

Glossary

A Abiotic - A nonliving (physical or chemical) component of the environment.

Anadromous - Fishes that migrate as juveniles from freshwater to saltwater and then return as adults to spawn in freshwater; most Pacific salmon are anadromous.

Associated Species - Those species that (a) prey upon the target species, (b) are preyed on by it, (c) compete with it for food, living space, etc., or (d) co-occur in the same fishing area and are exploited (or accidentally taken) in the same fishery or fisheries. These interactions can occur at any stage of the life cycle of one or other species and the range of species concerned can therefore be very large.

B Bag Limit - The number and/or size of a species that a person can legally take in a day or trip. This may or may not be the same as a possession limit.

Baseline - A set of reference data sets or analyses used for comparative purposes; it can be based on a reference year or a reference set of (standard) conditions.

Benthic - 1. Defining a habitat or organism found on the sea bottom; 2. Of or pertaining to the seafloor (or bottom) of a water body.

Biomass (B) - 1. Or standing stock. The total weight of a group (or stock) of living organisms (e.g. fish, plankton) or of some defined fraction of it (e.g. spawners) in an area, at a particular time; 2. Measure of the quantity, usually by weight in pounds or metric tons (2,205 pounds or 1 metric ton), of a stock at a given time.

Biota - The plant and animal life characteristic of a specific region or biosphere, or given time period.

Biotic - Pertaining to the living components of their environment.

Bloom - A sudden increase in the abundance of alga or phytoplankton resulting in a contiguous mass of highly concentrated phytoplankton in the water column.

Bony Fishes - Fishes with a calcified hard skeleton and belonging to Class Osteichthyes; includes most fish species except sharks, rays, skates, hagfish, and lampreys.

C Catadromous - Fishes that spend most of their life in freshwater and then migrate into saltwater to spawn.

Catch - 1. To undertake any activity that results in taking fish out of its environment dead or alive. To bring fish on board a vessel dead or alive; 2. The total number (or weight) of fish caught by fishing operations. Catch should include all fish killed by the act of fishing, not just those landed; 3. The component of fish encountering fishing gear, which is retained by the gear.

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Comment: The catch is usually expressed in terms of wet weight. It refers sometimes to the total amount caught, and sometimes only to the amount landed. The fish which are not landed, but returned to the sea, are called discards.

Closed Season - Seasonal closure. The banning of fishing activity (in an area or of an entire fishery) for a few weeks or months, usually to protect juveniles or spawners.

Community - The populations that live and interact physically and temporally in the same area.

D Directed Fishery - Fishing that is directed at a certain species or group of species. This applies to both sport and commercial fishing.²

E Ecosystem - A geographically specified system of organisms, the environment, and the processes that control its dynamics. Humans are an integral part of an ecosystem.

Ecosystem Approach to Management (EAM) - Management that is adaptive, is specified geographically, takes into account ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse social objectives.

Ecosystem Assessment - A social process through which the findings of science concerning the causes of ecosystem change, their consequences for human well-being, and management and policy options are brought to bear on the needs of decision makers.

Ecosystem Function - An intrinsic ecosystem characteristic related to the set of conditions and processes whereby an ecosystem maintains its integrity. Ecosystem functions include such processes as decomposition, production, nutrient cycling, and fluxes of nutrients and energy.

Ecosystem Health - A measure of the stability and sustainability of ecosystem functioning or ecosystem services that depends on an ecosystem being active and maintaining its organization, autonomy, and resilience over time. Ecosystem health contributes to human well-being through sustainable ecosystem services and conditions for human health.

Ecosystem Services - Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services, such as food and water; regulating services, such as flood and disease control; cultural services, such as spiritual and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth.

Endemism - Of or relating to a native species or population occurring under highly restricted conditions due to the presence of a unique environmental factor that limits its distribution.

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Essential Fish Habitat (EFH) - Congress defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. 1802(10)). The EFH guidelines under 50 CFR 600.10 further interpret the EFH definition as follows: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Estuarine - 1. Relating to, or formed in an estuary (e.g. estuarine currents; estuarine animals); 2. Belonging to an estuary (river mouth), an area in which sea water is appreciably diluted by fresh water from rivers.

Estuary - A coastal ecological ecosystem that is partially enclosed, receives freshwater input from land, and has a horizontal fresh-salt salinity gradient; the average salinity of estuarine waters is defined as being 30 practical salinity units (PSU) for at least 1 month per year.

Eutrophication - Generally, the natural or man-induced process by which a body of water becomes enriched in dissolved mineral nutrients (particularly phosphorus and nitrogen) that stimulate the growth of aquatic plants and enhances organic production of the water body. Excessive enrichment may result in the depletion of dissolved oxygen and eventually to species mortality.

F Fecundity - The potential reproductive capacity of an organism or population expressed in the number of eggs (or offspring) produced during each reproductive cycle. Fecundity usually increases with age and size. The information is used to compute spawning potential.

Fisher - A gender-neutral name for a person (male or female) participating in a fishery.

Finfish - Vertebrate and cartilaginous fishery species, not including crustaceans, cephalopds, or other mollusks.

Fish - Used as a collective term, includes mollusks, crustaceans and any aquatic animal which is harvested.

Fishery - 1. Generally, a fishery is an activity leading to harvesting of fish. It may involve capture of wild fish or raising of fish through aquaculture; 2. A unit determined by an authority or other entity that is engaged in raising 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

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activities; 3. The combination of fish and fishers in a region, the latter fishing for similar or the same species with similar or the same gear types.

Fishing - Any activity, other than scientific research conducted by a scientific research vessel, that involves the catching, taking, or harvesting of fish; or any attempt to do so; or any activity that can reasonably be expected to result in the catching, taking, or harvesting of fish and any operations at sea in support of it.

Food Chain - The transfer of energy from the source in plants through a series of organisms with repeated eating and being eaten. At each transfer, a large proportion of the potential energy is lost as heat. The shorter the food chain (or the nearest the organism is from the beginning of the food chain), the greater the available energy which can be converted in biomass.

Fork Length - A measurement used frequently for fish length when the tail has a fork shape. Projected straight distance between the tip of the snout and the fork of the tail.

H Habitat - 1. The environment in which the fish live, including everything that surrounds and affects its life, e.g. water quality, bottom, vegetation, associated species (including food supplies); 2. The locality, site and particular type of local environment occupied by an organism.

Health - The condition of the marine environment from the perspective of adverse effects caused by anthropogenic (human) activities, in particular habitat destruction, changed sedimentation rates and the mobilization of contaminants. Such condition refers to the contemporary state of the ocean, prevailing trends, and the prognosis for improvement or deterioration of its quality.

Hook and Line - A type of fishing gear consisting of a hook tied to a line. Fish are attracted by natural bait that is placed on the hook, and are impaled by the hook when biting the bait. Artificial bait (lures) with hooks are often used. Hook-and-line units may be used singly or in large numbers.

I Introduced Species - With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem. Introduced species often compete with and cause problems for native species. Introduced species are also called exotic, nonnative, and alien species.

Invasive species - An introduced species that out-competes native species for space and resources.

Invertebrate - Animals without a backbone. In fishery management terms, refers to shellfish, including lobsters, clams, shrimps, oysters, crabs, and sea urchins.

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L License - Also known as permit. A license or permit is a document giving the producer the right to operate in a fishery according to the terms established by the regulating authority.

M Macrofauna - Large animals (for example fish).

Maturity - Refers to the ability, on average, of fish of a given age or size to reproduce. Maturity information, in the form of percent mature by age or size, is often used to compute spawning potential.

Migration - 1. Systematic (as opposed to random) movement of individuals of a stock from one place to another, often related to season. A knowledge of the migration patterns helps in targeting high concentrations of fish and managing shared stocks; 2. The movements of fish from feeding ground to spawning ground and back again, from nursery ground to feeding ground, and from spawning ground to nursery ground.

Morphometrics - The physical features of a fish (coloration for example); differences may be used to identify separate fish populations.

Mortality - Measures the rate of death of fish. Mortality occurs at all life stages of the population and tends to decrease with age. Death can be due to several factors such as pollution, starvation, and disease but the main source of death is predation (in unexploited stocks) and fishing (in exploited ones).

N Native Species - A local species that has not been introduced.

Non-Point Sources - Sources of sediment, nutrients, or contaminants that originate from many locations.

O Otolith - The ear bone of a fish. Otoliths have rings on them like the rings on a tree stump, and are used to find the age of the fish and its growth rate.

P Point Source - A source of sediment, nutrients, or contaminants into a water body that comes from one discharge location.

Pollution - 1. The introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life; hazards to human health; hindrance to marine activities, including fishing and other legitimate uses of the sea; impairment of quality of sea water; and reduction of amenities; 2. Presence of substances and heat in environmental media (air, water, land) whose nature, location, or quantity produces undesirable environmental effects; 3. Activity that generates pollutants.

Population - The number of individuals of a particular species that live within a defined

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area.

Predation - Relationship between two species of animals in which one (the predator) actively hunts and lives off the meat and other body parts of the other (the prey).⁵

R Recreational Fishery - Harvesting fish for personal use, sport, and challenge (e.g. as opposed to profit or research). Recreational fishing does not include sale, barter, or trade of all or part of the catch.

Recruit - 1. A young fish entering the exploitable stage of its life cycle; 2. A member of “the youngest age group which is considered to belong to the exploitable stock.”

Resilience - Capacity of a natural system (fisheries community or ecosystem) to recover from heavy disturbance such as intensive fishing.

Resources - 1. A natural source of wealth and revenue. Biological resources include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use of value for humanity. Fishery resources are those resources of value to fisheries; 2. Anything that has value; living and nonliving components of nature such as fish, oil, water, and air.

Riparian - Living on or near the bank of a river or lake.

Riparian Habitat - Areas adjacent to rivers and other water bodies that have a high density and large variety of plants and animal species relative to nearby uplands.

River Plume - Turbid freshwater flowing from land and generally in the distal part of a river (mouth) outside the bounds of an estuary or river channel.

Runoff - Portion of rainfall, melted snow, or irrigation water that flows across the ground’s surface and is eventually returned to streams. Runoff can pick up pollutants from air or land and carry them to receiving waters.

S Salt Marsh - A macrohabitat comprised of emergent rooted macrophytes in a soft sedimentary substrate tolerant of long periods of partial submersion along the shores of estuaries and sheltered coasts.

Social Costs - Costs associated with the disruption of communities, households, and related social structures resulting in the loss of human potential.

Social Costs and Benefits - Costs & benefits as seen from the perspective of society as a whole. These differ from private costs & benefits in being more inclusive (all costs & benefits borne by some member of society are taken into account) and in being valued at social opportunity cost rather than market prices, where these differ. Sometimes termed “economic” costs & benefits. Compare private costs and benefits.

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Spawning - Release of ova, fertilized or to be fertilized.

Spawning Substrate - The type of bottom habitat required by a fish species for spawning.

Species - Group of animals or plants having common characteristics, able to breed together to produce fertile (capable of reproducing) offspring, and maintaining their “separateness” from other groups.

Species Assemblage - Group of species co-occurring in a given area and likely to be caught together in a given gear.

Species Diversity - The variety of species in a community, which can be expressed quantitatively in ways which reflect both the total number of species present and the extent to which the system is dominated by a small number of species.

Species Group - Group of species considered together, often because they are difficult to differentiate without detailed examination (very similar species) or because data for the separate species are not available (e.g. in fishery statistics or commercial categories).

Species Richness - Species richness/abundance is the distribution of the number of species and the number of individuals of each species in a community.

Stakeholder - 1. A large group of individuals and groups of individuals (including governmental and non-governmental institutions, traditional communities, universities, research institutions, development agencies and banks, donors, etc.) with an interest or claim (whether stated or implied) that has the potential of being impacted by or having an impact on a given project and its objectives. Stakeholder groups that have a direct or indirect “stake” can be at the household, community, local, regional, national, or international level; 2. An actor having a stake or interest in a physical resource, ecosystem service, institution, or social system, or someone who is or may be affected by a public policy.

Stocking - The practice of putting artificially reared young fish into a sea, lake, or river. These are subsequently caught, preferably at a larger size.

Subsistence Fishery - A fishery where the fish caught are shared and consumed directly by the families and kin of the fishers rather than being sold at the next larger market.

Surface Runoff - The flow across the land of water that accumulates on the land surface when the rainfall rate exceeds the infiltration capacity of the soil.

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Surface Water - All water naturally open to the atmosphere, including rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, and so on. The term also covers springs, wells or other collectors of water that are directly influenced by surface waters.

Sustainable Fishing - Fishing activities that do not cause or lead to undesirable changes in the biological and economic productivity, biological diversity, or ecosystem structure and functioning from one human generation to the next.

Comment: Fishing is sustainable when it can be conducted over the long-term at an acceptable level of biological and economic productivity without leading to ecological changes that foreclose options for future generations.⁵

T Tagging - Marking an individual or group of individuals (e.g. by clipping a fin, injecting a dye, inserting a tag) in order to identify it when recaptured. Tagging allows the study of growth, mortality, and migration as well as the estimation of the stock size.

Target Species - Those species primarily sought by the fishermen in a particular fishery. The subject of directed fishing effort in a fishery. There may be primary as well as secondary target species.

Total Maximum Daily Load - The amount of pollutant that a water body can receive and still meet water quality standards. Set by the Environmental Protection Agency.

W Water Pollution - Presence in water of harmful and objectionable material—obtained from sewers, industrial wastes, and rainwater runoff—in sufficient concentrations to make it unfit for use.

Water Quality - The chemical, physical, and biological characteristics of water in respect to its suitability for a particular purpose.

Water Quality Criteria - Specific levels of water quality desired for identified uses, including drinking, recreation, farming, fish production, propagation of other aquatic life, and agricultural and industrial processes.

Water Resources - Water usable as inputs for economic production and livelihoods. A distinction is made between renewable and nonrenewable water resources. Nonrenewable water resources are not replenished at all or for a very long time by nature. This includes the so-called fossil waters. Renewable water resources are rechargeable due to the hydrological cycle unless they are overexploited, comprising groundwater aquifers and surface water like rivers and lakes.

Watershed - The areas which supplies water by surface and subsurface flow from rain to a given point in the drainage system.

Wetland - Partially or permanently flooded, soft bottom flat that is vegetated by vascular plants.