

# Glossary

**Abiotic:** non-living.

**Acheulean:** archaeological term relating to a period when hand-axe industries were widespread about 1.5 million to 150 000 years ago.

**Adaptive co-management:** similar to adaptive management but with greater emphasis on shared decision-making and authority.

**Algoa Group:** geological formations which range in age from 41 million years to 100 000 years ago.

**Adaptive governance:** flexible and learning-based governance processes involving both state and non-state actors, often at multiple levels, with the aim to adaptively negotiate and coordinate management of social-ecological systems.

**Adaptive management:** a decision approach for uncertain circumstances, systematically linking learning with implementation.

**Alien species:** a species not naturally occurring in a defined area but introduced into that area from elsewhere.

**Amphipods:** bilaterally compressed crustaceans of the order Amphipoda.

**Anomura:** decapod crustaceans that include burrowing prawns.

**Anoxic:** devoid of oxygen.

**Anthropocene:** the epoch in which human activities impacted enough to constitute a distinct geological and ecological change.

**Anthropogenic:** caused by humans.

**Archaeology:** The study of the ancient and recent human past through material remains.

**Avifauna:** bird life.

**Bathymetry:** depth profile or bottom contours of a water body obtained by measurements from the surface.

**Benthic:** living on the bottom.

**Biodiversity:** the variety of plant and animal species in an area.

**Biofilm:** an assemblage of surface-associated microbial cells that stick to each other within a slimy matrix.

**Biogeographic:** the geographic distribution of plants, fishes, birds, mammals and other forms of life.

**Biomass:** the mass of living matter present.

**Biotic:** living (characteristics).

**Bivalves:** common name for a large class of molluscs that have a soft body enclosed in a calcareous two-part shell.

**Brachyura:** true crabs.

**Cape Supergroup:** a sedimentary succession of Palaeozoic age rock layers in the Cape Fold Belt.

**Carnivorous:** flesh eating.

**Cenozoic:** the current geological era, representing the last 66 million years of Earth's history.

**Cephalopoda:** a class of molluscs, the members of which have distinct heads, e.g. squid and octopus.

**Common name:** an informal vernacular name for an organism.

**Common pool resource:** relatively large systems (e.g. groundwater basins, fishing grounds) that face potential overuse and conflict by multiple users.

**Community:** populations of different organisms living together in a particular environment.

**Competition:** use or defense of a resource by one individual that reduces the availability of that resource to other individuals.

**Copepoda:** a subclass of minute crustaceans which usually form part of the zooplankton.

**Complex systems:** systems that are characterised by unpredictable behaviour because their constituent parts interact in an interdependent and evolving manner.

**CPUE:** Catch Per Unit of fishing Effort.

**Crustaceans:** a large group of mostly aquatic invertebrate animals such as shrimps and crabs.

**Detritivorous:** feeding primarily on detritus.

**Detritus:** particles of decaying plant and animal material, and associated micro-organisms.

**Diatoms:** unicellular algae with walls impregnated with silica.

**Ecosystem:** a natural system of interacting organisms and their environment.

**Eelgrass:** an underwater flowering plant belonging to the genus *Zostera* (also known as seagrass).

**Elasmobranchs:** cartilaginous fishes, including all modern sharks and rays.

**Embryo:** the developing organism either within the egg envelope or hatched, and which is dependent on egg yolk for nourishment.

**Endemic:** organisms that are limited to a particular geographic region.

**Environment:** surroundings of an organism, including the plants and animals with which it interacts.

**Epifauna:** animals found on the surface of any substratum.

**Epiphyte:** non-parasitic plants which live on the surface of other plants.

**Episodic floods:** large river floods which occur irregularly.

**Estuarine fish species:** fishes which breed in estuaries and spend most or all of their life-cycle within the estuarine environment.

**Estuary:** that part of a river system closest to the sea and where salinities can fluctuate considerably.

**Euryhaline:** the ability of an organism to tolerate wide-ranging salinities.

**Eutrophication:** enrichment of water bodies, primarily caused by sewage and runoff from fertilized agricultural land.

**Filamentous:** thin and thread-like.

**Food chain:** a continuum of organisms in which each is the food of one or more subsequent members of the chain.

**Food web:** a system of inter-relating food chains.

**Garden Route:** section of coast between Humansdorp and Mossel Bay.

**Gastropoda:** molluscs with a ventral muscular disc adapted for creeping.

**Geomorphology:** study of the physical features of the earth's surface and their relation to its geological structures.

**Gills:** the breathing organs of fishes consisting of vascularised filaments attached to the gill arches.

**Glacial period:** a period when ice sheets were unusually extensive across the Earth's surface.

**Gonads:** reproductive organs.

**Governance:** the social context (e.g. rulemaking, assigning of responsibilities) that enables management.

**Habitat:** the specific environment of an organism.

**Halocline:** a layer of water exhibiting a steep salinity gradient.

**Heads:** The rocky headlands on either side of the Knysna Estuary mouth.

**Headwaters:** The portion of the estuary that is strongly influenced by river flow.

**Herbivorous:** feeding on plants.

**Hermaphrodite:** an organism possessing both male and female reproductive organs.

**Holocene:** period that covers the last 10 000 years.

**Hominin:** the group consisting of modern humans, extinct human species and all our immediate ancestors.

**Hydrography:** scientific study of water bodies.

**Ichnology:** the study of trace fossils.

**Ichthyofauna:** the assemblage of fishes in a particular area.

**Ichthyology:** the scientific study of fishes.

**Interglacial period:** geological interval of warmer global average temperature lasting thousands of years.

**Intertidal:** between the high-tide and low-tide levels on the shore.

**Invertebrates:** any animal which lacks a vertebral column or backbone.

**Isopoda:** dorsoventrally flattened crustaceans.

**Jurassic Period:** extending from 201 to 145 million years ago.

**Juvenile:** young organism essentially similar to the adult form.

## Knysna Estuary—Jewel of the Garden Route

**Lagoon:** The section of the Knysna Estuary between the rail bridge and the road bridge.

**Larva:** a developing organism after hatching from the egg, which has begun to feed itself and is not solely dependent on egg yolk for nourishment.

**Littoral:** at or near the shore of a water body.

**Lower reaches:** the lower longitudinal section of an estuary.

**Macrophytes:** large plants.

**Management:** the operationalization of a collective vision through resource allocation to implement selected actions and initiatives.

**Marine fish species:** fishes which breed at sea and spend most or all of their life-cycle in the marine environment.

**Marine stragglers:** marine fish species which rarely enter estuaries.

**Meiofauna:** microscopic or semi-microscopic animals that inhabit sediments.

**Meroplankton:** planktonic larval stages of organisms that are often benthic as adults.

**Mesozoic Era:** the geological era between 252 and 66 million years ago.

**Microalgae:** unicellular plants.

**Middle reaches:** the middle longitudinal section of an estuary.

**Microphytobenthos:** benthic microalgae.

**Microtidal:** applied to coastal areas or estuaries in which the tidal range is less than 2 m.

**Middle reaches:** the middle longitudinal section of an estuary.

**Migration:** coordinated movement of animals from one place to another.

**Mollusca:** invertebrates mostly distinguished by the presence of a hard, calcareous external shell.

**Morphology:** the study of shape or form.

**Mucus:** a viscous or slimy fluid secreted by the skin of many fishes.

**Neap tide:** smallest tidal range experienced due to the sun's gravitational forces acting against those of the moon.

**Nutrient:** any substance required by organisms for normal growth and maintenance.

**Oligotrophic:** waters with a limited supply of nutrients and hence a reduced organic production.

**Omnivorous:** feeding on a wide variety of foods including plants and animals.

**Organic matter:** carbon compounds derived from plants and animals.

**Osteichthyes:** class of bony fish.

**Otolith:** a calcium carbonate structure in the inner ear of bony fishes.

**Palaeo-Agulhas Plain:** a southern Cape plain, now inundated by the sea, that was occupied by humans and vast herds of herbivores during recent global ice ages.

**Palaeozoic:** an era which began 570 million years ago and lasted 345 million years.

**Palaearctic:** the large biogeographic realm stretching across all of Eurasia north of the Himalayas.

**Parasite:** an organism living on or in another and being nourished by it.

**Pelagic:** organisms living in open water, especially near the surface.

**Periphyton:** Biotic material found on, or attached to, the submerged parts of aquatic plants.

**Phytoplankton:** microscopic plants drifting in the plankton.

**Piscivorous:** feeding primarily on fish.

**Planktivorous:** feeding primarily on plankton.

**Plankton:** mainly microscopic floating organisms that drift more or less passively within the water column.

**Pleistocene:** the geological epoch that lasted from about 2 580 000 to 11 700 years ago.

**Polychaeta:** a segmented marine worm with bristles.

**Postflexion larva:** developmental stage of a fish from formation of the caudal fin to attainment of fin rays and scales.

**Preflexion larva:** developmental stage beginning at hatching and ending with commencement of upward flexion of the notochord.

**Prey:** animals that are the food of predators.

**Primary production:** the production of organic matter from inorganic materials by autotrophic organisms such as plants.

**Red Data Book:** world's most comprehensive inventory of the conservation status of biological species.  
**Resource:** a substance or object required by an organism for normal maintenance, growth and reproduction.

**Sea level:** level continuous with that of the sea, half-way between high and low tide.

**Seine net:** a net, hanging from floats and having a central bag and equal-sized wings, that can be pulled through the water and onto the shore.

**Semi-diurnal tides:** tides with two high and two low waters during a tidal day (24 hours and 50 minutes).

**Social-ecological system:** referring to combined or intertwined human and nature systems across a range of scales, from a small river basin to the planet.

**Southern Cape:** the coastline between Cape St Francis in the east and Cape Agulhas in the west.

**Species:** a particular kind of organism; the fundamental taxonomic unit.

**Species diversity:** the variety (usually number of taxa) of species in a community or area.

**Spring tide:** maximum tidal amplitude during the new and full moon periods.

**Standard length (SL):** the length of a fish from the tip of the snout to the base of the tail.

**Stenohaline:** species which cannot tolerate a wide range of salinities during their life histories.

**Stone Age:** prehistoric period (2.6 million to 3 000 years ago) when stone tools were used by humans.

**Strategic Adaptive Management (SAM):** a brand of adaptive management tailored by SANParks to respond to local challenges arising from interdependent social and ecological systems that interact in unpredictable ways.

**Stratification:** a word used to describe a layered water body.

**Substratum:** a bottom surface of a habitat.

**Subtidal:** below the lowest level on the shore reached by the tides.

**Supratidal:** above the level on the shore reached by the tides.

**Table Mountain Sandstone:** predominantly quartzitic sandstone laid down between 510 and 400 million years ago.

**Taxon:** any taxonomic unit (e.g. family, genus, species).

**Thermocline:** a relatively narrow layer of water with a steep temperature gradient across it.

**Tidal prism:** the difference between the volume of water (in an estuary) at high tide and that at low tide.

**Trace fossil:** a fossil record of biological activity but not the preserved remains of the plant or animal itself.

**Trophic group:** a group of consumers that feed at a similar trophic level.

**Turbid:** descriptive of water which is muddy or murky due to the presence of suspended particles.

**Ungulate:** a hoofed mammal.

**Upper reaches:** the upper longitudinal section of an estuary.

**Upwelling:** a process whereby deeper, cold waters, rise to the surface as a result of the combined effects of wind, ocean currents and the Earth's rotation.

**Warm-temperate region:** the coastal area and estuaries between the Mbashe Estuary and Cape Point.

**Water column:** the body of water between the bottom and surface.

**Zoobenthos:** bottom-dwelling animals.

**Zooplankton:** minute animals drifting in the water column.