with a log that, among other things, includes the number of anglers and an enumeration of the catch.

Commission - Fish and Game Commission.

Complex - A designated grouping of fishes composed of different species considered as a single unit because they are often caught and/or landed together and may be difficult to sort by species.

Conservation - A philosophy or method of resource management which limits the amount of harvest of desirable species to ensure the overall health of the ecosystem and the long-term productivity of harvested species.

Conservation area - An area assigned to protect an entire ecological region. Examples of conservation areas include the Great Barrier Reef off Australia and Adirondack State Park in the United States.

Constituent - Any individual interested in or participating in the development of actions mandated in the NFMP and/or affected by them. However, because natural resources are held in common by all members of society, it generally includes all members of society, whether participating or not.

Consumptive uses - Activities such as fishing, which remove portions of the resource.

Control date - An established date after which participation in a fishery may not be counted in establishing qualifications towards a restricted access permit.

Creel survey - Catch information gathered from recreational sources.

Cumulative landings - A listing of yearly landings in which a running total is kept. For example, January landings would include only January landings while February landings would include both January and February, while March would include January, February and March, etc.

Data-moderate - Having enough data to proceed with a small degree of confidence.

Data-poor - Not having enough data to proceed with confidence.

Data-rich - Having enough data to proceed with a large degree of confidence.

Demand functions - Market demand or aggregate individual demand for goods or services at various purchase prices and quantities (or qualities).

Demographic model - A model used to systematically study populations or a specific population, including such aspects as size, age, distribution, and birth and death rates.

Density - Number of organisms per unit of area or volume. **Absolute density** is the number of individuals of any given group (i.e. taxon) that occur within a designated surface area of bottom or volume of water column.

Depressed fisheries - The condition of a fishery for which the best available scientific information and other relevant information that the Commission or Department possesses or receives, indicates that a declining population trend has occurred over a period of time appropriate to that fishery. With regard to fisheries for which management is based on maximum sustainable yield, or in which a natural mortality rate is available, "depressed" means the condition of a fishery that exhibits declining fish population abundance levels below those consistent with maximum sustainable yield.

Depressed stock - A stock whose abundance has declined to a level below which maximum long-term productivity (MSY) cannot be achieved or which may adversely affect the health of the ecosystem.

Discards - Fish that are taken in a fishery but are not retained because they are of an undesirable species, size, sex, or quality, or because they are required by law not to be retained.

Districts - Divisions of the State, similar to counties, that the Department has defined mainly for administrative purposes.

Diurnal - Describes phenomena that occur daily.

Diversity - A measure of the variety of species composition of an area or ecosystem; i.e., low diversity means few species while high diversity indicates many species. Also termed **Biodiversity**.

Dressed - Describes fish that are gutted and rinsed clean; may also include removal of the head.

Ecological - Of or relating to the environment or to the science of ecology, also relating to the prudent use or beneficial management of natural resources and the natural environment. An **Ecological niche** is the unique position occupied by a particular species, both in terms of the actual physical area that it inhabits and the function that it performs within the community. The ecological niche can be described by mapping the space and resources utilized by a species or given population.

Ecological reserves - As defined in the Marine Resources Protection Act of 1990, ecological reserves are designated areas along the coast used solely for scientific research related to the management and enhancement of marine resources. Generally, ecological reserves are often used for research purposes or to protect rare species.

Economic efficiency - Production of the largest possible net benefit in the use of a resource. One use is more efficient than another if it produces more total value without increasing the cost, or if it produces the same value at a lower cost.

Ecosystem - The physical and climatic features and all the living and dead organisms in an area that are interrelated in the transfer of energy and material, which together produce and maintain a characteristic type of biological community.

Effort - A measure of some expenditure in pursuing an activity. The measure in fishing effort is usually in terms of time fished but may include the amount of fishing gear per unit of time or the size of vessel per unit of time, etc.

El Niño - A cyclic warming of the ocean surface waters in the eastern Pacific Ocean. It is characterized by a lack of upwelling of cold, nutrient-rich waters nearshore.

Entrained - To be pulled or drawn along by a current.

Epifauna - Animals living on or just above the surface of the sea floor.

Essential fishery information (EFI) - With regard to a marine fishery, means information about fish life history and habitat requirements; the status and trends of fish populations, fishing effort, and catch levels; fishery effects on fish age structure and on other marine living resources and users; and any other information related to the biology of a fish species or to taking in the fishery that is necessary to permit fisheries to be managed according to the requirement of this code.

Estuarine - An area where salt and fresh water mix, such as a bay or at the mouth of a river. Generally a highly productive area, biologically.

Ex-vessel value - The value of fish at first sale by fishermen at the dock, distinguished from wholesale or retail value.

Exclusive economic zone (EEZ) - A zone created by the Magnusen-Stevens Fishery

Act, extending from 3 nautical miles to 200 miles offshore the United States and its territories, over which the United States has management jurisdiction of natural resources including fisheries, oil, and minerals.

Extractive uses - Activities such as fishing, which remove fish from the resource.

Fathom - A unit for measuring depth; equal to six feet.

Fecundity - The reproductive capacity of an individual female animal, generally expressed as the number of eggs or larvae per unit weight or per individual.

Fillet - The meaty, boneless side of a fish, cut away from the body and used for food purposes. May be with or without skin.

Finfish - Fishes with fins (vertebrates), as opposed to shellfish (which are invertebrates).

Fishery-dependent - Describes information collected directly from fishery landing data.

Fishery-independent - Describes information collected separately or independent of fishery landing data.

Fishery research protocol - A defined methodology used to collect fisheries data and/or conduct fishery research.

Fishing mortality rate (F) - A measurement of the rate of removal of fish from a population by fishing.

Fork length - The length of a fish, measured from the tip of its snout to the fork in its tail.

Gear, gill net - A single wall of webbing, bound at the top by a float line and at the bottom by a weighted line and used for entangling fish.

Gear, handline - A fishing line with attached hooks which is set and pulled by hand.

Gear, hook-and-line - Any fishing line with attached hooks (e.g., longline, troll and stick gear, among others).

Gear, rod-and-reel - A reel attached to a fishing rod, with fishing line and some sort of hook attached to the line.

Gear, set line - A long fishing line towed by a boat and supporting many smaller lines bearing baited hooks.

Gear, spearfishing - Generally refers to a spear gun, which is a device for mechanically shooting a spear-like missile underwater to take fish.

Gear, stick - Fishing gear with hooks attached to a ridged or semi-ridged pole, stick, cable, etc., that is fished on the bottom or mid-depth, attached by a line to a surface buoy for retrieval. Stick gear is an efficient gear for fishing within kelp beds.

Gear, trammel net - Two or more walls of webbing, bound at the top by a float line and at the bottom by a weighted line and used for entangling fish.

Gear, trap - Generally, a wire basket or cage used for trapping fish.

Gear, troll - Usually includes hydraulic or hand gurdies fastened to a fishing vessel which are used to set out and retrieve a number of long fishing lines. Lines enter the water from two fishing booms (or “poles”) set at 45-degree angles to the vessel’s house or cabin and include a number of attached, baited hooks or lures which are towed slowly through the water while fishing.

Geographic information system (GIS) - computerized systems used to link information stored in databases to maps, increasing and varying the amount of information a map can display.

Gill net - A single wall of webbing, bound at the top by a float line and at the bottom by a weighted line and used for entangling fish.

Gonadosomatic index - An index rating the reproductive condition or state of a fish; a measure of an individual’s investment in gamete production, sometimes expressed as the ratio of gonad weight to total body weight.

Groundfish - In the North Pacific, about a dozen species comprise the groundfish complex. They include pollock, Pacific cod, rockfish, yellowfin sole, and rock sole.

Groundfish Plan - Pacific Coast Groundfish Fishery Management Plan.

Habitat - The physical, chemical, and biological features of the environment where an organism lives.

Harvest guideline - The amount of catch allowed (either a weight or a proportion of the stock size), which differs from a quota in that closure of a fishery (prohibition of retention, possession, or landing) is not automatically required when the guideline is reached.

Harvest control rules - The calculated amount of a resource that can be taken; also the defined upper limits on that amount.

Handline - A fishing line with attached hooks which is set and pulled by hand.

Haul seine - See **Beach seine**.

Heterogeneity, heterogeneous - Consisting of dissimilar constituents; mixed.

High- or low-relief - The relative vertical scale of hard ocean bottom, generally expressed in change in vertical distance relative to change in horizontal distance (or, rugged versus smooth).

Histological - Having to do with the study of microscopic anatomy and the function of cells and tissues.

Homogeneous - Having a similar structure or composition throughout.

Hook-and-line - Any type of fishing gear involving a fishing line with attached hooks (e.g., longline, rod-and-reel, troll and stick gear, among others).

Hydrology - Study of water movement across land areas.

Ichthyoplankton - Larval fish that float or drift freely in water because they have little or no ability to determine their own movement.

Impinged - To strike or collide.

In situ - In its original site or position.

In the round - Refers to fish that is delivered to a fish buyer intact, i.e., not gutted or physically altered.

Incidental allowance - A regulatory provision to allow bycatch in a fishery.

Indices of Abundance - Measurements, made over time, of the abundance of an organism and used to make inferences about the abundance of an entire population . Indices of abundance are not conducted using statistically-sound random sample design (they often contain spatial or other methodological biases). Consequently they do not lend themselves to accurate probability estimations and should be used with caution.

Individual fishing shares (IFS) - A program which limits the catch allowed per license or individual as well as the number of individuals who participate.

Input-output multipliers - A set of commonly-used economic coefficients or multipliers used to estimate the impact of a resource change or industry contribution to economic output, personal income, and employment.

Intertidal - The part of the shore that lies between the low and high water lines.

Invertebrate - Animal lacking a backbone.

Landing limit - The amount of fish that may be taken and retained, possessed, or landed from a single fishing trip or during a specified period of time. Also known as trip limit.

Limited entry program - Regulatory program that restricts the total number of permitted fishing licenses or vessels.

Landings - The number or poundage of fish unloaded at a dock by commercial fishermen or brought to shore by recreational fishermen for personal use. Landings are reported at the points where fish are brought to shore. Note that landings, catch, and harvest define different things.

Landing receipt - A document provided by the Department to commercial fish markets for recording landing information. Information required includes date, port of landing, species or market category of fish, pounds landed, and price paid. Also called market receipt.

Length-frequency distributions - A graphical representation of the number of organisms by length.

Macroalgae - Multicellular algae visible to the unaided eye (i.e. visible without using a microscope) such as giant kelp and bull kelp; having a filamentous, sheet, or mat-like appearance.

Macroinvertebrates - Animals lacking a backbone and visible to the unaided eye (i.e., mussels, squid, crabs, etc.)

Magnusen-Stevens Act - Created by Congress in 1976, a 200-mile federal fisheries zone and eight regional councils to oversee the U.S. fisheries, which operate under the authority of the U.S. Department of Commerce.

Management uncertainties - Phrase used to describe problems caused by a lack of sufficient information for making sound management decisions.

Mandates - Something required by a statute or regulation to be done.

Mariculture - The commercial growing of fish, crustaceans, and other oceanic species.

Market categories - General groupings of fish that are not species specific. One or many species may be landed and weighed as a group and recorded in a general category. Price paid per pound of fish often determines what species are included in a

market category.

Market receipt - see **Landing receipt**.

Marine protected areas (MPAs) - Areas closed to all fishing, or to specific user groups, or to the take of certain species; they are used to geographically limit effort and to protect portions of stocks.

Maximum sustainable yield (MSY) - In a marine fishery means the highest average yield over time that does not result in a continuing reduction in stock abundance, taking into account fluctuations in abundance and environmental variability.

Metamorphose - To change, generally from one form to another.

Moratorium - A legally authorized suspension of activity; such as the closure of participation in a fishery by limiting the number of permits allowed, or completely halting all fishing for a particular species.

Multi-day fishing - A provision for a recreational fisherman to possess more than one daily bag limit of fish while on a fishing trip that lasts longer than one day: by acquiring a multi-day fishing permit

Nautical mile - A measure of distance used in marine navigation equal to 6,080 ft.

Nearshore - All oceanic waters including around offshore rocks and islands extending from the shore to a depth of 20 fathoms (120 feet).

Neashore benthos - Nearshore, ocean-floor area.

Nocturnal - Relating to, or occurring at night.

Non-consumptive uses - Activities which involve the specified resource but no harvest is involved; the same as non-extractive uses.

Non-extractive uses - Activities which do not remove fish from the resource, such as (non-fishing) sporting activities, wildlife watching, and eco-tourism.

Non-point source - A source of water not discharged from a discernable, specific location.

Offshore - All oceanic waters outside state waters or deeper than 100 fathoms (for comparison see **Nearshore**).

Opercula - Plural for operculum: 1) the gill coverings on a fish, or 2) in gastropods (snails), the horny covering which closes the opening of the shell when the animal retracts inside.

Optimum economic yield - The yield that delivers maximum financial value possible for a system, taking harvesting costs and market factors into account.

Optimum sustainable yield (OSY) - A sustainable yield that takes into account biological, social, and political values, and the effect of harvest on dependent or associated species, in an attempt to produce the maximum benefit to society from a stock of fish.

Optimum Yield (OY) - With regard to a marine fishery, means the amount of fish taken in a fishery that does all of the following: a) provides the greatest overall benefit to the people of California, particularly with respect to food production and recreational opportunities, and takes into account the protection of marine ecosystems, b) is the maximum sustainable yield of the fishery, as reduced by relevant economic, social, or ecological factors, and c) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing maximum sustainable yield in the fishery.

Otolith - One of a number of tiny calcium-containing granules in the inner ear; provides sensory information on the position and movement of the head in space. Patterns of otolith growth provide information on fish age.

Overfishing - Means a rate or level of take that the best available scientific information (and other relevant information that the commission or department possesses or receives) indicates is not sustainable or that jeopardizes the capacity of a marine fishery to produce the maximum sustainable yield on a continuing basis.

Pathogen - An agent that causes disease.

Pelagic - Of or relating to aquatic organisms that live in the ocean without direct dependence on the shore or bottom.

Physiological - Of or relating to the normal functioning of an organism.

Pingers - Sound devices placed on fishing nets to scare away marine mammals or birds.

Planktivores, planktivorous - Organisms whose main diet is plankton.

Plankton - Very small organisms that passively drift with tide and current.

Planktonic - Of or related to organisms which float or drift freely in water because they have little or no ability to determine their own movement.

Population - A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Pot - A fish trap typically consisting of a wire basket or cage.

Pound net - An enclosure in which fish are trapped or kept.

Precautionary adjustment - A modification of a harvest limit such as optimum yield that implements conservation measures even in the absence of scientific certainty that fish stocks are being overexploited. Sometimes called the **precautionary principle**.

Proactive - To take action before a situation becomes serious.

Programmatic alternatives - Different choices for harvest control rules.

Proxy - A number that is used as a substitute for another number. In fisheries management, landing information is often used as a proxy for other types of information not yet available.

Punch cards - A type of bag limit whereby cards are issued for catch and possession of one or more fish.

Quotas - Specified harvest limits; after the limit has been reached, the fishery is closed for that species, gear type, geographic area, or individual participant.

Random, spatially-stratified sampling - Statistical sampling procedure in which individual samples within a discrete habitat are drawn at random, and are also collected among different habitats so as to ensure that each habitat is adequately represented.

Recruit - An organism entering the exploitable stage of its life cycle; or a larval or juvenile organism as it settles or appears in the adult ecological niche.

Recruitment - Either the rate of entry of recruits into the fishery or the process by which such recruits are generated. It is usually associated with attainment of a particular age or size, but can also be dependent on such factors as the fishes' appearance on a particular fishing ground, or how they grow to a size large enough to be captured by a certain fishing gear.

Regional management area - A geographic region within which management harvest guidelines are set for the entire area and within which regulations are uniform where practical.

Regulatory discards - Fish which must be thrown back because catch limits have been exceeded.

Relative abundance - Usually measured with indices that track trends of a population biomass (e.g., CPUE) over time. It is not a direct or (usually) precise estimate of biomass.

Relative density - The density of a single group in one place compared to another, or the density of one group compared to another in the same place.

Resources - 1) tangible and intangible things that lie ready for use or that can be drawn upon in time of need or want; 2) the people, funds, facilities, land, ocean, and information managed as input to any process or activity.

Restricted access programs - Limiting by statute or regulation the number of persons who may participate in a fishery, or the number of vessels that may be used in taking a specified species of fish, or the catch allocated to each fishery participant.

Rod-and-reel gear - A reel attached to a fishing rod, with fishing line and a hook attached to the line.

Scientific collecting - The taking of specimens for research under a permit granted by the Department.

Set line - Fishing line that is laid on the bottom. Usually anchors are attached at each end to prevent line from drifting; a line with a buoy is attached to one or both ends; and hooks are attached to the line.

Settlement - In marine ecology, the process by which organisms change from an open ocean life history phase to assume a new mode of life as a member of a sea-floor community. In rockfish, it is the stage at which juveniles move into the adult habitat where they become resident.

Settlement success - The success with which fish change from the larval stage to the juvenile stage as they move from the upper water column to the mid-water or benthic environment.

Shelf - A flat, horizontal extension of the ocean bottom.

Site fidelity - The degree to which species are confined to certain communities.

Siting criteria - Standards used to decide if the placement of an MPA conforms to NFMP goals.

Size limit - The minimum size a fish or other organism must be for it to be possessed.

Slope - A stretch of ocean bottom forming a natural incline.

Spillover - The emigration of adults from a protected area to the fishing grounds, and/or larval export from the protected area to surrounding areas.

Sonar - A remote-sensing technology that uses underwater sound waves to locate or track objects.

Southern California Bight - Geographical area between Point Conception in Santa Barbara County and the Mexican border.

Spawn - The mass of eggs that is deposited by fishes, or the act of depositing eggs or sperm directly into the water.

Species complex - A group of closely related fish; e.g., rockfish complex which is composed of several species of rockfish.

Species composition - A list of species within a sample, and the proportion of the sample contributed by each species.

Species-specific - Applying only to a particular species.

State Marine Conservation Areas - Areas wherein certain commercial and recreational take is prohibited; scientific collecting may be allowed by permit.

State Marine Reserves - no-take areas providing total protection for the marine flora, fauna, and habitat in an enclosed area.

State Marine Parks - An area where commercial take is prohibited, but recreational take and scientific collecting may be allowed by permit (e.g., fishing license or scientific collecting permit). Some forms of recreational take may also be prohibited in these areas.

Stick gear - Fishing gear with hooks attached to a rigid or semi-rigid pole, stick, cable, etc., that is fished on the bottom or mid-depth and attached by a line to a surface buoy for retrieval. Stick gear is an efficient gear for fishing within kelp beds.

Stock - A distinct, reproductively isolated population. In practice, the members of a species inhabiting any conveniently defined area, which can be discreetly managed.

Stock Structure - Any description of the population attributes of a stock (age, size, sex), usually within a spatial context. This commonly refers to the spatial distribution of breeding groups or genetically-related organisms.

Stock synthesis model - See **Synthesis model**.

Sub-stock - A portion of a stock that exhibits unique, definable attributes.

Substrate - The surface or medium on or in which an organism lives (i.e., mud, sand, rocks).

Sustainable, Sustainable use, and Sustainability - With regard to a marine fishery, means both of the following: a) continuous replacement of resources, taking into account fluctuations, and b) securing the fullest possible range of present and long-term economic, social and economic benefits, maintaining biological diversity, and managing fisheries in a way that does not exceed optimum yield.

Synthesis model - An age-based landings model which allows the inclusion of additional data sources such as trawl surveys, with the ability to assess the contributions of such data to the model (developed by Rick Methot of the National Marine Fisheries Service).

Thermocline - Boundary between water masses that have different temperatures.

Time closures - A specific period of time when no fishing is allowed.

Trap gear - Generally, a wire basket or cage used for trapping fish.

Trammel net - Two or more walls of webbing, bound at the top by a float line and at the bottom by a weighted line and used for entangling fish.

Transect - A linear survey used to quantify the distribution of organisms in a specific area.

Transport (larval) - Movement of larvae along or away from the coastline. This movement is usually by ocean currents.

Trawl - Fishing by means of a trawl net. A **trawl net** is a cone- or funnel-shaped net which is towed or drawn through the water by a fishing boat and includes any gear legally required for the net.

Trip frequency limit - A limit on the number of trips during a specified period of time.

Trip limit - The amount of fish that may be taken and retained, possessed, or landed from a single fishing trip or during a specified period of time. Also known as **Landing Limit**.

Troll gear - Usually includes hydraulic gurdies fastened to a fishing vessel which are used to set out and retrieve a number (usually six) of long fishing lines. Lines enter the water from two fishing booms (or "poles") set at 45-degree angles to the vessel's house or cabin. Lines with a number of attached, baited hooks or lures are towed slowly through the water while fishing.

Trophic - Of or having to do with nutrition or the nutritive process. A **trophic web** describes the feeding relationships in communities that determine the flow of energy and materials from plants to herbivores, carnivores, and scavengers.

Upwelling - On the California coast, upwelling is the upward movement of deep waters into the nearshore ecosystem due to springtime winds moving the topmost layers of water away from land.

Vertebrate - Any animal with a backbone.

Year-class - A group of individuals of a species that were spawned or hatched during a particular calendar year. See **Cohort**.

Young-of-the-year (YOY) - Fish less than 1 yr old.

Zooplanktivores, Zooplanktivorous - Describes an organism that consumes zooplankton.

Zooplankton - Small animals passively carried along with water currents and other water movement.