

**A:**

**A-Horizon**; Horizon of soil just underneath the O-horizon if present; highest of soil layers in amount of organic matter present.

**Abiotic**; Nonliving elements of the environment with which organisms interact.

**Abys**; Deep ocean environment from 2,000 to 5,000 meters below the surface (6,000 to 15,000 feet).

**Abyssal Plain**; Nearly flat region of the deep sea floor.

**Abyssopelagic**; Open water environment from a depth of 4,000 to 6,000 meters (13,000 to 20,000 feet).

**Acclimate**; Become used to existing environmental conditions of a new site.

**Accurate**; Free from errors.

**Acetylene**; Colorless flammable gas used as a fuel in welding and an added material in tire making.

**Acid**; Solution that has an excess of hydrogen ions.

**Acid Rain**; Rain that becomes acidic after falling through and dissolving air pollutants, primarily sulfur and nitrogen compounds.

**Acid Soil**; Soil type that has a pH lower than 7.0.

**Acquired Immune Deficiency Syndrome (AIDS)**; A condition of deficiency in white blood cells, resulting in infection, cancer, etc.

**Active Listening**; Careful listening and note taking in order to fully comprehend in class presented course information.

**Active Reading**; Organized patterns of reading designed to develop reading notes and to stay current or slightly ahead of class discussions.

**Adapt**; Make fit or suitable by changing.

**Adaptation**; Feature of an organism that helps it survive in its environment.

**Adventitious Root**; Root occurring in unusual places, such as growing from a tree branch or trunk.

**Aerial Plant**; Plants such as orchids and ferns which often grow on other plants; epiphytes.

**Aesthetics**; Philosophy of art and beauty.

**Agenda 21**; International Treaty from the Rio Summit encouraging biodiversity protection efforts.

**Aggregate, Market**; Broad combinations of market demand and supply curves. Used to predict how major changes in the economy will affect the prices and quantities of all goods and services produced in an economy.

**Aggregate, Soil**; See 'crumb'.

**Aggrieved Party**; Defined in CRM Program to include adjacent land owners or person who attended a CRM public hearing or submitted written testimony, but isn't satisfied with the permit decision and seeks to appeal it.

**Agriculture**; Growing of any crops for food, fiber, and other purposes.

**Agroforestry**; Growing of trees for food, fiber, and other purposes.

**Ahermatypic Coral**; Usually deep water living corals; do not have zooxanthellae symbionts; do not build reefs.

**Air**; Invisible mixture of gases surrounding the earth.

**Air Layering**; Method of plant propagation in which roots are encouraged to grow on branches, then rooted branches at cut and transplanted.

**Air Pollutant**; Polluting compound that fouls air including carbon monoxide gas, hydro-carbons, particles, sulfur compounds, nitrogen compounds, and dust.

**Alarm Pheromones**; Chemical messengers produced by aphids.

**Alate**; Having wings.

**Algae**; Simple plants, mostly living in water.

**Alien Species**; Accidentally or intentionally introduced nonnative species.

**Alkaline**; Substance that has an excess of hydroxyl ions (OH), has a bitter taste and neutralizes acid.

**Alluvium**; Sediments, plant materials, etc. moved downstream by a river.

**Aluminum (Al)**; Silver white, malleable, ductile, light metallic element that is the most abundant metal in the earth's crust. Aluminum can be easily and cost effectively recycled.

**Ambient or Water Quality-based Standard**; Numeric value used to monitor water quality using criteria established by the US Environmental Protection Agency.

**Ammonia**; Colorless, gaseous, compound of nitrogen and hydrogen.

**Ammonium**; Ion or chemical group derived from ammonia by combination with hydrogen.

**Amoeba**; Free living or parasitic, single celled protozoan. Move with pseudopodia or false feet. Related to foraminiferans but do not have shells. Parasitic form causes amoebic dysentery.

**Amplitude**; Extent of oscillation of a wave or pendulum.

**Anaerobic Decay**; Decay that occurs without the presence of oxygen.

**Analysis**; Breaking up of a whole into its parts to find out its nature. Examine in detail.

**Andesite**; Fine grained rock resembling granite with little or no quartz and has some grayish plagioclase feldspar and dark ferro-magnesium minerals.

**Andesite Line**; Boundary lines of continental and oceanic crusts.

**Anemone**; Soft bodied sessile cnidarian. Relative of corals but do not secrete limestone.

**Annual**; Plant that lives for less than one year before forming seeds and dying back.

**Anomaly**; Something that deviates from the general rule.

**Antennae**; Jointed attachments to an arthropod's head; these are used to detect chemicals and other features

of the environment.

**Anthropology**; Social science of the study of human beings and human groupings, esp. their physical characteristics, origins, distribution of races, environment and social relationships, and cultures.

**Antitherbivore Compound**; Chemical compound in the tissues of some plants designed to discourage herbivorous animals from consuming it.

**Apex predator**; Highest predator of a food pyramid.

**Aphanitic**; Rock which is so closely grained that its individual crystals cannot be seen by the unaided eye.

**Aphotic**; Area of a body of water below the level penetrated by all light.

**Apterous**; Having no wings or wing-like structures.

**Aquifer**; Water-bearing strata of permeable rock, sand, or gravel.

**Arbitrary**; Not fixed by rules but left to one's judgment. Based on whim.

**Arboreal**; Tree living.

**Archeology**; The scientific study of historic or prehistoric peoples and their cultures by analysis of their artifacts, inscriptions, monuments, and other such remains, esp. those that have been excavated.

**Archeozoic**; Early Precambrian Era.

**Argument**; Reason or reasons for or against something. A sequence of one or more logical premises and a logical conclusion.

**Arrow Worm**; Member of the Phylum Chaetognatha. Planktonic invertebrates characterized by a streamlined, transparent body.

**Arthropod**; Invertebrate animal with jointed limbs. This group includes insects, crustaceans and spiders.

**Asbestos**; Nonconducting fireproof material used in electrical insulation, roofing materials, etc.

**Ash**; Fine dust blown out of a volcano during an eruption.

**Association, Biological**; Group of plants, often of several species or genera, living together in the same environment and exhibit a basic uniformity.

**Asthenosphere**; Zone within the earth some distance below the surface which consists of weak material subject to plastic deformation, underlying the stronger, more solid lithosphere.

**Astringent**; Able or tending to shrink bodily tissues.

**Atmosphere**; Gases held around a planet or satellite by its gravitational force.

**Atmospheric Humidity**; Water vapor present in the atmosphere.

**Atoll**; Circular or similarly shaped coral reef growing on top of a sunken volcano.

**Atom**; Smallest part of an element that still has the characteristics of that element.

**Aufwuch**; Aquatic organisms that grow attached to other things, such as plants, rocks, etc., particularly freshwater organisms.

**Autotroph**; Organism that makes organic compounds from inorganic substances in its environment.

**Awn**; A type of elongated seed with pointed ends for catching onto fur or clothing. Example, seed awn of *Bidens alba*.

## **B**;

**B-Horizon**; Horizon of soils just underneath the A-horizon; high in clays and leached of nutrient minerals but high in non-nutrient iron and aluminum oxides.

**Bacilli**; Rod shaped bacteria.

**Badland**; Area of barren land with bare rocks and dry infertile soil.

**Bag Limit**; Maximum limit of daily or seasonal take of hunted game species according to permit provisions or legal requirements.

**Baitfish**; Fish used as bait to catch larger fish.

**Balance of Nature**; Natural population control by organisms competing with one another and by natural selection.

**Baleen Whale**; Toothless whale that obtains its nutrition by sieving water with plankton and small organisms through fine-meshed baleen plates.

**Barometer**; Instrument that measures air pressure.

**Barrier Reef**; Large arcing reef growing away from a mainland though attached at end points; often has a lagoon or moat between it and the shore.

**Barter**; To trade by exchange of goods and sometimes services without an exchange of money.

**Basal Groundwater**; Thin layer of fresh groundwater that is in contact with underlying seawater.

**Basalt**; Igneous rock, black in color and very fine grained, which comes from a volcano or spreading center.

**Base Pair**; Bases that pair up in a DNA molecule. Adenine pairs with Thymine. Guanine pairs with Thymine.

**Basic Soil**; Soil type that has a pH higher than 7.0.

**Bathyal**; Ocean zone between a shelf break and a depth of 4,000 meters (13,000 feet).

**Bathymetry**; Science of measuring the depths of the oceans, seas, etc.

**Bathypelagic**; Open ocean environment from a depth of 1,000 meters to 4,000 meters (3,000 to 13,000 feet).

**Beach**; Location along a shoreline with sand or gravel substrate material.

**Bedrock**; Solid rock underlying surface materials (such as soil).

**Bench**; Terrace along the bank of a body of water, often marking a former shoreline.

**Benthos**; Organisms that live on the bottom of a body of water or in the bottom sediments.

**Best Available Technology**; U.S. Environmental Protection Agency rule concerning new plant construction and major refits, which mandates the use of technologies shown to be most effective in controlling pollution.

**Billboard**; Very large outdoor signboard.

**Binomial Nomenclature**; System of classification in which species are always referenced by two name the genus name and the specific epithet.

**Bioaccumulation, Bioamplification**; Terms used to indicate the increase of a toxin's level of concentration as it increases up a food chain.

**Biochemistry**; Chemistry that deals with the chemical compounds and processes occurring in living things.

**Bioclastic**; Formed by living organisms such as limestone sands.

**Biocontrol**; Another way to say "biological control"; the control of a pest by using another organism.

**Biocontrol Agent**; Organism that is used to control pest organisms.

**Biodegradable**; Capable of being broken down into simpler objects by the actions of living things (decomposers).

**Biodiversity**; Biological diversity in an environment as indicated by numbers of different species of plants and animals.

**Bioerosion**; Erosion of shoreline rock and reef structures caused by living organisms.

**Bioerosional Notch**; Notch in seashore coast caused by bioerosion.

**Biogeochemical Cycles**; Cycling of minerals and nutrients within the earth's biosphere.

**Biogeochemistry**; The study of the relationship between the geochemistry of a region and the animal and plant life in that region.

**Bioherm**; Reef-like mass or mound of limestone built by organisms as corals and surrounded by rock of a different kind.

**Biological Classification**; See 'classification'.

**Biological Hierarchy**; Order of grouping of biological organisms. Domain, Kingdom, Phylum or Division, Class, Order, Family, Genus, Specific or Trivial Epithet.

**Biological Insecticides**; Insect diseases (bacteria, viruses and fungi) that control insects.

**Biological Magnification**; See 'biomagnification'.

**Biological Monitoring**; Monitoring of living organisms & their associated habitats.

**Biological Treatment**, as in **Sewage Treatment**; Removal of water pollutants from sewage through the growth and harvesting of bacterial cells.

**Biology**; Science of life and life processes.

**Bioluminescent**; See 'luminescent'.

**Biomagnification**; Increased concentration of non-biodegradable chemicals in the higher levels of a food chain.

**Biomass**; Total mass or amount of living organisms in a particular area or volume.

**Biotic**; Living aspects of the environment with which organisms interact.

**Birth Rate**; Number of births in a population compared against a time increment.

**Black Death**; Deadly disease, probably bubonic plague, which devastated Europe and Asia human populations in the 14th century.

**Bleaching**; Whiten or blanch; discoloring of cnidarians due to loss of zooxanthellae.

**Bonito**; Any of several saltwater fishes related to the tuna.

**Botanist**; A scientist who specializes in the study of plants.

**Botanical Insecticides**; Insecticides that are extracted from plants.

**Brackish Water**; Water that is saltier than freshwater but not as salty as sea water.

**Breaker**; Wave that breaks into foam on a reef or shore.

**Broadcast Spawner**; Type of fish that releases eggs into the water column rather than at a particular nest area.

**Brown Treesnake**; *Boiga irregularis*. Nocturnal voracious predator of birds, lizards, and rodents. Accidentally introduced to Guam in the late 1950's and is a significant ecological and economic threat to the CNMI.

**Bryophyte**; Any member of the plant kingdom consisting of mosses or liverworts.

**Bud**; Shortened, immature section of a stem.

**Building, Historic**; Historic Manmade construction created to shelter any form of human activity.

**Buoyancy**; Ability to float. Having an overall density the same or less than the water (or air) that the object is in.

**Buttress**, referring to **tree trunks**; Supporting flares of a tree trunks' base to add extra support in shallow tropical soils.

## **C:**

**C-Horizon**; Soil horizon below the B-horizon, just above the parent material.

**Calcareous Algae**, also called **Coralline Algae**; Marine alga which secretes limestone as part of its metabolic processes.

**Calcification**; Deposition of calcium carbonate salts in body tissues.

**Calcite**; Crystalline mineral deposit formed by the evaporation of water from calcium carbonate-containing groundwater.

**Calcium (Ca)**; Silver white chemical element naturally occurring only in combination.

**Calcium Carbonate (CaCO<sub>3</sub>)**; Chemical name for the mineral calcite. Formed by corals and seashell making organisms.

**Caldera**; Crater or depression at the top of a volcano formed when rock at the top sinks or explodes away, or

when the volcano

collapses into the empty magma chamber.

**Calorie**; Amount of heat required to raise the temperature of 1 gram of water 1 degree Celsius.

**Calyx, (Coral)**; Limestone cup of first coral polyp.

**Calyx, (Flower)**; Usually green, outer part of a flower consisting of petals.

**Cambrian**; First geologic period in the Paleozoic era marked by a profusion of invertebrate animals, especially trilobites and brachiopods.

**Canopy**; Top layer of a forest. Formed by the interconnecting crowns of trees.

**Capillary Action**; Force from the combination of adhesion, cohesion, and surface tension in liquids which are in contact with solids, especially tube-shaped solids such as plant vascular cells.

**Capitalism**; Economic systems in which the means of production and distribution are privately owned and operated for profit.

**Capitalist**; Owner of wealth used in business. Also includes person who are not wealth owners but who are strong proponents of the political-economic philosophy and processes of capitalism.

**Capricious**; Tending to change abruptly and without apparent reason. Erratic.

**Carapace**; Shield-like structure that covers the front portion of many crustaceans. Also the shell of a sea turtle.

**Carbohydrate**; Organic molecule that contains rings and chains of carbon with hydrogen and oxygen molecules attached to them.

**Carbon (C)**; Element that is an essential part of all organic compounds.

**Carbon Cycle**; Movement of carbon through the earth's biosphere.

**Carbon Dioxide (CO<sub>2</sub>)**; Heavy odorless gas formed in animal respiration or decomposition.

**Carbon Monoxide Gas (CO)**; Colorless odorless gas caused by incomplete combustion. Gas is poisonous in concentrations higher than allowed by law; causes carboxyhemoglobin biological effects.

**Carbonic Acid**; Weak acid that decomposes readily into water and carbon dioxide.

**Carcinogen**; A substance that causes cancer.

**Card Catalogue**; Storage place where one obtains details on library's holdings. Includes numerous small cards with book author, title, and subjects, along with key search information.

**Carnivore**; Organism that obtains its nutrition by feeding on animals.

**Cartel**; Combination of independent business enterprises designed to limit competition.

**Cartilaginous Fish**; Any of the Class Chondrichthyes, such as a shark or ray, having a skeleton made of cartilage.

**Catalytic Converter**; Automobile exhaust control device that chemically changes hydrocarbons and carbon monoxide in the exhaust into carbon dioxide and water vapor.

**Catch Per Unit Effort (CPUE)**; Total catch, divided by the number of poles used, multiplied by the number of hours fished.

**Caterpillar**; Larva of butterflies and moths.

**Catholicism**; Roman Catholic Church Christian doctrine.

**Cave**; Natural underground chamber open to the surface.

**Cavern**; Cave that is especially large or of unknown size.

**Cavity Nester**; Bird or small animal that nests in holes of trees and crevices in rocks.

**Cay, Coral or sandy islet**; Low island atop a coral reef or sand bank off of a mainland. Managaha Island is an example of a coral sand cay.

**Cease and Desist Order**; Mandate by a government official authorized to issue it that causes activities that are believed to be illegal to immediately stop pending a further formal administrative review hearing.

**Cell**; Smallest unit of living organisms. Component of a biological tissue.

**Celsius**; See 'centigrade or celsius'.

**Cellulose**; Complex carbohydrate that is the main component of fibers and other support structures in plants.

**Cement, Cementation**; Incorporation of fine-grained material that binds together the largest constituents in many kinds of sedimentary or clastic rocks.

**Cenozoic**; Geologic era that includes the present, during which various mammals evolved.

**Centigrade or Celsius**; Thermometer scale on which the interval between the freezing and boiling points of water is divided by 100 degrees with 0° representing freezing and 100° representing boiling.

**Central Belief System**; Core elements of an organized religion or cult. Otherwise called creeds, doctrines, and canons. Usually such tenets are considered inviolable and unquestionable.

**Centrifugal**; Force that tends to make rotating bodies move away from the center of rotation.

**Cerci**; Appendages on the abdomens of some insects; used to detect motion or as pincers.

**CERCLA**; See 'Superfund'.

**CFC**; Chlorinated Fluoro-Carbon.

**Challenger Deep**; Deepest area of the Mariana Trench.

**Characteristic, or trait**; Distinguishing feature, attribute, quality, or property.

**Charged Surface, as in a Soil's Charged Surfaces**; Electrically-charged soil sand, silt, and especially clay and organic matter particle surfaces, which attract and hold onto nutrient salts. A soil's cation exchange capacity (CEC).

**Cheliped**; First two claw-bearing appendages of a crab, lobster, or other decapod. Generally referred to as its pincers.

**Chemistry**; Science dealing with the composition and properties of substances, and with the reactions by which substances are produced from, or converted into, other substances.

**Chemoautotrophic** or **Chemosynthetic**; Autotrophic bacteria and archaea that use energy by releasing it from particular chemical compounds.

**Chemotrophic Behavior**; Tropism towards or away from a chemical stimulus.

**Chitin**; Flexible substance made of sugar polymers in exoskeletons, esp. in insects.

**Chlorinated Fluorocarbons (CFC's)**; Manufactured refrigerant and propellant chemicals known to be responsible for Ozone depletion.

**Chlorinated Hydrocarbons**; Class of synthetic insecticides that includes DDT.

**Chlorophyll**; Green coloring matter of plants that functions in photosynthesis.

**Chordates**; Mostly animals with a backbone, including fish, amphibians, reptiles, birds, and mammals. There are also some lower chordates without backbones.

**Chromosome**; Any of the linear or sometimes circular DNA-containing bodies of living cells that contain the individual genes.

**Chronological Order**; Arrangement of events in the order of occurrence.

**Ciguatera Food Poisoning**; Type of food poisoning caused by the bioaccumulation of ciguatoxin in predatory fishes.

**Cinder**; Minute, rough piece of solidified lava.

**Cinder Cone**; Mound of cinders and ash piled around a volcano.

**Circumference**; Perimeter of a circle; the external boundary or surface of an object or body.

**CITES**; Convention on International Trade in Endangered Species of wild fauna and flora.

**Civil Engineering**; Training and occupation in the design and construction, esp., of public works (as roads, harbors, etc.).

**Class**, in **Biological Systematics**; Level below phylum and above order.

**Classification**; Arrangement of organisms into groups depending on shared characteristics. Pyramid-shaped with the higher taxa having fewer characteristics in common than the lower ones.

**Clastic**; Consisting of fragments of older rock.

**Clay**; Earth material that is plastic when wet but hard when fired and used in pottery.

**Clean Cultivation**; Garden practice of removing all weeds at all times.

**Cleaner Mimic**; Fish that looks like the cleaner wrasse; it lures in unaware fishes assuming to be cleaned but instead they are bitten by the cleaner mimic, tearing away bits of flesh.

**Cleaning Symbiosis**; Case of mutualism in fishes and some shrimps in which larger fishes are cleaned of parasites and dead skin scales by smaller fishes.

**Cleft**; Split, fissure, or crack.

**Cliff**; High, steep face of rock, particularly along a coast or fault line.

**Cliff and Terrace System**; Coastal geomorphology common in the southernmost Marianas caused by successive growths of coral reef platforms and later uplifting by faulting or sea level changes.

**Climate**; Average weather in a place or region over many years.

**Climatologist**; Scientist who specializes in the study of climates.

**Climax Forest**; Forest type that results after generations of successional forests, the permanent type in the very long term.

**Climax Vegetation**; Final, self-perpetuating community of plants that develops in a particular climate and soil.

**Cloaca**; Common opening for the intestine, the excretory, and the reproductive systems of certain animals.

**Clone**; Exact genetic replica.

**Cloud Condensation Nuclei**; Small particles (typically 0.00002 mm, or 1/100th the size of a cloud droplet) about which cloud droplets coalesce. Water requires a solid surface to make the transition from a vapor to a liquid.

**Club Moss**; Common name for a family (Lycopodiaceae) of flowerless vascular plants.

**Clumped Distribution**; Spacing of individuals in a population in clusters or "clumps".

**Cnidarian**; Phylum of soft-tissued organisms such as jellyfish and sea anemones that contain stinging cells (cnidoblasts); also includes limestone rock-forming corals.

**Cnidoblast**; Cell in a Cnidarian that contains a nematocyst.

**Coal**; Black, solid combustible mineral used as a fuel.

**Coastal Hazards APC**; A Coastal Resources Management Program area of particular concern designating additional protection measures to protect citizens from coastal hazards.

**Coastal Strand**; Area of land along coast where salt spray greatly affects the vegetation.

**Cocci**; Round-shaped cells.

**Codons**; Small group of chemical units along DNA and RNA molecules which guide the formation of proteins by the sequencing of amino acids.

**Coir**; Prepared fiber of the husks of the coconut used to make rope, etc.

**Coke**; Hard gray porous fuel made by heating soft coal to drive off most of its volatile material; used to make acetylene gas.

**Column**; Speleothem caused by union of a stalactite and a stalagmite.

**Combustion, Complete**; Burning that produces little or no smoke and only carbon dioxide and water as

waste bi-products.

**Combustion, Incomplete;** Burning that causes air pollution.

**Commensalism, or Commensalistic Symbiosis;** Relationship in which only one member benefits and the other remains unaffected.

**Commodity;** Article of commerce, often products of agriculture or mining; something useful or valued.

**Common Property Goods;** Publicly-owned environmental resources, e.g. public parks; or resources not owned by anyone or any country, ex. air and oceans.

**Commonwealth Utilities Corporation (CUC);** Agency of Commonwealth Government responsible for provision of water, power, and sewerage.

**Community;** Populations that live and interact in an area.

**Community Well-being;** Quality of life of a group of people that live and interact in an area.

**Compaction;** Crushing of air spaces out of the soil.

**Compensation Intensity;** Level of light intensity able to stimulate photosynthesis & sugar production, but at a rate just barely enough to compensate for the plant's use of sugars in its cell's respiration.

**Competition, Biological;** Interactions in which two individuals or two species limit one another's supply of food, shelter or mates.

**Competition, Economic;** Rivalry in business, as for customers and markets.

**Competitive Exclusion Principle;** When two organisms competing for a resource and do not adapt to share it, will result in only one of the competitors surviving, the other will be outcompeted and will not survive.

**Competitive Price Taker, Individual;** Consumers who purchase goods at a competitive market's set price.

**Complete Metamorphosis;** Insect life cycle with four life stages, including a pupal stage.

**Composite Volcano;** Volcano made of layers of ash and lava; now more commonly called a strato-volcano.

**Compost;** Decomposed organic matter.

**Compost Bed;** Area or structure specifically designated for the development and harvesting of decomposed organic matter.

**Compound Eye;** Eye that is made of a large number of small units; the kind of eyes found in many arthropods such as insects and crustaceans.

**Compound;** Substance with two or more different kinds of atoms combined chemically.

**Computerized Database;** Large collection of data stored in the memory banks of a computer, organized so it can be expanded, updated, and retrieved rapidly for various uses.

**Conclusion;** Logical consequence of a reasoning process.

**Concurrent;** Occurring at the same time.

**Condensation;** Change from a gaseous to a liquid state, as when water vapor changes into liquid water.

**Conducting Tissue;** Water and nutrient carrying area of plant stems

**Conglomerate;** Sedimentary rock type composed of varied-sized, cemented, rounded-edged rock fragments.

**Conservation Movement;** Original efforts of the early 1900's and again in the 1930's to sustainably manage the nation's publicly owned forest and soil resources.

**Consume;** Use up.

**Consumer, as in Biology;** Any organism or population that obtains its food and energy directly or indirectly from a producer.

**Consumer, as in Economics;** Individuals or households that 'consume' the goods and services produced in an economy.

**Consumer Surplus Welfare Measure;** Economically-derived determination used to help understand a resource's nonmarket value when applying the travel cost method of analysis.

**Contagious Disease;** Disease spread by contact with another organism that is a carrier of the disease.

**Continent;** Any of the major large land masses of the earth.

**Continental Drift Hypothesis;** Idea originally presented by Alfred Wegener that earth's continents had before been all together, then for some reason, not then understood, 'drifted' apart. Now replaced by plate tectonics theory.

**Contingent Valuation Method;** Valuation of a nonmarketed resource by querying people what they would be willing to pay to use it.

**Continuous Distribution;** Equal number distribution of species in an area without any determinable boundaries between ecosystems.

**Contour Planting;** Technique of planting crops across a slope to slow water runoff.

**Contract and Expand, as in a Soil;** Volume of a soil, influenced by the amount and kind of a soil's clay. Change is expected

with changes in soil moisture—shrinking as it dries out, swelling when it gets wet.

**Control;** Part of an experiment with all factors kept constant.

**Convection;** Transfer of heat energy through a gas or liquid by the motion of the particles in the fluid.

**Convection Cell;** Self-contained zone in which warmer air in the center is pushed upward and is balanced by the downward motion of cooler air on the periphery.

**Convergent Plate Boundary;** Plate boundary where two major earth plates come together, with either a massive mountain

building occurring, such as at the Himalayas, or subduction is occurring, such as at the Mariana Trench.

**Conveyor, Great Ocean;** Global circulation pattern in which water cycles throughout the ocean basins.

**Copepod;** Very common small planktonic crustacean.

**Copra**; Dried coconut meat yielding coconut oil.

**Coquina**; Soft, whitish limestone made up of broken seashells, used as a building material.

**Coral**; Cnidarians that secrete limestone. Main framework builders of coral reefs.

**Coral Bleaching**; Loss of zooxanthellae from corals as a result of environmental stress.

**Coral Reef**; Wave resistant structure built mainly of reef-building corals and calcareous red algae.

**Coralline Algae**, also called **calcareous algae**; Marine alga which secretes limestone as part of its metabolic processes.

**Corallivore**; Organism that eats corals or parts of corals.

**Core, Earth's**; Hot dense center of the Earth believed to be made mostly of nickel and iron.

**Coriolis Force**, also **Coriolis Effect**; Curving effect on wind flows caused by movement of the earth; named after French mathematician Gaspard Gustave Coriolis (1792–1843).

**Cornicles**; Glands on the abdomen of aphids.

**Correlation**; Relative amount of having or not having mutual relationships.

**Corrosivity**; Can corrode and eat away materials and live tissue.

**Cost**; Amount of money, etc., asked to be paid for a thing. Price, including monetary and non-monetary price elements, which are required to be paid,

**Cost/Benefit Analysis**; Comparison of benefits and costs in decision making. Dollar values are assigned to benefits and costs in most cost-benefit analyses.

**Cost Minimization**; Production of a good at the least cost possible.

**Countershading**; Color pattern that results in a dark back and a light belly, most common in epipelagic fishes.

**Cover Crop**; Crop grown to keep soil fertile and uneroded.

**CPUE**; See 'cost per unit effort'.

**Cradle to Grave System**; Application of rules by the U.S. Environmental Protection Agency mandating that those who manufacture industrial hazardous wastes are also accountable for their eventual and proper disposal.

**Crest**; Highest part of a wave.

**Cretaceous**; Latest period of the Mesozoic Era; Marked by the dying out of the dinosaurs, the rise of mammals and flowering plants, and the depositing of chalk beds.

**Critical Habitat**; Area of habitat needed to sustain a stable population of a species.

**Crop Rotation**; System of changing the crop grown in a field in order to control pests and improve soil fertility.

**Cross-Bedding**; Crisscross patterns in sedimentary rock formations indicating details as to its formative processes.

**Cross-Breeding**; Intentional breeding of separate breeds, varieties, subspecies, and even species in order to obtain a different offspring type.

**Cross-Ecosystem Effect**; Major and minor influences one ecosystem has upon another, such as runoff from land influencing and impacting coastal water ecology.

**Cross-Pollination**; Intentional transfer of pollen from the anther of one flowering plant to the stigma of another flowering plant.

**Cross-Slope Farming**; Plowing and planting across a slope rather than with it.

**Crown**; Highest part of a tree; location of most of the spread of branches and leaves.

**Crumb(s)**, referring to **Soil** - also called **Soil Aggregates**; Pea-sized clumps of soil that are binding places for soil particles.

**Crust**; Hard, outside surface of something such as the rocky crust of the Earth.

**Crustacean**; Members of the Subphylum Crustacea; Arthropods that have two pairs of antennae and an exoskeleton hardened by calcium carbonate.

**Crustal Plate**; One of the sections of the lithosphere formed at divergent plate boundaries and destroyed at convergent plate boundaries.

**Crystal**; Piece of mineral matter that has grown into a special shape, according to the way its molecules are joined together. Most kinds of minerals have their own kinds of crystal shapes.

**Crystalline**; Made of or resembling crystal, very clear or sparkling.

**Ctenophore**; Comb jellyfish.

**Culvert**; Pipe or open-ended concrete box structure, placed at key locations to facilitate water drainage.

**Cumulative**; Increasing in force or value by successive additions.

**Cumulative Cost**; Reference in land use management concerning the impacts multiple developments can have on a community, such as power and water demands or traffic flows generated by each added development.

**Cumulonimbus Cloud**; Anvil shaped cumulus cloud extending to great heights.

**Currency**; Money in circulation in any country.

**Currency Trading**; Market in which currencies of nations are bought and sold.

**Current**; Stream of water or air moving in one direction.

**Curtain**; Speleothem that hangs downwards in a cave, made up of the union of several stalactites.

**Cutting**; Method of plant propagation carried out by cutting stems and rooting them, then transplanting.

**Cyclone**; Common name given to tropical cyclones in the Indian Ocean.

**Cyclonic Circulation System**; Circulatory movement of air and water molecules within a cyclonic storm.

**Cytoplasm;** Protoplasm of a cell that is external to the nucleus.

**D;**

**Dacite;** Whitish, igneous rock, high in silica content. Bird island and its adjacent cliffs are mostly made up of dacite.

**Data;** Collection of facts related to a particular question.

**Data Recovery;** See 'salvage excavation and data recovery'.

**Datum;** Single fact in a data set.

**DDT;** Dichlorodiphenyltrichloroethane; Colorless contact insecticide. Formerly used widely in mosquito control programs but

due to effects on wildlife, banned in the United States for most uses since 1972.

**Dead-End Waste;** Type of waste that is not recycled.

**Death Rate;** Deaths in a population compared against a time measure.

**Deciduous;** Falling off or out, usually at the end of a growth period (e.g. deciduous leaves).

**Decomposer;** Consumer that derives nourishment by breaking down dead organisms and wastes.

**Decomposition;** Separation into constituent parts; to breakdown & decay.

**Deductive Reasoning;** Logical reasoning from the general to the specific.

**Deforest or Deforestation;** Practically the complete removal of the trees from an area of land.

**Delta;** Triangular silt-formed land at the mouth of a stream or river.

**Demand;** Desire for a commodity together with the ability to pay for it. Amount people are ready to buy.

**Demand Price;** Relative values one places on having a little more or a little less of a good.

**Density;** Measure of mass per unit volume of a substance.

**Density Current;** Movement of water caused by density differences. Movement is from areas of high density to areas of low density.

**Density, Commercial Unit;** Number of commercial units on a site or a building.

**Deoxyribonucleic Acid (DNA);** Nucleic acid that transmits genetic trait information from parent to offspring. Are contained inside of chromosomes which are contained inside of gametes.

**Department of Public Works (DPW);** Agency of CNMI government responsible for primary roads, public buildings, drainage; and solid waste management.

**Depletable Resource;** Resource that is finite or of a fixed quantity; example mineral resources.

**Deposit;** Sediment transport to an area downstream, then placed there when the force of water is no longer strong enough to hold the sediments in suspension.

**Deposition;** Something deposited, such as sediments.

**Dermal Denticles;** Skin element of sharks, rays, and skates that, when looked at under a microscope, appear as tiny teeth.

**Derris;** Legume plant (*Derris sp.*) that produces the insecticide rotenone.

**Desalination;** Process of taking salts out of sea water.

**Design;** Making of original plans.

**Desiccation;** Drying out completely.

**Determinants of Demand;** Factors such as income, relative prices of substitutes, etc., that influence a person's decisions about a possible purchase.

**Determinants of Supply;** Things affecting the cost of a product's delivery to the consumer. Examples include labor, raw materials, energy, needed equipment, marketing, and distribution costs, and applicable taxes and fees.

**Detritus;** Fragments resulting from disintegration (as of rocks); debris.

**Development;** Significant changes indicating a progression from a simpler or lower situation to a more complex and mature one. Improvement. Act of making some area of land or water more profitable or productive or useful.

**Devonian;** Geologic period after the Silurian and before the Carboniferous in the Paleozoic era. marked by an abundance of fishes and the appearance of the first land plants and amphibians.

**Dew;** Moisture condensed in drops on cool surfaces at night.

**Dewpoint;** The temperature at which dew begins to form. Varies with the humidity and temperature of the atmosphere.

**Diadromous;** Migration spawning habit of certain fishes which live most of their lives in fresh water, then return to the sea to spawn. Later, juveniles migrate from the sea into the freshwaters to live.

**Diatom;** Any of various microscopic algae with tests made of silica.

**Dichotomous Key;** Means of identifying objects or organisms through a series of paired, contrasting statements, only one of which applies to the organism or object.

**Dichromatism, Sexual;** Having two varieties of the coloration of an organism, depending on the sex of the individual.

**Dicot;** A flowering plant with two embryonic seed leaves or cotyledons that usually appear at germination.

**Dike;** Igneous rock structure that solidified as an inverted table piece within a rock fissure and is situated more or less vertically. If surrounding rock is eroded away, appears as a remnant wall.

**Diminishing Marginal Utility;** Lowering of the level of usefulness an item provides one, the more they have of it.

**Dinoflagellate;** Unicellular, eukaryotic, mostly autotrophic protists with two unequal flagella.

**Dioecious;** Having separate sexes where male reproductive organs are found in some individuals in a population whereas female reproductive organs are found in the others.



**Direct Competition;** When one individual claims a resource and disallows it sharing.

**Direct Expenditures;** Valuation of a nonmarketed resource by calculating the total expenditure resource users make in association with its use.

**Discontinuous Distribution;** Distribution of organisms in an area with clear separations or boundaries between ecosystems.

**Discovery;** Not knowing about something, then finding out about it. Being the first to do so.

**Disinfection,** as in **Sewage Treatment;** Final stage in proper sewage treatment, which includes the destroying of harmful bacteria prior to or concurrent with the water's reuse or discharge.

**Disprove;** Show to be wrong.

**Dissolve;** To make or become liquid. To pass into solution by breaking up a solid with a liquid or by causing a gas to be dispersed into a liquid.

**Dissolved Oxygen;** Oxygen gas (O<sub>2</sub> molecules) dissolved into and between water molecules (H<sub>2</sub>O).

**Distribution, Clumped;** Population ecology reference indicating that individuals in a population are not randomly distributed but rather found to be located in distinct "clumps" for some reason.

**Distribution, Random;** Population ecology reference indicating that individuals in a population are found to be separated from each other randomly or in random patterns.

**Distribution, Regular;** Population ecology reference indicating that individuals in a population are found to be spaced at regular intervals from each other.

**District, Historic;** Large grouping of seemingly integrated historic sites, buildings, structures, artifacts, etc.

**Disturbed Community;** Biological community re-growing in an area that has been disturbed, such as by fire, or grass mowing.

**Diurnal;** Most active during the day. Rests at night.

**Divergent Plate Boundary;** Spreading center. A rift zone. Location where two earth plates are actively being formed and from there are separating from each other.

**Diversity;** Quality of variation among living things.

**Division;** In plant systematics equivalent to Phylum in animals.

**Division of Environmental Quality (DEQ);** Agency of CNMI government responsible for clean air & water protection programs, and to control hazardous wastes.

**Division of Fish and Wildlife (DFW);** Agency of CNMI Government responsible for management & protection of CNMI fish and wildlife species and habitats.

**Dogma;** Doctrine, tenet, belief, or set of these - formally decreed by a church, upon which the church's faithful are called upon to believe in.

**Doldrum;** Equatorial ocean regions having little or no wind.

**Dolomite;** Common calcium-containing rock mineral that also contains magnesium.

**Dominant Plants;** Characteristic of the population biology of plants whereby certain species and families are the most abundant plants in an area.

**Dominant Trait;** Characteristic that is expressed (displayed) when a contrasting recessive gene or trait is present.

**Drip Irrigation;** Irrigation that uses fine tubing or porous tubing that allows water to slowly percolate out of irrigation piping and into the farm or garden plot.

**Dripstone;** Calcium carbonate (CaCO<sub>3</sub>), deposited by dripping water in the form of stalactites or stalagmites.

**Drought;** Long spell of dry weather.

**Duality Rule;** Concept that cost minimization and profit maximization are the same.

**Duration;** Time that a thing continues or lasts.

**Dust;** Fine particles of matter.

**Duty,** as in **Import Duties;** Payment due to the government, especially a tax on imports, exports, or manufactured goods.

**Duty-free;** With no payment of a duty or tax applicable.

**Dystrophic;** Reference to a lake or pond that is neither oligotrophic nor eutrophic. Often one having brownish acidic waters, a high concentration of humic matter, and a small plant population.

## **E:**

**Earthquake;** Shaking of the Earth's crust caused by rock under pressure that suddenly breaks, or by the activity of magma under a volcano.

**Echinoderm;** Member of the Phylum Echinodermata. Invertebrates with a five way radial symmetry and a water-vascular system.

**Echolocation;** Ability of some animals to sense their surroundings by analyzing the reflection of sound waves, or clicks, they emit.

**Ecologist;** Scientist who studies the relationships between organisms and their environments.

**Ecology;** Study of how living things relate to each other and their environment.

**Economics;** Social science dealing with the production, distribution, and consumption of goods and services.

**Economic Market;** Buying, pricing, and exchange procedures that all businesses to operate in and organized way.

**Economic Prosperity;** Economic state of good economic fortune, generally thought of as a growing economy with rising profits and full employment.

**Economic Recession;** See 'recession'.

**Economist;** Social scientist who studies economics.

**Economy;** System of producing, distributing, and consuming wealth.

**Ecosystem;** Combination of the living and the nonliving parts of the environment.

**Ecosystem Service;** Useful function that organisms serve to help humans or to help the environment.

**Ecotone Edge;** See 'edge'.

**Ecotourism;** Tourism involving travel to areas of natural or ecological interest, typically under the guidance of a naturalist, for the purpose of observing wildlife and learning about the environment.

**Edge, Ecotone (ecotone; ecotone edge);** Transition area between two adjacent communities, containing species characteristic of both as well as species occurring only within the zone.

**Editor;** Person that prepares a document for publication.

**Editorial Review Board;** Persons who determine which submitted articles will be included in the publication of a journal.

**Effluent;** Discharge of liquid waste, including sewage waste.

**Effort Restriction;** Restriction on fishing such as limited number of boats, fishing time, fish gear used, and types of fish caught.

**El Niño;** Periodic warming trend in the tropical and subtropical waters of the Eastern Pacific Ocean caused by the 'Southern Oscillation' phenomenon. Causes major changes in weather patterns in many parts of the world.

**Electromagnetic Wave;** Wave (as an x-ray, a radio wave, or a wave of visible light) that consists of associated electric and magnetic effects and that travels at the speed of light.

**Element;** Substance that cannot be changed into a more simple substance by ordinary means.

**Embryology;** Branch of biology dealing with embryos and their development.

**Emergency Planning and Community Right to Know (EPCRA) Regulations;** Federal regulations requiring, amongst other

things, that communities be informed if an industry exceeds specified levels of pollution discharges.

**Emergent Vegetation;** Aquatic plants that are rooted to the bottom but whose main plant parts grow up and above the water level.

**Emergent Zooplankton;** Species of plankton that hide during the day and only come out at dusk.

**Enactment of Law;** Making of law by a legislative body.

**End Consumer;** Last purchaser of a good or service; consumer of it.

**Endangered Species;** Species threatened with extinction.

**Endangered Species Act (ESA);** US law extending certain fundamental protections to listed endangered and threatened species.

**Endemic;** Restricted to a particular area.

**Endemic Species;** Species that are found only in one place and not in other places.

**Endemicity;** Proportion of species that are endemic to a particular place.

**Endolithic;** Algae, sponge, or other organism that burrows into calcareous algae or rocks.

**Energy;** Ability to do work.

**Energy Efficient;** Reference to the fact that many living organisms are physically and behaviorally adapted to not waste energy to the extent possible and still carry out their regular lives.

**Energy Flow;** Transfer of biologically captured solar or geothermal energy within the earth's populations of organisms.

**Energy Transfer;** Fraction of energy that is channeled into a useful purpose.

**ENSO;** Combination of the El Niño phenomenon and its related Southern Oscillation phenomenon.

**Entomologist;** Scientist who studies insects and other small terrestrial arthropods.

**Environmental Impact Assessment (EIA);** Detailed study of how an activity might affect the environment.

**Environmental Movement;** Political activities beginning in the 1960's that resulted in sweeping changes to U.S. environmental laws.

**Environmental Resource;** Resources obtained from protected areas; examples include recreation, clean air and water, etc.

**Environmental Service;** Nonuse aspect of protected areas that serve public interests, including watershed protection, soil stabilization, wildlife habitat., etc.

**Environmentalist;** Person who cares a great deal about and actively works to protect air and water quality and natural habitats.

**Enzyme;** Protein that acts as a catalyst in speeding reactions in living things. Some enzymes work to place smaller molecules together and others work to divide large molecules into smaller ones.

**Eocene Epoch;** Second and longest epoch in the tertiary period. Epoch when land mammals began to become predominant.

**Ephemeral Stream;** Stream that only flows for part of the year.

**Eipelagic;** Open ocean environment from the surface to a depth of 2000 meters (650 feet).

**Epiphyte;** Plant that grows on another plant but is not a parasite and produces its own food by photosynthesis. See also 'aerial plant'.

**Epithet, Specific;** Second part of scientific name. Also called **trivial epithet**. Sometimes referred to as the species level name; however the species name for the organism includes both the genus and the specific epithet together.

**Epoch, Geologic;** Subdivisions of geologic periods.

**Equator;** Reference line around Earth halfway between the North and South Pole, used to establish parallels for measuring latitude. Also 0 degrees Latitude.

**Equatorial Low;** Low barometric pressure at the equatorial plane of the earth relative to the sun, resulting from rising tropical air in the north and south Hadley Cells.

**Equilibrium Price,** as in **Money Markets;** Price of currencies that is eventually established during each trading period. A currency's exchange value at any one particular time.

**Equinox;** Time when the focal point of the direct rays of the sun crosses the Equator, making night and day of equal length in all parts of the earth.

**Era, Geologic;** Large subdivision of geologic time.

**Erosion;** Process by which rock particles and soils are worn away, usually by water or wind.

**Escarpment;** Cliff. A steep drop off or rise.

**Estuarine;** Pertaining to an estuary.

**Estuary;** Partly enclosed portion of the sea that is fed by freshwater.

**Ethanol;** Grain alcohol.

**Ethnography;** Branch of anthropology that deals descriptively with specific cultures, esp. those of nonliterate groups and peoples.

**Euphotic Zone;** See 'photic zone'.

**Eustacy;** Pertaining to changes in sea level throughout the world, as because of extensive formation or melting of glaciers and polar ice caps.

**Eutrophic;** Designating of a pond, lake, lagoon, etc. that is rich in plant nutrients.

**Eutrophication;** Excess of nutrients such that dissolve oxygen levels are lowered due to biological decay.

**Evaluation, in Archeology;** Deciding if properties meet the criteria of archeological significance.

**Evaporation;** Change of water molecules from liquid phase to gaseous water vapor phase.

**Evergreen;** Remaining green even during the nongrowing season.

**Evolution;** From simple to more advanced. In particular, the changes of forms of life through time, as evident from the fossil

record, increased complexity from simple life forms to those that are progressively more intricate.

**Evolution, Theory of;** See 'organic evolution, theory of'.

**Evolutionary History;** Changes of animal and plant forms or life from the simple to the more complex throughout the earth's existence.

**Evolve;** When a species of organism changes into a new species by "natural selection".

**Exchange Rate;** Rate at which one currency may be exchanged for another.

**Exclusive Economic Zone;** Zone 200 nautical miles side along the coast where nations have exclusive rights to any resource.

**Existence Value;** Non-use utility derived by people knowing that a resource exists even if they don't use it.

**Exoskeleton;** Hard, externally-secreted support structure, as the shell of an oyster, cuticle of a lobster, etc.

**Exotic Species;** Nonnative organism brought either intentionally or accidentally to a new place or island.

**Expand,** as in **Soil Expansion;** See 'contract and expand'.

**Experiment;** Controlled procedure carried out to discover, test, or demonstrate something.

**Explanation;** To give the meaning of. To make plain or understandable. To interpret.

**Export;** To send goods of something elsewhere, usually to another country.

**Externality, Market;** Intentional or unintentional externalizing of a cost from a transaction such as pollution clean up costs not being borne by producers or consumers which caused it; an important example of a market failure.

**Extinct,** and **extinction;** Species of plant or animal that no longer exists.

**Extirpated;** Removed from an area completely.

**Extrusive;** To force out, as through a small opening.

**Exxon Valdez;** Supertanker ship that ran aground causing US nation's worst oil spill devastating fish and wildlife and causing widespread environmental pollution.

**Eye of a Typhoon;** Area of falling air, the calm, low pressure around which the eye wall is located.

**Eye Wall;** Area of high velocity winds which move around a typhoon; the most damaging part of a typhoon.

## **F;**

**Factor Inputs;** Inputs to production, for example natural resources like wood, oil, water, etc, used in manufacturing.

**Facultative Symbiosis;** Form of symbiosis in which the two partners in the relationship can live independently without the other.

**Facultative;** Optional; capable of living under a varying conditions, e.g. Able to live in the presence or absence of oxygen, as a parasite or nonparasite, etc.

**Faith;** Unquestioning belief, such as in a religion's doctrine.

**Fallacy;** False or mistake idea; an often plausible argument using false or illogical reasoning.

**Fallow;** Left without tilling or sowing after plowing.

**Family (Level in Systematics);** Level below order and above genus.

**Famine;** Acute and general shortage of food.

**Fathom**; Two arms outstretched. A length of 6 feet used as a nautical unit of depth and length.

**Fault**; Break in the Earth's crust along which some movement of rock takes place.

**Fauna**; Animals or animal life, especially of a region, period, or environment.

**Fecundity**; Number of viable eggs that a female produces in its lifetime; used as a categorization method for fishes.

**Federal Register**; Daily bulletin of administrative and executive rules, regulations, orders, and notices that is published by the federal government.

**Feeder**, as in **Power Distribution**; Major piece of equipment within in a power plant that distributes electricity developed in a generator to certain community's electrical distribution lines.

**Feral**; Having escaped from domestication and become wild.

**Fermentation**; Chemical decomposition of an organic substance by enzymatic action in the absence of oxygen, often with the formation of a gas.

**Fertile Offspring**; Offspring that are capable of reproducing.

**Fertilizer**; Material (as manure or chemical mixture) used for enriching land.

**Fertilizer Burn**; Excess salt problem caused by over applying commercial fertilizer to a soil.

**Field Capacity**; Maximum amount of water that a particular soil can hold.

**Fig**; So-called 'false' fruit of a member of the *Ficus* genus of trees. Actual fruits develop inside of figs.

**Final Good**; Product that has undergone a series of manufacturing steps.

**Final Rule**; Rule promulgated by an administrative agency after the public has had an opportunity to comment on the proposed rule.

**Fine, Enforcement**; Money exacted as a penalty for an offense.

**Finite**; Having definable limits. Not infinite.

**Fire Ecosystem**; Environment that is regularly burned that supports fire-tolerant species such as grasses.

**First Law of Thermodynamics**; Energy cannot be created nor destroyed. The law of conservation of energy. The fundamental principle of physics that the total energy of an isolated system is constant despite internal changes.

**Fish Aggregation Device (FAD)**; Stationary buoy or object set in deep waters; attracts pelagic fishes; encourages fishing by minimizing search for fish efforts, thus saving fuel expenses.

**Fishery**; Place where fish and other aquatic creatures are caught.

**Fissure Flow**; Flow of lava that spreads out from a fissure spreading more or less evenly over the earth's surface in thick horizontal layers.

**Five Kingdom Classification System**; Biological classification system that used five kingdoms. Out of date but commonly still used for convenience. These include the Kingdoms Animalia, Plantae, Monera, Protista, and Fungi.

**Fix**, as in **Nitrogen Fixation**; See 'Nitrogen Fixation'.

**Flagellum, Flagella**; Long, whip-like organelle that is usually involved with locomotion.

**Flood, and flooding**; Great flow of water over the land.

**Flood Plain**; Land adjacent to a river channel that is covered by water when the river overflows its banks.

**Flora**; Plants or plant life, especially of a period or region.

**Flotsam**; Floating ocean debris, natural and artificial, such as logs, plastics, and escaped buoys.

**Flower**; Highly modified stem whose leaves are specialized for sexual reproduction.

**Flowstone**; Calcareous deposited accumulated on ceilings, walls, and floors of caves by the evaporation of seeping water.

**Food Chain**; Series of steps from producer through consumers and decomposers by which energy and matter are transferred through the environment.

**Food Web**; Set of interconnecting food chains.

**Foot Candle**; Unit form measuring illumination; it is equal to the amount of direct light thrown by one candle on a square foot of surface every part of which is one foot away.

**Foraminiferan**; Any of an order of one-celled sea animals with calcareous shells full of tiny holes through which slender filaments protrude.

**Forb**; Term used in range science that lumps together all of the branching, herbaceous broad-leafed vegetation of a grassland to distinguish them from grasses and grass-like plants.

**Forest**; Ecological habitat dominated by trees.

**Forest Fauna**; Animal life in a forest.

**Forest Flora**; Plant life in a forest.

**Forest Litter**; Fallen leaves, twigs, branches, dead animals, etc. that lies on the forest floor.

**Forester**; Scientist who specializes in the study of forest ecology and/or forest production.

**Fork Length**; Length of a fish from the tip of its mouth (closed) to the indentation in the middle of a fishes tail (the "fork"), in centimeters.

**Formation, Geologic**; Rock unit distinguished from adjacent deposits by some common characteristic such as composition, origin, type of fossils, etc.

**Fossil**; Any evidence of an organism that lived in the past.

**Fossiliferous Limestone**; Limestone rock in which fossilized shells and corals are clearly visible.

**Fracture**; Crack, such as in the case of the fracture in a rock formation along an earthquake fault.

**Freshwater Seep**; Drainage place of groundwater in oceanic waters.

**Fringing Reef;** Coral reef that develops as a relatively narrow band close to a shore.

**FronD;** Large divided leaf; especially of a fern or palm tree.

**Fruit;** Mature ovary in flowering plants.

**Fry;** Small, recently hatched fishes.

**Furnace,** also called an **Incinerator;** Enclosed structure in which material is burned.

**Fused Plates;** Referring to teeth of parrot fish.

## **G:**

**Gabbro;** Dark, heavy, igneous rock composed of pyroxene and feldspar.

**Gamete;** Sex cell.

**Gametophyte;** Haploid, gamete-producing generation in many types of seaweed and other lower plants.

**Gamma Radiation;** Electromagnetic radiation of great penetrating power, emitted by the nucleus of a radioactive substance; shorter in wavelength than an x-ray.

**Garden;** Piece of ground designated for growing vegetables, flowers, etc.

**Gene;** Segment of DNA containing the hereditary information necessary for the development of an organism.

**General Theory of Relativity;** Theory of the relative, rather than the absolute, characteristic of motion, velocity, mass, etc., and the interdependence of matter, time, and space.

**Genesis,** as in **Soil Genesis;** Physical and biological processes by which soils develop through time.

**Genetics;** Science of inheritance.

**Genetic Code;** Order in which four chemical constituents, guanine, cytosine, adenine, and thymine, are arranged in huge molecules of DNA.

**Genitalia;** External reproductive organs.

**Genus;** Subdivision of a Family in the hierarchy of biological classification. First part of a scientific name.

**Geographer;** Physical or social scientist who specializes in the study of geography, the science dealing with the earth's surface, continents, climates, plants, animals, resources, etc.

**Geographic Information System;** Computer system for capturing, storing, manipulating, analyzing, and displaying electronically-digitized maps and mapped data, often in 'layers', related to positions on the Earth's surface.

**Geographical Isolation;** When organisms in a place, such as an island, are separated from other organisms by oceans, deserts, mountains or other geographic features.

**Geologic Time Scale;** Chart with geologic time period references used in historical geology. Shows relationships of eras, periods, and epochs to each other, the time lengths of each, and the number of years before present.

**Geologist;** Scientist who specializes in the study of the earth and its historical and physical features.

**Geomorphology;** Science dealing with the nature and origin of the earth's topographic features.

**Geosphere;** Mineral rock parts of the earth. Include earth's core, mantle and crust.

**Geotaxis;** Response of animals to gravity or to a surface.

**Geotropism;** Response in plants and plant parts to gravity.

**Germ;** Organism that causes diseases.

**Germ Theory;** Doctrine holding that infectious diseases are caused by the activity of microorganisms within the body.

**Germinate,** and **germination;** Sprouting of plant seeds into seedlings.

**Ghyben-Herzberg lens;** Lens-shaped layer of groundwater found under limestone islands.

**Global Warming;** Rise in average overall global temperature, especially as a result of increasing amounts of greenhouse gases.

**Glomar Challenger;** Specially-built ship used by the CIA to attempt covert recovery of a sunken Soviet Union submarine, later converted into deep sea drilling platform.

**Glucose;** Simple sugar molecule, also called dextrose.

**Gondwanaland;** Ancient super-continent that included what are now India, Australia, Africa, South America, and Antarctica.

**Good;** Personal property, usually movable but can include real property. Something of worth or benefit. An item or material exchanged in a business transaction for barter or for money.

**Graduation;** Incremental increase in something.

**Graffiti;** An unsightly inscription or drawing made on a public surface (as a wall).

**Grafting;** Inserting the shoot or bud of one plant into another, where it grows permanently.

**Granite;** Hard, granular, igneous rock.

**Graph;** Diagram representing the successive changes in a variable quantity.

**Gravid;** Carrier of eggs.

**Gravity;** Force of attraction between all masses in the universe; especially the attraction of the earth's mass for bodies near its surface. See also 'Universal Law of Gravity'.

**Gravitational Field;** Polar electro-magnetic force, such as by the earth. The force by which every mass attracts, and is attracted by every other mass.

**Great Ocean Conveyor;** See 'conveyor, great ocean'.

**Green Manure;** Crop of plants, such as clover or sunn hemp, that are plowed under while still green to fertilize the soil.

**Greenhouse Effect;** Absorption and re-radiation of terrestrial infrared radiation by atmospheric water vapor,

carbon dioxide, ozone, and other greenhouse gases.

**Gregarious**; Organism that commonly gathers in large groups.

**Gross Island Product**; Total value of goods and services produced in an island jurisdiction's, such as the CNMI's economy.

**Ground Layer**; See 'herb layer'.

**Groundwater Recharge**; Inflow by percolation of new rainfall into an area's groundwater aquifers.

**Groundwater**; Water that is located below the surface of the earth.

**Grubs**; Larvae of beetles.

**Guacamole Dip**; Food, often a side dish or dressing made up of avocados and salsa.

**Guano**; Substance composed chiefly of the excrement of seabirds and used as a fertilizer.

**Guyot**; Flat-topped seamount, formed by complete erosion and later submergence of an island.

**Gypsum**; Hydrated calcium sulfate. Used as a soil amendment.

## **H;**

**Habitat**; Particular place where an organism lives.

**Hackle**; Separation of fibers with a comb-like instrument.

**Hadal**; Ocean zone below 6,000 meters (20,000 feet)

**Hadalpelagic**; Open ocean water within the very deep Hadal zone.

**Halite, Rock salt (NaCl)**; Mineral formed from evaporating sea water, commonly called table salt.

**Halophyte, halophytic**; Plant that can grow in salty or alkaline soils.

**Halophytic-Xerophytic Scrub**; Vegetation type characterized by plants that are able to grow in salty and dry conditions.

**Halteres**; Small hind wings of flies; these are used for balance when flying.

**Hard Pan**; Compact layer in soil that is impenetrable by roots.

**Hard Water**; Water that has high amounts of calcium, magnesium, or other chlorides.

**Harden Off**; Exposure of nursery plants to field conditions in stages, includes holding back water for a short period and exposing to sun and wind slowly.

**Harvest Quota**; Numerical limit placed upon the catch within a fishery, either by boat, by season, or some other means.

**Hazardous Waste**; Waste that has one of four basic properties; ignitability, reactivity, corrosivity, and toxicity.

**Health**; Physical and mental well being. Freedom from disease.

**Health-based Standard**; Numerical U.S. Environmental Protection Agency established criteria for analyzing risks to human

health posed by contaminants and microbe levels in a water body.

**Heat of Vaporization**; Amount of heat required to convert a unit mass of a liquid at its boiling point into vapor without an increase in temperature.

**Heat of Freezing**; Amount of heat required per unit mass of a substance at freezing to convert it from the liquid to a solid.

**Heat, Specific**; See 'specific heat capacity'.

**Heavy Soil**; Soil with a high fraction of clay content.

**Hectare**; Unit of land measurement; 100 meters x 100 meters or 10,000 square meters.

**Hedge, in Landscaping**; Fence or boundary formed by shrubs, small trees and trained.

**Hedgerow**; Row of shrubs or small trees bounding or separating fields.

**Hemoglobin**; Iron-containing respiratory pigment in red blood cells of vertebrates, consisting of about 6 percent heme and 94 percent globin.

**Herb layer**; Zone of a forest community closest to the ground.

**Herb**; Soft-tissued plant.

**Herbaceous Plant**; Soft, green stemmed plant with little or no woody tissue.

**Herbicide**; Pesticide type used to kill undesired plants.

**Herbivore**; Primary consumer, or animal that eats only plants.

**Heredity**; Transmission of genetic characteristics from one generation to the next.

**Hermaphroditic**; Organism that has both male and female gonads.

**Hermatypic Coral**; Reef building coral types; have zooxanthellae symbionts.

**Herpetologist**; Scientist who studies reptiles and amphibians.

**Heterogeneous**; Composed of dissimilar ingredients or constituents.

**Heterotrophic**; Organisms which cannot manufacture their own food.

**Hierarchy**; Persons or things arranged in a graded series.

**High Island**; Taller-reaching islands as compared to low island atolls and coral caves — all CNMI islands are high islands except Managaha and Farallon de Medinilla.

**High Seas**; Open ocean waters outside the territorial limits of any nation.

**High Tide**; Highest level that a daily tide rises to.

**High-Level or Perched Aquifer**; Aquifer that is high up, above the basal aquifer. It is usually a limestone or sandstone formation, underlined by volcanic rock.

**Historic Preservation Office (HPO)**; CNMI agency principally responsible for protection of Commonwealth & associated US nationally registered historic and prehistoric objects & sites.

**Historic Property**; District, site, building, structure, or object significant in history, culture, archeology, architecture, or engineering.

**Historic Resource Survey;** Process of locating and cataloging local historic resources.

**Historical Geology;** Branch of geology concerned with origin of the earth, its physical changes, and its fossil history.

**History (& historic time);** Branch of knowledge that records and explains past events.

**Holoplankton;** Organisms that spend their entire lives in the plankton community.

**Holothurian;** Sea cucumber. Member of the class Holothuridae in the Phylum Echinodermata.

**Home Range;** Area of range of a territorially-behaving animal.

**Homogeneous;** Uniform structure. Also of the same or similar kind.

**Homoiotherm;** Warm blooded. An animal that can regulate its own internal body temperature.

**Honeydew;** Sticky, sugary solution produced by aphids. Honey dew is used to feed certain ants.

**Horizon, Soil;** Layer of soil distinguished from layers above and below by characteristic physical properties and a distinct chemical composition.

**Hormone;** Substance that acts as a chemical messenger in an organism.

**Horse Latitude;** Either of two belts over the ocean at 30-35 degrees North and 30-35 degrees South latitudes, characterized by calms, light winds, and high barometric pressure.

**Host Species;** Species that is attacked by a parasite or parasitoid.

**Host;** Any organism upon or in which a parasite lives.

**Hotspot;** Theorized location of a large, isolated location of the earth's mantle where an upwards flow of magma continuously occurs, regularly poking through moving overlying lithospheric plates.

**Human Immunodeficiency Virus (HIV);** Retrovirus that invades human T cells and causes AIDS.

**Humic Acid;** Brown powder consisting of organic acids, derived from humus.

**Humidity;** Amount of atmospheric moisture.

**Humus;** Dark, organic part of soil formed from entirely decayed organic matter.

**Hurricane;** Common name given to tropical cyclones in the Atlantic and Eastern Pacific.

**Hybrid;** Offspring of genetically different parents, as members of different breeds or species)

**Hydric Soil;** Mucky, gleyey, or mottled soil, often with manganese nodules within it. Soil type formed by frequent or long term submergence and retention by water. Soil changes are caused by an anaerobic environment.

**Hydrocarbon (HC);** Organic compound containing only Carbon and Hydrogen.

**Hydrogen (H);** Lightest of the elements. Hydrogen is a colorless, odorless gas that is highly flammable.

**Hydrogen Sulfide (H<sub>2</sub>S);** Gas that is produced in sediments that are lacking oxygen.

**Hydrophyte (hydrophytic);** Plant that grows well in water or very wet earth.

**Hydroponics;** Growing of plants without soil using other rooting media & flowing nutrient rich water.

**Hydrosphere;** All of the water of the water in the atmosphere and on and within the ground and the surface of the earth.

**Hyplural;** Backbone of a fish.

**Hypothesis;** Tentative explanation forwarded by a scientist prior to the conducting of an experiment. An educated guess.

**I;**

**Igneous Rock;** Rock that formed from the cooling of molten material such as lava from a volcano.

**Ignitability;** Can catch fire and burn when handled.

**Immigrate;** To move into a new place.

**Immune;** Having a special capacity for resistance (as to a disease); containing or producing antibodies.

**Impact;** Influence or an affect upon something else. "Significant impacts" are major influences having the potential to cause major positive or negative effects.

**Impermeable;** Not permitting passage (as of a fluid) through it surface.

**Import Duty;** Duty applied to imported goods.

**Incident Radiation;** Amount of solar electromagnetic energy that actually strikes the earth's surface.

**Incidental Take Permit;** Permit that can be issued by the U.S. Fish and Wildlife Service allowing the incidental taking of endangered species resulting from a development activity.

**Incineration;** Process of burning as completely as possible, burning to ashes.

**Incomplete Metamorphosis;** Insect life cycle with three life stages; there is no pupal stage.

**Indigenous;** Produced, growing, or living naturally in a particular region.

**Indirect Competition;** Form of competition in which the competitors use the same limited resource and thus there is less for the others whom they are competing against. Example includes plants competing for available light.

**Individual Competitive Price Taker;** Common persons in a community who are, for the most part, not involved with establishing market prices.

**Individual Demand Curve;** Curve drawn from an individual demand schedule illustrating the concept of diminishing marginal utility.

**Individual Demand Schedule;** Prices one is willing to pay for one and more than one item at any one time.

**Individual Utility Level;** Value an individual places on a good or service.

**Inductive Reasoning;** Logical reasoning, often with the use of statistical samples, from particular facts to a general conclusion.

**Industry;** Very large-scale business activity, such as manufacturing, tourism, etc.

**Industrial Revolution;** Rapid transition from agricultural economies based on manufacture of material

goods.

**Industrial Sector;** Element of a region's economy encompassing its industries.

**Infauna;** Animals that burrow into a substrate.

**Inference;** To conclude by reasoning from something known or assumed.

**Infiltration;** Movement of water and dissolved nutrients downwards through the soil profile.

**Inflorescence;** Flower cluster of a plant.

**Influenza;** Acute viral disease marked by fever, prostration, pains, and respiratory inflammation.

**Infrared Radiation;** Electromagnetic radiation that heats a surface when it strikes it.

**Infrastructure;** System of public works of a region or island, roads, sewers, etc.

**Inheritance, Laws of;** Three principles of inheritance forwarded by Mendel; Some traits are dominant, others are recessive; many traits are inherited in pairs; hybrids do not breed true.

**Inorganic;** Compound or material that does not contain the element carbon.

**In-place Mitigation;** Procedure in historic preservation where discovered artifacts, such as an old well or cistern, are kept on a property site throughout and after its development stage.

**Input Market;** Market in which a producer is also a consumer, ex. in market for raw materials needed in manufacturing.

**Input, Ecological;** Influences one ecosystem receives from other ecosystems.

**Input, Economic;** What is put in, such as component parts to a manufacturing assembly line. Also includes energy and labor inputs.

**Insectary;** Place where insects are intentionally raised.

**Insecticide;** Substance used to kill insects.

**Insecticide Resistance;** Development of species that are resistant to insecticides.

**Integrated Pest Management (IPM);** Way of controlling pests by using a combination of control methods.

**Integrated Waste Management(IWM);** Use of several disposal methods at one time usually to include waste reduction, recycling, incineration and land filling.

**Interdependent;** Mutual dependence, such as the interdependence of many organisms in a food web or of two or more organisms in a commensal symbiotic association.

**Intermediate Consumer;** One who obtains a good or service in order to use it to produce other goods and services what are then sold; examples - A commercial automobile mechanic who purchases tools to carry out their work.

**Intermediate Good;** Goods purchased and used by intermediate consumers of them; example - the "tools" purchased in the example given above by the commercial automobile mechanic.

**Internet;** World-wide network of interconnected high speed computers.

**Intertidal;** Area between the lowest and highest tides.

**Inter-tropical Convergence Zone(ITCZ);** Location on the earth's surface where most direct sun rays strike, causing much evaporation; depending on season, sometimes above, sometimes at, and sometimes below the equator.

**Introduced Species, Plant, or Animal;** Nonnative organism brought, either intentionally or accidentally, to a new place or island.

**Intrusive;** Forced into or between other rocks while in a molten state.

**Inventory;** Procedure in archeological surveys to identify historic resources at a site.

**Invertebrate;** Animal without a backbone.

**Invisible Hand;** Nongovernmental controlling forces in a free market that encourage competition, which, absent market failures,

leads to lower prices. Keeps prices at a market equilibrium per the laws of supply and demand.

**Iron (Fe);** Heavy, malleable, magnetic metallic chemical element that rusts easily and is vital to biological processes.

**Iron Oxide;** Rust.

**Island;** Formation of land within a body of water that is smaller than a continent.

**Island arc;** Island archipelago with a definite arc shape to it.

**Isobath;** Contour line on a map connecting points of equal depth in a body of water or below the earth's surface.

**Isostasy;** Balancing process of the earth's crust, in which one part of the earth rises when another sinks.

**Isthmus;** Narrow strip of land joining two larger portions of land.

## **J;**

**Journal;** Periodical.

**Judicial Error;** Relatively uncommon finding by a sitting US Supreme Court if it decides not to follow an earlier Supreme Court's legal precedent that the earlier court's interpretation of the applicable law(s) was incorrect.

**Judicial Opinion;** Written statement by a judge or judicial body regarding a case. It states the background of and the logical reasoning for the rendered decision of the court.

**Jurassic;** Geologic period characterized by the dominance of dinosaurs.



## **K:**

**Karst Topography**; Irregular limestone region with sinks, underground streams, pinnacles and caverns.  
**Keystone Species**; Species in a biological community that, if removed or killed off, would greatly disrupt the ecosystem as a whole.  
**Kilocalorie**; Unit of energy measure, equaling 1,000 calories.  
**Kilogram**; Unit of weight measure equaling 1,000 grams.  
**Kingdom**; Major subdivision of the living world.  
**Krakatoa**; Small volcanic island of Indonesia, between Java and Sumatra; famous for its extremely powerful volcanic eruption.  
**Krill**; Common planktonic crustacean.  
**Kuroshio Current**; Major northward-moving ocean current in the Western Pacific. In English 'kuroshio' translates to "black stream", an allusion to the deep blue of its water. Analogous to the "Gulf Stream" of the Atlantic.

## **L:**

**La Niña**; Cooling of the ocean surface off the western coast of South America, occurring periodically every 4 to 12 years and affecting Pacific and other weather patterns.  
**Lacustrine Wetland**; Wetland dominated by open water, such as a lake or pond.  
**Lagoon and Reef APC**; Coastal Resource Management area of particular concern designation, covering certain areas of the CNMI's lagoon and reefs.  
**Lagoon**; Small, usually shallow body of water next to a larger body of water.  
**Laissez-Faire**; Non-interference, specifically absence of government control over business and industry.  
**Lake**; Large, inland body of usually freshwater.  
**Land Use Planning**; Application of planning principles to land use allocations and management.  
**Landed Gentry**; Persons of high social standing who themselves, or whose families owned disproportionately large tracts of land.  
**Landfilling**; Disposal of garbage or rubbish by burying it under a shallow layer of ground.  
**Landscape Architecture**; Art or profession of planning or changing the natural scenery of a place for a desired effect or purpose.  
**Landscaping**; Planning, preparing, planting, and caring for decorative and useful vegetation at a particular location.  
**Landslide**; Abrupt down-slope movement of rock, soil mud, or a mixture of these materials.  
**Landward**; Towards an area of land.  
**Larval**; Immature stage of an animal that looks different from the adult.  
**Latent Heat of Condensation**; Amount of heat energy released when a vapor returns to a liquid.  
**Latent Heat of Evaporation**; Amount of heat energy that is needed to evaporate a substance.  
**Lateral Line**; System of canals and sensory cells on the sides of fishes that helps them detect vibrations in the water.  
**Laterite and Lateritic**; Red, residual soil containing large amounts of aluminum; ferric hydroxides, formed by the decomposition of many kinds of rock, found esp. in well drained tropical forests.  
**Laterization**; Process by which rock is converted to laterite.  
**Latitude**; Distance in degrees north or south of the equator.  
**Laurasia**; Hypothetical ancient super-continent that included what are now North America and Eurasia.  
**Lava**; Melted minerals (magma) that have reached Earth's surface. Lava usually contains dissolved gasses.  
**Law of Demand**; As the price of a good or service increases, consumer demand for the good or service decreases, and vice versa.  
**Law of Gravity**; See 'universal law of gravity'.  
**Law of Natural Selection**; See 'natural selection'.  
**Law of Supply**; As prices increase, producers will increase the amount supplied, and as prices decrease, producers will decrease the amount supplied.  
**Law of Supply and Demand**; See 'supply and demand'.  
**Law of the Sea Treaty (UNCLOS)**; International law whose goal is to establish a frame work for the governance and protection of all aspects of ocean use.  
**Laws of Inheritance**; Some inherited traits are dominant, others recessive. Many traits are inherited in pairs. Hybrids do not breed true.  
**Layering**, also called **ground layering**; Covering of plant nodes with soil to encourage them to root into new plants.  
**Leach**; Dissolving, transporting, and depositing of materials by water seeping downward.  
**Lead-Acid Battery**; Battery with lead electrodes with dilute sulphuric acid as the electrolyte; each cell generates about 2 volts.  
**Leeward**; Situated away from the wind.  
**Legume**; Any of a large family of plants having fruits that are dried pods and split when ripe; includes beans and clovers & various tropical shrubs and trees.  
**Length Frequency**; Size distribution of a harvest; as of fish caught on a fishing trip. Used to help determine population characteristics for fishery management purposes.  
**Lentic**; Describes aquatic ecosystems with non-flowing water. Examples include lakes, marshes, etc.  
**Lenticel**; Spongy area in the bark of a woody plant, serving as a pore to permit the exchange of gases between

the stem and the atmosphere.

**Lethal**; Able to cause death.

**Level Playing Field**; Environment in which all companies in a given market must follow the same rules and are given an equal ability to compete.

**Liana**; Luxuriantly growing woody tropical vine that roots in the ground and climbs, as around tree trunks.

**License**; Written document that allows one to legally carry out some activity.

**Lichen**; Specialized plants made up of an algae and a fungus living in mutualistic symbiosis; grow as a unit on a solid surface; often are pioneer plants to difficult, soil-less areas.

**Light, Sandy Soil**; Soil without much clay in it, mostly sand.

**Lightning**; Abrupt electric discharge from cloud to cloud or from cloud to earth in the atmosphere, accompanied by a flash of light.

**Limestone**; Secretion of corals and calcareous algae. A sedimentary rock made up mostly of the mineral calcite. The shells of sea animals contain calcite, and shells are often part of limestone.

**Liming**; Applying of powdered lime to an area as a fertilizer.

**Limiting Factor**; Any item that limits the survival and productivity of an organism.

**Limnologist**; Scientist who specializes in the study of the physical and/or biological characteristics of lakes and other fresh water bodies.

**Lithification**; Process of forming rock by the binding together of cemented rock particles, usually via strong pressure.

**Lithosphere**; Outer layer of the Earth that includes the crust.

**Lithosphere Plate**; See 'plate'.

**Litter,(Forest)**; Surface layer of the forest floor in which leaves are partially decomposed.

**Litter,(Human)**; Useless rubbish wastes wantonly left in a public place.

**Littoral**; See 'intertidal'.

**Living Resource**; Element of an area's natural resources, the portion which is composed of living organisms.

**Loam**; Loose soil mixed with sand, silt, and clay. Usually contains organic matter.

**Local**; Relating to a city, town, or district rather than a larger area.

**Loess**; Fine-grained, unstratified accumulation of clay and silt deposited by the wind. Derived from a German word meaning 'loose'.

**Logarithmic**; Mathematical term often used to describe populations of biological organisms that are very, very rapidly

increasing, such as an introduced species might do when their is abundant food and no predators.

**Logic**; Science that deals with the rules and tests of sound thinking and proof by reasoning.

**Logos**; Ancient Greek word literally translated to mean 'reason'. Often used as a suffix in the sciences and philosophy meaning 'the study of'.

**Longitude**; Degrees east or west of the Prime Meridian.

**Lotic**; Describes aquatic ecosystems with flowing water. Examples included streams, rivers, waterfalls, etc.

**Love Canal**; Section of Niagara Falls, N.Y., containing a toxic waste site. Declared an emergency and community evacuated. Disaster led to EPA establishing its Superfund program which led to its cleanup and resettlement.

**Low Tide**; Lowest level that a daily tide falls to.

**Luminescent, Bioluminescent**; Production of light by living organisms.

## **M;**

**Macroalgae**; Relatively large and conspicuous fleshy red, brown, and green alga.

**Maggot**; Larva of flies.

**Magma**; Hot, molten rock beneath earth's surface.

**Magnetite**; Black, polarized, mineral component of iron ore.

**Magnitude**; Measure of the greatness of size or extent (e.g. magnitude of an earthquake).

**Major Siting**, as applied by the **CRM Program**; Project that meets certain special criteria or by CRM Board consensus constitutes a potential significant impact to CNMI coastal resources

**Mandibles**; Biting and chewing jaws of an insect.

**Mangrove**; Tree of shrub with special adaptations that inhabits tropical tidal marsh areas.

**Mantle, Earth's**; Layer of heavy material between earth's outer core and the crust.

**Mantle, Mollusk's**; Outer layer of tissue that secretes the shell of mollusks.

**Manure**; Refuse from stables or barn yards.

**Map**; Two-dimensional representation of an area (usually of the earth's surface).

**Marble**; Metamorphosed limestone that can be polished and used in fine building work.

**Mariana Trench**; Earth's deepest oceanic trench system; location of convergent plate boundary where Pacific Plate dives below the Marianas plate.

**Mariculture**; Saltwater aquaculture.

**Marine**; From the sea.

**Market**; Informal or formal organizational structure or process by which prices for any particular goods or services are determined by the laws of supply and demand.

**Market Demand Curve**; Total of individual demand curves for a market; picture of all of a single good's marketability at increasing price levels.

**Market Equilibrium;** Method by which markets establish prices by obtaining an equilibrium of supply and demand.

**Market Failure;** Situations in which free markets alone cannot accomplish wise management of resources; often involve public resources and public environments.

**Market Price;** See 'price'.

**Market Price;** Most common price at which an item may be obtained in a place of business.

**Market Price Determination;** Method by which competitive economic markets determine prices.

**Market Supply Curve;** Combination of all individual producers' supply curves.

**MARPOL Convention;** Part of law of the sea treaty banning marine plastics pollution anywhere and sewage dumping near shores.

**Marsh;** Tract of low, wet, soft land dominated by emergent vegetation but lacking of trees.

**Mass Wasting;** Downslope movement of land due to the pull of gravity.

**Master Plan Map;** Map developed after extensive interagency & public meetings designed to guide future planning, zoning, & infrastructure actions.

**Maximum Sustainable Yield;** Largest possible number of individuals that can be sustainably harvested from a population.

**Media;** Environmental features including air, water, groundwater, & soil.

**Mediterranean Climate;** Climate characterized by warm, dry summers, and rainy winters.

**Megawatt;** One million watts.

**Meridian;** Imaginary line on earth running from the North Pole to the South Pole.

**Meroplankton;** Planktonic organisms that spend only part of their life in the plankton.

**Mesopelagic;** Open ocean environment from a depth of 200 meters to 1,000 meters (650 feet to 3,000 feet).

**Mesophyte (Mesophytic);** Any plant adapted to grow under medium conditions of moisture.

**Mesozoic;** Geologic era from 225 million to 65 million years before present. Characterized by the dinosaurs and the appearance of grasses, flowering plants, etc.

**Metamorphic Rock;** Rock that has changed into another kind of rock by heat and pressure.

**Metamorphose;** To change form during the life cycle of an organism.

**Methane;** Colorless odorless flammable gas produced by decomposition of organic matter or from coal and used esp. as a fuel.

**Methemoglobin, Methemoglobinemia;** Abnormal form of hemoglobin which is unable to transport oxygen. Can be inherited but also can be acquired through exposure to chemicals, such as excess nitrates in water.

**Microbiology;** Study of microorganisms.

**Microenvironment;** Environment in which an organism or population of organisms live that is very small in size, such as underneath a submerged boulder or inside a particular cave.

**Migration;** Travel periodically from one place, region, or climate to another for feeding or breeding.

**Migratory Bird;** Bird that travels across international borders during yearly migration.

**Millimicron;** One thousandth of a micron; one millionth of a millimeter, or ten angstroms. A unit of length form measuring waves of light, etc.

**Mimosine;** Toxin found in certain legumes; cooking inactivates the toxins.

**Mineral;** Solid inorganic substance not made by people, made up of only one element or chemical compound throughout.

**Mineral, Nutritional;** Inorganic substance necessary for good health.

**Minimum Tillage;** Farming procedure in which plowing, planting, fertilizer application, and weed control are combined in order that the number of necessary operations may be minimized.

**Mississippian;** First coal forming period of the Paleozoic era. After the Devonian and before the Pennsylvanian.

**Mite;** Any of numerous tiny arthropod animals related to spiders that often live or feed on animals or plants.

**Mitigate;** To make or become less severe.

**Mitigation;** Steps taken to reduce damage to an environment or replace a damaged ecosystem with equivalent habitat elsewhere.

**Mitosis;** Cell division in which a cell divides into two daughter cells that are identical to the original cell.

**Moat;** Deep, broad ditch, usually filled with water.

**Molecule;** Smallest unit of a substance that can exist by itself.

**Mollusk;** Any of a large phylum of usually shelled and aquatic soft-bodied invertebrates (as snails, clams and squids).

**Molting;** When an insect or other arthropod sheds its exoskeleton as it grows.

**Monetary Policy;** Amount of money a government makes available. This eventually influences both its currency's exchange rate and its economy's interest rates.

**Money Market;** International markets for currencies' buying and selling, which establishes the equilibrium prices for each currency. This then establishes each currency's exchange rates against foreign currencies.

**Mongoose;** Any of a group of small agile mammals related to civet cats and fed on small mammals and fruits.

**Monkey Fish;** Gobies and blennies which walk on land using their fins; have unique facial features hence their peculiar common name.

**Monocot;** Any of the class of chiefly herbaceous seed plants, having an embryo with a single cotyledon and parallel-veined leaves.

**Monogamous;** Practice or state of being married to only one person at a time and its equivalent male-female permanent pair

bonding in wildlife and fish populations.

**Monopoly;** Exclusive control of a commodity or service in a given market.

**Monotypic, Monoculture;** Agricultural practice in which fields are planted with a single species.

**Monsoon;** Climate caused by periodic continental-scale wind flows of Southern Asia.

**Morphology;** Description of what an organism looks like.

**Mucilage;** Thick sticky substance in certain plants.

**Mudflat;** Muddy bottom that is exposed at low tide.

**Mulch;** Leaves, straw, etc. spread around plants to conserve water and for other purposes.

**Mule;** Hybrid (most always nonfertile) offspring of a donkey and a horse.

**Multiplier Method;** Valuation of a nonmarketed resources by calculating the cumulative value of all transactions of communities associated with its use.

**Mutation;** Inherited physical or biochemical change in the genetic material.

**Mutagen;** Substance known to cause mutations.

**Mutualism, or Mutualistic Symbiosis;** Relationship between two species in which each one benefits by the activity of the other.

**Mycelium, Mycelia;** Mass of branching filaments that form the body of a fungus.

**Mycorrhizae;** Complex mutualism association of a plant root and a fungus. Root provides fungus nutrition and fungus assists root with nutrient uptake.

## **N;**

**Naiad;** Nymph stage of some insects; naiads are nymphs that live in water.

**National Ambient Air Quality Standards;** National standard levels of allowable air pollutants as defined in the Clean Air Act.

**National Pollution Discharge Elimination (NPDES) Permit;** US Environmental Protection Agency permit required prior to the discharge of a pollutant by an identified 'point source', such as from an industry's effluent pipe.

**National Register of Historic Places;** Document of the Department of the Interior that is a central data base of nationally significant historic properties.

**Native Plant;** Indigenous or endemic plant.

**Natural Resource Trustee;** Agency of US government allocated money as part of settlement or ruling from a company found to be responsible for habitat contamination. Funds are then used to develop or improve other habitats.

**Natural Resource;** Resource that exists in the natural environment.

**Natural Selection;** Natural process by which organisms are adapted to their environment. For a given area, the less well adapted plants and animals will die or be forced to move to another area.

**Neap Tide;** Lowest high tides and the highest low tides, that occur during the first and last quarter moon phases.

**Neem;** Tree (*Melia azadirachta*) that produces chemicals used as insecticides.

**Negative Economic Incentive;** Taxes, quotas, and other government control measures intended to control, and sometimes even bring an end to a particular business activity.

**Nekton;** Organisms that swim strongly enough to move against the current.

**Nematocyst;** Spirally coiled, hollow thread contained in the cnidoblast of cnidarians and used to trap and paralyze prey.

**NEPA, National Environmental Policy Act;** Major federal law requiring that environmental reviews occur for federal agency actions.

**Neritic;** Open ocean environment above a continental shelf.

**Net Energy;** Relative amount of energy available from a process or a resource after energy losses and outside energy inputs have been subtracted.

**Neuston;** Organisms that live right at the top surface of a body of water.

**Neutral, (pH 7);** Solution that is halfway between acid and alkaline with an equal number of hydrogen and hydroxyl ions.

**Niche;** Role that an organism plays in the ecosystem.

**Nicotine Sulfate;** Insecticide that is extracted from tobacco.

**Nitrate (NO<sub>3</sub>);** Salt or ester of nitric acid. Form of nitrogen most easily assimilated by plants.

**Nitrite (NO<sub>2</sub>);** Salt of nitric acid. A stage in the nitrogen nutrient recycling process. A compound, sodium nitrite is also applied as a food preservative.

**Nitrogen (N);** Tasteless, odorless, gaseous chemical element, constituting 78% of the earth's atmosphere by volume. Critically important biological nutrient.

**Nitrogen Compound (NO<sub>x</sub>);** Compound of Nitrogen and Oxygen; the subscript "x" being substituted with a low digit number; includes Nitrates (NO<sub>3</sub>) and Nitrites (NO<sub>2</sub>).

**Nitrogen Cycle;** Movement of nitrogen through the earth's biosphere.

**Nitrogen Fixation;** Conversion of nitrogen gas into nitrogen compounds that can be utilized by autotrophs.

**No Net Loss;** US Army Corps of Engineers, US Environmental Protection Agency, and US Fish and Wildlife Service policy, per an Executive Order, mandating replacement of all wetlands converted to dry land during development.

**Nocturnal;** Most active during the night. Rests during the day.

**Node,** referring to a **Plant Part;** Thickened, swollen area of a plant, especially where new leaves or branches

arise.

**Nodule, Root;** Small lump or swelling of a root where an abundant amount of *Rhizobium sp.* bacteria fix atmospheric nitrogen.

**Noise;** Noticeably unpleasant sound.

**Noise source, Mobile;** Erratic, disturbing, unwanted sounds from a moving source, usually transportation related.

**Noise source, Stationary;** Erratic, disturbing, unwanted sounds from a source that does not move; examples include power plants, generators, and loud air conditioners.

**Noise source, Temporary;** Erratic, disturbing, unwanted sounds that do not last long or occur very rarely; examples include gunshots or noises from a construction site.

**Non-attainment Area;** Area subject to stricter air quality standards due to continuously exceeding air quality standards.

**Non-Market Goods and Services;** Goods and services that are not bought and sold.

**Non-native Species;** See introduced species.

**Normal Fault;** Sometimes called a common fault or gravity fault. Geologically it is an inclined fault in which the hanging wall appears to have slipped downward relative to the footwall.

**North American Free Trade Agreement (NAFTA);** Trade agreement, implemented in 1994, between Canada, Mexico, and the United States which encourages trade amongst these three nations by removing certain tariffs.

**North Pacific Counter-current;** Eastward moving surface current moving from Asia to the North American continent.

**North Pacific Equatorial Current;** Westward moving surface current moving from Latin America to the Asian mainland.

**Notch, Geologic;** "Bite mark" of a rock formation formed at the sea's coastal edge; most often formed by algal grazing snails another bioerosional organisms.

**Noxious;** Harmful, especially to health.

**NPK, Fertilizer Formula;** Nitrogen %, phosphorous %, and potassium %.

**Nucleus;** Location with higher cells which contains its DNA.

**Nuisance;** Act, thing, or person causing some trouble or annoyance.

**Nutrient;** Raw material, other than carbon dioxide and water, which is needed by an autotroph to produce organic matter.

**Nutrient Cycling;** Movement of nutrients through an ecosystem that causes them to be recycled over and over again.

**Nymphs;** Young stage of insects with an incomplete metamorphosis.

## **O;**

**O-Horizon;** Layer of organic material above the A-horizon as in forests and grasslands.

**Object, Historic;** Archeological discoveries that are small enough to be portable, such as tools, weapons, and cooking instruments.

**Obligate Symbiosis;** Form of symbiosis in which the partners must be accompanied by the other partner for survival.

**Obligate;** Obligated or required to living in certain conditions; limited to a certain condition of life.

**Observable;** Able to be seen, observed.

**Obsidian, or Volcanic Glass;** Igneous rock that has hardened from magma so fast that no crystals formed.

**Ocean Trench;** Very deep elongated channel in the deep ocean's seafloor.

**Oceanic;** Referring to the farther out open ocean environment, as opposed to the near-coastal, neritic ocean environment.

**Oceanographer;** Scientist who specializes in the study of the physical and/or biological characteristics of the ocean.

**Oceanography;** Scientific study of the living and nonliving features of the oceans.

**Ocelli;** Simple eyes found in many insects. These simple eyes only detect light.

**Oikos;** Ancient Greek word, meaning 'house'. Root word for both 'ecology' and 'economics'.

**Oil Cartel;** Cartel of companies or nations formed to control the production and distribution of oil.

**Oil Spill;** Small or large unintended discharge of oil or oil-based substance into a water body.

**Oligotrophic;** Term used to describe waters with low concentrations of plant nutrients.

**Omnivore;** Animal that eats both plant and animal tissue.

**On-Line Card Catalogue;** Electronically Internet-accessible catalog of a library's holdings.

**Open Government Act;** Law of the CNMI requiring certain actions, such as public notices, be undertaken to allow citizens to be aware of what's going on in our government and to have more access to decision-makers.

**Open Ocean;** Ocean waters, often referring to water that are beyond the sight of land.

**Open System;** System which receives inputs from the outside and/or from other systems.

**Operculum;** Hard covering of the gill chamber of a fish.

**Opportunity Cost;** Additional cost involved with selecting a substitute good.

**Optimum;** Best or most favorable degree, condition, etc.

**Optimum Level of Tolerance;** Best set of environmental conditions suited to a particular organism.

**Oral History;** Historical data consisting of personal recollections, usually in the form of a tape recorded interview; the gathering and preserving of such data.

**Order;** Classification group that includes a number of different "families" of organisms.

**Ordovician**; Second period of the Paleozoic era, immediately following the Cambrian and preceding the Silurian. Characterized by an abundance of invertebrate life.

**Organelle**; Membrane-bound specialized structure within a cell.

**Organic**; Containing the element carbon.

**Organic Evolution, Theory of**; Current scientific explanation that the various kinds of plants and animals alive today are descended from earlier, more primitive organisms which lived in earlier times.

**Organic Farming**; Growing vegetables with only organic fertilizers, such as bone meal and manure, to add nutrients back to a soil. Also farming without inorganic pesticides.

**Organic Insecticide**; Insecticide that is a natural product, extracted from organisms.

**Organic Muck**; Black grey mud of wetland ecosystems.

**Organophosphate**; Class of synthetic insecticides.

**Origin of Species**; Shortened name of highly influential book written by Charles Darwin.

**Ornithologist**; Scientist who specializes in the study of birds.

**Orographic Effect**; Physical geographic effect, usually on weather regimes, caused by mountains.

**Osmosis**; Movement of water across a semi-permeable membrane.

**Ovary**; Female reproductive organ. Produces eggs in animals and ovules in plants. The ovary swells and is eaten as a plant's fruit.

**Oviparity**; Producing of eggs which hatch after leaving the body of the female.

**Ovipositor**; Long, pointed egg-laying tube in some female insects.

**Ovoviviparity**; Producing of eggs with enclosing membranes that are hatched within the female so that the young are born alive.

**Oxidation**; Condition of a material being combined with oxygen (iron rusts because it is exposed to the air).

**Oxygen (O)**; Colorless, odorless, gaseous chemical element that is found in the air, is essential to life, and is involved in combustion.

**Ozone**; Spherical form of oxygen that collects high in the atmosphere.

**Ozone Hole**; Area of the earth's stratosphere above Antarctica that is severely depleted in its ozone amount.

**Ozone Layer, Stratospheric**; Atmospheric layer at heights of about 25 miles with high ozone content which blocks most solar ultraviolet radiation.

## **P;**

**Paleontology**; Science dealing with the life of past geological periods as known by fossil remains.

**Paleozoic**; Geologic era between 570 and 225 million years before present. Characterized by the first fishes, reptiles, and land plants.

**Palmate**; Having a shape similar to a hand with the fingers outstretched.

**Palustrine**; Wetland dominated by emergent vegetation, such as a marsh or a swamp.

**Pangaea**; Hypothetical single land mass that split apart and formed the present continents.

**Pantropical**; Occurring throughout the tropical regions of the earth.

**Parallel**; One of the imaginary lines of longitude;

**Parasite**; Organism that lives on or in the body of another organism, the host, from which it receives nourishment.

**Parasitism, or Parasitic Symbiosis**; Relationship in which one organism benefits and the other is harmed.

**Parasitoid**; Organism that develops inside a host, killing the host as they develop.

**Parent Material**; Broken rock, formed by weathering, from which soil forms.

**Park**; Land, often wooded land, held as part of a public reserve. Often includes pathways, playgrounds, etc. for recreation.

**Parthenogenesis**; Reproduction from an unfertilized ovum, seed, or spore.

**Pathogen**; Disease-causing bacteria and protozoa.

**Pelagic**; In the water column, away from the bottom.

**Pennate**; Bilaterally-symmetrical form of the silica tests of diatoms, particularly those of the Class Pennales. Also used to describe a feather-like or wing-like shape.

**Pennsylvanian**; Sixth period in the Paleozoic era, following the Mississippian and preceding the Permian.

**Perennial**; Continuing to live from year to year (plants); present at all seasons of the year (streams).

**Period, Geologic**; Subdivisions of geologic eras.

**Permeable**; Property of a material such as a rock, of having tiny spaces through which water may flow.

**Permian**; Seventh and last period in the Paleozoic era. Characterized by increasing reptile life, major mountain building, and glaciation.

**Permit**; Written document granting permission or license.

**Permit Condition**; Written requirement incorporated with an agency-authorized permit.

**Persistent**; Continuing, especially when faced with opposition. Continuing to exist, endure.

**Perspiration**; Act of perspiring, sweating.

**Pest**; Organism that is living or growing in a way that humans do not want.

**Pest Monitoring**; Measuring and counting pest populations so the pest can be most effectively controlled.

**Pesticide**; Any chemical used for killing insects, weeds, rodents, etc.

**Petiole**; Stalk portion of a leaf.

**Petroglyph**; Rock carving, especially a prehistoric one.

**pH**; Value used to express relative acidity and alkalinity.

**Phase, of Matter**; State of matter, either solid, liquid, or gas.

**Phase, of the Moon;** Apparent shape of the lighted part of the moon. The shape changes as the moon moves.

**Phenomenon;** Observable fact or event, and outward sign of the working of the laws of nature.

**Pheromone;** Chemical scent used by insects for communication.

**Phosphorous (P);** Element that is essential to life.

**Photic or Euphotic Zone;** Uppermost layer of a water body into which d circles on the earth's surface that is parallel to the equator and mark the latitude.

**Photoperiodism;** Behavioral or physiological reaction of an organism to variations in the intensity of light (as in some plants, by flowering or ceasing to flower).

**Photosynthesis;** Process by which plants produce their own food with the help of sunlight.

**Phototaxis;** Movement of an organism in response to stimulus of light.

**Phototropism;** Movement of a plant part toward or away from light sources.

**Phylum;** Any of the broad principle divisions of the animal kingdom.

**Physical Geology;** Branch of geology concerned with the structure and composition of earth and the physical process which affect it.

**Physicist;** Scientist who specializes in the study of physics.

**Physiology;** Branch of biology dealing with the functions and functioning of living matter and organisms; functional processes in an organism or any of its parts.

**Phytoplankton;** Plant life of plankton.

**Phytoplankton Bloom;** Abundant growth in phytoplankton in response to a sudden increase of nutrients.

**Pictograph;** Symbolic rock painting, especially a prehistoric one.

**Pigment;** Coloring matter.

**Pinna;** Leaf-like structure of an algae or a fern.

**Pinnacle;** Slender, pointed rock formation.

**Pioneer Vegetation;** Plants, often 'weedy' plants, which invade newly-cleared areas and survive and multiply there until climax vegetation eventually overshadows them.

**Pistil;** Female reproductive organ of a flower.

**Pitted Limestone;** Limestone whose top or side surfaces have been made into pitted patterns by solution weathering.

**Placental Viviparity;** Reproductive mode where the maternal adult gives birth to live young which had developed a yolk sac placenta.

**Plankton;** Organisms that drift in the water.

**Plankton Bloom;** Abundant and concentrated population of phytoplankton that colors the water reddish or brown.

**Plantation;** Large group of plants, and esp. trees, under cultivation.

**Planting Shock;** Plant reactions due to the severe stress placed on them when they are transplanted, this due to drastic changes in the environmental conditions of a farm or garden as compared with a plant nursery.

**Planula Larva;** Ciliated larva of cnidarians.

**Plastic Behavior;** Capacity of a solid to flow; example the flow of the asthenosphere which drives crustal plate movement.

**Plastron;** Underside shell of a turtle.

**Plate;** Very large slab of the earth's crust.

**Plate Tectonics Theory;** Current comprehensive scientific explanation concerning the processes involved in the movement of large plates in the earth's crust, causes of earthquakes, volcanoes, tsunamis, etc.

**Plow Zone;** Top six inches (15.2 centimeters) of an agricultural soil.

**Pluton;** A body of igneous rock formed beneath the surface of the earth by consolidation of magma.

**Plutonic Rock;** Formed far below the earth's surface by intense heat, pressure, and slow cooling; plutonic rocks are typically crystalline.

**Pneumatophore;** Porous, wood, specialized branch growing upright into the air from the buried roots of mangroves and providing access to the atmosphere.

**Poach;** Illegally kill and take animal or plant from a protected area.

**Pod;** Gathered marine mammals, such as in a family or larger grouping.

**Poikilotherm;** Cold blooded; organisms whose internal body temperature varies with their environment.

**Polar High;** High barometric pressure caused by falling air at the north and south poles.

**Police Powers;** Common law-recognized powers inherent in a government's jurisdiction to take actions to protect the public health, safety, and welfare of their citizens.

**Pollen Grain;** Male reproductive unit of seed plants. Contains the male gamete.

**Pollution;** Change in the natural equilibrium that is harmful to one or more kinds of organisms. Usually in reference to the introduction of wastes, included air water and solid waste pollutants.

**Polygamy;** Mating pattern in which a single individual mates with more than one individual of the opposite sex.

**Pond;** Shallow body of water smaller than a lake.

**Ponding Basin;** Technique used to control erosion by constructing an earthen basin at a development site's lowest practical point to retain runoff water, allowing it to percolate leaving sediments behind.

**Population;** All the organisms (usually in reference to a single species) living in a particular area.

**Population Ecology;** Branch of ecology focusing on population dynamics such as species abundance and interspecific interactions.

**Pore;** Tiny opening, as in plant leaves or skin, for absorbing or discharging gases and fluids.

**Porous;** Full of pores; permeable to fluids.

**Port and Industrial APC;** Coastal Resources Management area of particular concern designation for certain mapped locations around the CNMI's port and industrial areas.

**Potassium (K);** Chemical nutrient. Soft, silver-white, highly or explosively reactive metallic element that occurs in nature only in compounds.

**Potentially Responsible Party (PRP);** Particular person, company, or government entity that is identified to be possibly be amongst the entities responsible for a toxic waste dump's incorporated wastes.

**Power Generation;** Generation of electricity at a power plant.

**Pre-application Meeting;** Step in the CRM permitting process during which potential developers are informed of program rules and compliance procedures.

**Precedent, Judicial;** Act, statement, legal decision, case, etc. that may serve as an example, reason, or justification for a later one.

**Precipitate;** To separate a soluble substance out of a solution.

**Precipitation;** Any water, liquid or solid, that falls from the atmosphere to the ground; it includes drizzle, rain, snow, sleet, and hail.

**Precise;** Minutely exact.

**Predator;** Animal that lives by killing and consuming animals.

**Predict;** To say in advance, foretell what one believes will occur.

**Prediction;** Declaration (in science must always be written) in advance (as before an experimental test).

**Prehistoric;** Relating to, or existing in the period before written history began.

**Premise;** Statement of fact or supposition made or implied as a basis of argument.

**Preservation Plan;** Tool used by communities and planners to preserve local historic resources.

**Prevailing Winds;** Steadily blowing winds over large regions of the earth.

**Prevention;** Keeping something from happening, such as resource management measures intended to prevent activities that are known to harm the environment.

**Prey;** Animal hunted for food by another animal.

**Price, and Market Price;** Amount of money paid or asked for the sale of a specified thing; (Also) the cost at which something is obtained.

**Price Adjustment;** Changes in a good or service's market price due to some influential factor or reason.

**Price Inflation;** Increase in the general level of prices of a given kind.

**Price Shock;** Unexpected and unpredictable event in an economy that significantly increases the prices of a good or service.

**Primary Consumer;** Herbivore.

**Primary Production;** Conversion of inorganic nutrients into organic matter by solar energy via photosynthesis or by chemical energy via chemosynthesis.

**Prime Farm Land;** Land and its soils best suited for producing food and other agricultural purposes. Has the soil qualities needed to sustainably produce high yields when managed in accordance with modern farming methods.

**Prime Meridian;** Meridian line of 0° longitude that passes through Greenwich, England.

**Proboscis;** Long, coiled tube that butterflies and moths use to suck up food.

**Producer;** Organism or a population that uses photosynthesis or chemosynthesis to make food.

**Productivity, ecological;** Amount of carbon or energy added to the biomass of a group of organisms.

**Productivity, economic;** Creation of economic value; producing of goods and services.

**Profile, Soil;** Various layers of soil from the surface to the bedrock.

**Profit Maximization;** Maximizing of profits by minimizing the costs of production.

**Progeny;** Offspring; children; descendants.

**Prohibition;** Forbidding by law of certain actions or behaviors.

**Promulgation of a Regulation;** To make a regulation go into effect via a public announcement and publishing of its terms.

**Prop root;** Outward angled support root of mangrove plants that helps hold the main trunk upright in the soft muck.

**Protein;** Organic compound containing carbon, hydrogen, oxygen, and nitrogen, that living things need for growth and repair and for control of chemical reactions.

**Proterozoic;** Precambrian era, especially the late Precambrian.

**Protist;** Any of a large group (Protista) of one celled organisms having characteristics found in both plants and animals.

**Protophyte;** Microscopic plants made of one cell or a colony of cells basically of the same type.

**Protozoa;** Mostly microscopic animals made of one cell or more of basically the same type; living chiefly in water, however some are parasitic.

**Prove;** Show to be true.

**Pruning;** To cut off parts of a tree or shrub.

**Pseudopodia;** 'False feet' of certain protozoans, including Amoebas and Foraminiferans.

**Pseudoscorpion;** Predatory relative of scorpions abundant in certain forest litter. Have scorpion-like pincers but lack poisonous tails.

**Public Facility;** Building, park, or other facility that is owned by all the citizens in a particular jurisdiction.

**Public Good;** See 'Common Property Good'.

**Publish;** To make publicly known; announce. To issue a printed work.

**Puddling;** Damaged soil where clay particles are jammed together destroying essential air spaces between them; caused by



plowing soils when they are wet.

**Pumice**; Light, porous rock that hardened quickly, formed by magma containing expanding gases.

**Pupal stage**; Life cycle stage between larva and adult.

**Pyrethroid**; Synthetic insecticide that is similar to pyrethrum.

**Pyrethrum**; Insecticide that is extracted from chrysanthemum flowers.

**Pyroclastic**; Made up of rock materials broken into fragments through volcanic or igneous action.

## **Q:**

**Quantitative**; Capable of being measured and described in numerical terms.

**Quaternary**; Geologic period following the Tertiary period in the Cenozoic era, comprising the Pleistocene and the Holocene (Recent) epochs.

**Quota**; Number or proportion that is allowed or admitted.

## **R:**

**Radiation**; Energy given off by objects. Also the means by which the sun's energy travels through space.

**Radicle**; Lower part of an embryo seedling. The elongated spear-like structure of mangrove seedlings.

**Radioactive**; Property that some elements have of spontaneously emitting energetic particles by disintegration of their atomic nuclei.

**Radula**; In snails, a rasping tongue used to scrape algae off of rocks.

**Rafting**; Transport on a raft, logs, ocean debris, etc.

**Range of Tolerance**; Abilities of organisms to withstand varying abiotic influences of an environment, such as temperature, heat, etc. to a set extent.

**Ranger**; Person in charge of the management and protection of a portion of forest or recreational area.

**Rank Growth**; Strong and vigorous and usually coarse weedy growth.

**Rate of Exchange**; Agreed to amount of different items that, taken as sums, are understood to equal each other in value in a barter transaction. Difficulties in determining this is one important reason for invention of money.

**RCRA**; U.S. law regulating solid and hazardous wastes.

**Reactant**; Any of the substances participating in a chemical reaction.

**Reactivity**; Explosive-reacts violently if exposed to another substance such as air or water.

**Recession**; Temporary falling off of business activity.

**Recessive Trait**; Bodily characteristic that is masked or not expressed when a contrasting dominant gene or trait is present.

**Recidivism**; Habitual or chronic relapse into crime.

**Record**; Written or digitized and preserved documentation of a phenomenon.

**Recycle** and **Recycling**; To pass again through a cycle of changes or treatment; to process (as liquid bodily waste, glass, or cans) in order to regain materials for use.

**Red Tide**; Dinoflagellate bloom often associated with nutrient pulses; also a time of high toxicity in plankton-eating shellfish.

**Reducing Environment**; One characterized by little or no free oxygen (dissolved or as a gas).

**Reef Flat**; Area of the reef between the intertidal zone and the reef margin.

**Reef Tenure**; Ownership by families, clans, or village communities of the resources of a certain area of a lagoon and/or coral reef, as opposed to its ownership by the general public or a government entity.

**Regular Distribution**; Spacing of individuals in a population at specific, regular distances from each other.

**Regulation**; Order issued by an executive authority of government and having the force of law.

**Relative Humidity**; Ratio of the amount of water vapor actually present in the air to the greatest amount possible at a given temperature.

**Remittance**; Sending of money earned while working as a guest worker in one country, back to one's own family, friends, or business associates in one's country of origin.

**Renewable Resource**; Resources that can regenerate and renew themselves.

**Repeatable**; Able to be repeated.

**Representative Democracy**; Type of democracy in which citizens delegate authority to elected representatives.

**Reproducible Result**; Requirement of scientific knowledge that a scientist's results can be repeated by others who duplicate the scientist's methods.

**Reproductive Isolation**; Mechanisms, such as geographic barriers, that prevent two or more populations from exchanging genes, thus separating their gene pools.

**Reservoir**, as in **Reservoirs of Pathogens**; Organisms, often non-diseased organisms, that are hosts of pathogens, and can allow for a pathogen to re-inhabit a population even if the diseased organisms die or get cured.

**Resistant**; Word that means an individual organism is not easily affected by a substance.

**Resource**; Something that lies ready for use or that can be drawn upon to take care of a need.

**Resource Management**; Academic discipline(s) regarding the principles and practices of wise management methods as they are applicable to one or more jurisdiction's resources, commonly environmental resources.

**Resource Scarcity**; Situation where there are not enough resources to accommodate everyone.

**Respiration**; Process that releases energy from complex organic substances.

**Restricted Use Pesticide**; Pesticide that, due to its toxicity, requires that an applicator obtain a special

license from the government to apply it.

**Retted;** Soaking in seawater of plant fibers.

**Return Period;** Predicted long term frequency of expectable storms, based on analysis of averaged data collected from past years.

**Reuse;** Using a product, such as a bottle or shopping bag, more than once before throwing it away.

**Revenue Value;** Quantity of a marketed resource produced multiplied by its price.

**Revised Hypothesis;** Hypothesis that has been changed due to a discovered error.

**Revised Universal Soil Loss Equation;** Present standard method and formula whereby engineers and soil scientists predict an area's probable soil loss from erosion resulting from a planned land use or agricultural methodology.

**Rhizome;** Underground stem.

**Rhyolite;** Kind of volcanic rock commonly occurring as a lava flow, containing much silica, granite-like in composition but with a fine grained texture.

**Ribosome;** Organelle on the surface of the endoplasmic reticulum that aids in protein manufacturing.

**Richter scale;** Scale for expressing the magnitude of a seismic disturbance (as in earthquakes) in terms of the energy dissipated within it.

**Rift System;** World-wide network of rift zones.

**Rift Valley, Rift Zone;** Location of cracks, divergent plate boundaries, in the earth's crust formed as pieces of the crust separate.

**Ring of Fire,** also the **Pacific Ring of Fire;** Almost circular andesite line surrounding the Pacific ocean basin; region of active volcanism and seismicity.

**Ripple Marks;** Wave-like patterns in sedimentary rock formations that indicate an area having once been near a seashore.

**Riverine;** Referring to rivers and streams.

**Robber Baron;** Any of a number of U.S. capitalists of the 19th century who acquired vast wealth by exploitation and ruthlessness.

**Rock;** Piece of the hard part of the earth that was not made by people. It can be a single mineral or a mixture of minerals.

**Rock Cycle;** Continual change in rock types and conditions due to weathering, heat, pressure, and activity within Earth's crust.

**Rock Stratum;** See 'stratum'.

**Root Nodule;** Outgrowth of plant roots in which symbiotic nitrogen-fixing bacteria live. Common in legumes.

**Root Zone;** Where the roots of most crops are; usually top 6 inches can also be as deep as 3 feet and even deeper still for tree crops.

**Root-Bound;** Plant whose growing roots are locked up in a container or small amount of soil.

**Rooting Hormone;** Commercial powder that is added to plant cuttings containing hormones that aid in the growing of roots.

**Rotation of the Earth;** Daily turning of the earth on its axis.

**Rotenone;** Organic insecticide extracted from the roots of the derris plant.

**Runoff;** Water flowing down slope, usually used in reference to contaminated or polluted runoff water with sediments and other pollutants in it.

**Rust;** Reddish-brown coating formed on metal when exposed to air and moisture.

## **S;**

**Sacrosanct;** Very sacred, holy, or inviolable.

**Salary;** Payment made at regular intervals for a service.

**Salination;** Contamination of a soil by the excess addition of salt.

**Salinity;** Amount of salts dissolved in sea water, given as a percentage or in parts per thousand.

**Salvage Excavation and Data Recovery;** Archaeological research aimed at extracting the useful information a historic site may contain before it is destroyed by a planned development.

**Sample;** Representative piece, item, or set of individuals that show the quality or nature of the whole from which it was taken.

**Sanction;** Coercive measure, such as a trade boycott, used to punish those violating international laws.

**Sand;** Small loose particles of broken rock.

**Saprolite;** Completely decomposed rock lying in its original site.

**Saprophyte;** Living thing (esp. a plant) that lives on dead and decaying matter.

**Saturated Condition;** Submergence by water in an area shown or suspected to be a wetland, regularly for at least a 14 day consecutive period of time annually.

**Saturation Intensity;** In the process of photosynthesis, the point beyond which, as more light is added, the rate of additional glucose manufacturing within a chloroplast decreases.

**Savanna;** Grassland containing scattered trees.

**Scavenger;** Animal that feeds on dead organisms or the waste of organisms.

**Scientific Article;** Written document, developed by one or more scientists and published, usually in a scientific journal.

**Scientific Fact;** Universally found to be true; Accepted theories in science.

**Scientific Law;** Accepted theories in science that are fundamental explanations unlikely to ever be changed by future research work.

**Scientific Method;** Method for pursuit of knowledge; inc. the stating of a problem, collection of facts through

observation and

experiment, & making and testing of explanations with aim of proving them right or wrong.

**Scientific Name;** Organism's species name, consisting of the name of the genus to which it belongs and its specific epithet.

**Scion;** In grafting, the stem cutting that is inserted into the stock.

**Scleractinian;** Corals of the Order Scleractinia. Modern "hard corals" and/or 'reef-forming corals'.

**Scoria;** Cinder-like rock made from bubbly lava that hardened quickly.

**Sea;** Large body of salt water.

**Sea Level;** Level of the surface of the sea, esp. at its average level, midway between mean high tide and mean low tide.

**Sea Surface Temperature;** Temperature of the sea's surface, usually as measured by satellite imagery using infrared radiation detecting apparatuses.

**Seagrass;** Grass-like flowering plants that are adapted to live in the sea.

**Seamount;** Underwater mountain with steep sides.

**Season;** Any of the four divisions of the year, Spring, Summer, Fall or Autumn, and Winter. Also used to denote wet and dry periods. Also times when certain activities, such as forms of hunting or fishing are permitted.

**Seaward;** Moving outwards towards the sea and away from land.

**Secondary Community;** Biological community that develops as a result of a major disturbance to an area's original and/or its climax biological community, this due to successional processes.

**Secondary Consumer;** Carnivorous organisms that feed on herbivores.

**Secondary Forest;** Immature forest believed to have developed after an original forest was destroyed by fire, typhoon, war, etc.

**Sediment;** Collection of weathered rock material that has been deposited in a body of water, or on land, by a stream or the wind.

**Sedimentary Rock;** Rock that has been formed by sediment particles being cemented together, or solid crystals of some mineral that have been dissolved in water.

**Sedimentation;** Re-depositing of sediments.

**Seep;** Outward flow of fresh groundwater along a shoreline.

**Seismic Wave;** Tsunami. Wave caused by seismic, earth-shaking activity.

**Seismograph;** Instrument that senses and records earthquake waves.

**Seismologist;** Scientist that specializes in recording and interpreting records of earthquakes.

**Self-Pollination;** Transfer of pollen from the anthers to the stigmas of the same plant, either done naturally or done by people.

**Sennit;** Flat, braided material made by plaiting strands of rope yarn.

**Sequential;** Characterized by or forming a regular sequence of parts.

**Service;** Performance of a desired activity.

**Sessile;** Permanently attached and not free to move about.

**Settling, as in Sewage Treatment;** First stage in sewage treatment, which relies on screening and the settling out of insoluble materials.

**Sewage;** Waste materials carried off by sewers.

**Sexual Dichromatism;** Situation in a species of organisms where there is no coloration difference between males and female members of the population.

**Sexual Reproduction;** Reproduction by the union of male and female gamete cells.

**Shearline;** Broad, moving or stationary, upper level low pressure system or "front"; about equal in temperature on either side of it.

**Shield Volcano;** Large volcanoes with gently sloping sides; usually produce liquid, basaltic lava in relatively mild eruptions.

**Shift in Demand;** Situation within an economy wherein the market demand for a good or service either increases or decreases as a result of some economic stimulus.

**Shore Zone;** Location of land that is in contact with a body of water.

**Shoreline APC;** Coastal Resources Management area of particular concern designation for shoreline areas, defined as within 150 feet of the shoreline's mean high water mark.

**Shrub Layer;** Zone of a forest community between the herb layer and the tree layer.

**Side Dressing;** Application of fertilizer at the ground's surface, next to the targeted plant.

**Silent Spring;** Influential book written by Rachel Carson.

**Silica (SiO<sub>2</sub>);** Mineral that consists of silica and oxygen. See also 'silicon dioxide'.

**Silicon Dioxide;** Silica. White or colorless, vitreous, amorphous, insoluble solid (SiO<sub>2</sub>). Found in the earth's crust as crystalline (quartz), amorphous (opal), and impure forms (sand). Major component of manufactured glass.

**Sill;** Flattened piece of igneous rock forced between beds of stratified rocks.

**Silt;** Fine earth, especially particles of such soil floating in rivers, streams, and lakes; a deposit of silt.

**Siltation;** To cover the bottom of a lagoon or reef with fine-grained sediment carried and deposited by water.

**Silurian;** Geologic period after the Ordovician and before the Devonian in the Paleozoic era. Characterized by extensive coral reefs and an abundance of invertebrate animals.

**Slash & Burn Farming Practice;** Cutting of forest and shrubs, piling of limbs, drying and burning these to clear land and fertilize soils.

**Slump;** Downhill mass movement of soil.

**Smallpox;** Contagious viral disease of humans formerly common but now eradicated.

**Smog;** Thick haze caused by the action of sunlight on air polluted by smoke and automobile exhaust.

**Smog Alert;** Public notice that smog is likely and to take precautions, such as staying indoors and not overexerting one's self. Also triggers air polluting factory shutdowns.

**Smoke;** Gas from burning material in which is suspended particles of soot.

**Soil;** Top layer of the earth's surface, consisting of rock and mineral particles mixed with organic matter and voids, which is suitable for growing plants.

**Soil Aggregate;** See 'crumbs'.

**Soil Contraction & Expansion;** See 'contract and expand'.

**Soil Expansion;** See 'expand'.

**Soil Fertility;** Degree to which the relative needed levels and availability of plant nutrients occur in an area.

**Soil Genesis;** See 'genesis'.

**Soil Profile;** Combination and sequence of layers or "horizons" of a soil.

**Soil Solid;** See 'solid'.

**Soil Texture;** See 'texture'.

**Soil Void;** See 'void'.

**Solar Energy;** All energy forms that radiate from the Sun, including visible and invisible forms of radiation.

**Solid,** as in **Soil Solid;** Solid particle with the soil's profile, including sand, silt, clay, and organic matter fragments.

**Soluble;** Capable of being dissolved in a liquid.

**Solution;** Liquid that has materials dissolved within it.

**Solvent;** Liquid substance capable of dissolving or dispersing one or more other substances.

**Sonic Boom;** Explosive sound caused by lightning or by an aircraft traveling faster than the speed of sound.

**Source Reduction;** Reduction of packaging materials, reuse of bottle, and other methods to cut back waste volume.

**Southern Oscillation;** Atmospheric pressure and wind direction changing conditions in the Southern Hemisphere corresponding to the periodic warming of El Niño and cooling of La Niña.

**Spadix;** Spike-like structure of some plants, bearing flowers or fruits. Early on it is enclosed by a spathe.

**Spathe;** Flower part that, for a period, encloses its reproductive organs.

**Spawn;** Release of gametes into the water column, where fertilization takes place.

**Special Purpose Map;** Master plan maps indicating where sewer, water, power, and other infrastructure are located and where these are to be expanded.

**Speciation;** Evolution of a new species from an existing species.

**Species;** Life form that is different from other life forms. Organisms that belong to one species do not normally breed with organisms that belong to a different species.

**Species Abundance;** Number of individuals of a species present in a population.

**Species Composition;** Ecological grouping's biodiversity.

**Species Diversity;** Number of different species found in a region.

**Species-specific;** Word that means that a parasite or parasitoid will affect only one species of host.

**Specific Epithet;** See 'epithet, specific'.

**Specific Heat Capacity;** Quantity of heat required to raise the temperature of a unit mass of a substance 1 degree Celsius.

**Speleothem;** Rock structure that develops inside of a cave.

**Spirilla;** Spiral-shaped microscopic organisms, particularly aerobic bacteria of the genus *Spirillum*.

**Sponge Karst;** Limestone that is so pitted above and below its surface that it gives a sponge-like appearance. Common along exposed eastern edges of the Southernmost Mariana islands.

**Spore;** Small, usually single-celled reproductive body that is highly resistant to desiccation and heat and is capable of growing into a new organism, produced especially by certain bacteria, fungi, algae, and nonflowering plants.

**Sporangium, Sporangia;** Case in which spores are produced and stored.

**Sporophyte;** Generation of plants that produces spores.

**Spreading Center;** Locations where new crust is formed; divergent plate boundaries.

**Spring;** Flow of water from the ground.

**Spring Tides;** Highest monthly high tides and the lowest monthly low tides as the sun, earth and moon combine their attractions. Occur during the new and the full moon phases.

**Spur and Groove;** System of channels, alternating with sturdy coral and coralline algal outgrowths along a reef front.

**Squall;** Sudden, violent gust of wind, often with rain.

**Stake,** as in **Staking a Plant;** Tying of plants to small supports to help them grow taller.

**Stalactite;** Icicle-shaped dripstone deposit hanging from the roof or sides of a cavern.

**Stalagmite;** Dripstone deposit resembling an inverted icicle, rising from the floor of a cavern.

**Stamen;** Male part of the flower containing the filament and the anther.

**Standard;** Something established for use as a rule or basis for comparison in measuring quality, quantity, etc.

**Standard Length;** Length of a fish from the tip of its snout to the end of its hyalural bone.

**Statistical Reasoning;** Following of proper mathematical procedures when analyzing masses of survey data to arrive at accurate and valid descriptions of the area or population under study.

**Statistics;** Branch of mathematics dealing with the collection, analysis, and interpretation of masses of numerical data.

**Statute;** Law enacted by a legislature.

**Stigma;** In the pistil of a flower, the sticky structure, supported by the style, that receives the pollen grain produced in the stamens.

**Stinger;** Appendage that some insects use to defend themselves or to kill their prey.

**Stipe;** Stem-like portion of lower plants, such as algae and ferns.

**Stomate;** Pores on the lower part of a leaf that allow gases to diffuse into and out of the internal area of the leaf.

**Storm Warning;** Advisory issued by an official meteorological agency to warn the public of approaching dangerous weather.

**Storm Watch;** Advisory issued by an official meteorological agency to indicate that conditions are favorable for the development of dangerous weather patterns, although dangerous weather conditions are not currently present.

**Straggler;** One separated from others of its own kind.

**Strand;** Strip of land along an oceanic coast whose plant-life is deeply influenced by airborne salt spray.

**Stratification;** Development or organization of something, such as a rock formation, in distinct horizontal layers.

**Stratified;** Layered.

**Stratosphere;** Subdivision of the atmosphere that lies between the troposphere and an altitude of about 30 miles.

**Stratovolcano;** Composite volcano; has alternating layers of lava and cinders; more violent in its eruptive behavior than other volcano types.

**Stratum, and Rock Strata;** Single layer of a stratified rock formation.

**Streamlined;** Having a contour designed to offer the least resistance in movement through air, water, etc.

**Stress, Ecological;** Change in the condition of an ecosystem.

**Striation;** State of being marked with stripes or lines.

**Strip Cropping;** Planting technique that reduces soil erosion through the alternation of a crop of low soil-anchoring capability with a crop of high soil stabilizing ability.

**Stromatolite;** Reef structures produced by the binding of sediments by blue green algae.

**Stromatoporeoid;** Extinct early reef building organisms.

**Structure, Historic;** Archeologically-identified human, relatively immovable construction other than a historic building.

**Style, as in Plant Flower Part;** In the pistil of a flower, the structure that extends from the ovary and supports the stigma.

**Subduct;** To pull or draw downward.

**Subduction Zone;** Location where one of the earth's plates dives down below another.

**Sublittoral;** Shallow water area that is never exposed by low tides.

**Subpolar Low;** Location of rising air at about 50 to 70 degrees latitude, with some of its rising air joining the polar cell circulation and some joining the temperate cell circulation.

**Subsoil;** Weathered material just below the topsoil layer.

**Substation, as in Power Distribution;** Part of a utility's power distribution system that changes very high voltage electricity into lower voltages so that it can be suitably provided to homes and businesses within a community.

**Substitution Effect;** Competitive market effect caused by consumer's ability to choose alternatives substitutes; helps to maintain lower prices.

**Substrate;** Base on which a plant or animal lives.

**Subtropical High;** Areas of low pressure at around 30 degrees latitude, north and south of the Equator resulting from falling air from the two tropical 'Hadley' convection cells.

**Succession, Ecological;** Slow, regular sequence of changes in the regional development of communities of plants and associated animals, culminating in a climax characteristic of a specific geographical environment.

**Succulent;** Plant which has thick, fleshy, water-storing leaves or stems.

**Sucker;** Shoot which develops from the roots or lower part of a plant.

**Suckering;** Removal of plant suckers.

**Sue;** To petition a court for a legal redress of a grievance(s), or a recovery of right. To file and press a legal lawsuit.

**Sulfur (S);** Nonmetallic element used esp. in chemical and paper industries and in vulcanizing rubber; A trace element of soil and an important plant micronutrient.

**Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>);** Oily, heavily corrosive strong acid.

**Summer Solstice;** Usually on or near June 21 in the Northern Hemisphere when the earth's equatorial plane relative to the sun is furthest north, at the Tropic of Cancer.

**Sunflower;** Tall plant having large, yellow or red, daisy-like flowers.

**Sunn Hemp;** *Crotalaria juncea*. Plant used for cover crop, green manure and natural mulch; allowing planting in wet season without tillage.

**Superfund;** Euphemism for the Comprehensive Response Compensation and Liability Act; identifies

responsible parties for

liability for toxic dumps, and, if no liability is determined, provides federal funds for clean up needs.

**Superorganism**; Group of organisms, such as an insect colony, that functions as a social unit.

**Superphosphate**; Acid phosphate, esp. a mixture mainly of monobasic calcium phosphate and gypsum, made by treating bone,

phosphate, etc., with sulfuric acid and used as a fertilizer.

**Superposition, Law of**; In a normal sequence of rocks, the older rocks will lie underneath younger ones.

**Supertyphoon**; Tropical cyclone with sustained wind speeds in excess of 120 mph.

**Supply**; Output of a good that producers are willing and able to provide under the operating conditions present at any given point in time.

**Supply and Demand**; When price is the only variable, as price increases, demand decreases and supply increases. As price decreases, demand increases and supply decreases.

**Supremacy Clause**; Clause in Article VI of the U.S. Constitution declaring the constitution, laws, and treaties of the federal government to be the supreme law of the land to which judges in every state are bound.

**Surf**; Waves that break upon the shore; also the sound or foam of breaking waves.

**Surface Current**; Current of surface waters caused by prevailing wind patterns.

**Surface Pitting**; Solution-caused rough edges and pits of limestone rocks, particularly those closest to a shoreline.

**Surface Tension**; Property of liquids arising from unbalanced molecular cohesive forces at or near the surface. As a result, the surface tends to contract having properties like those of a stretched elastic membrane.

**Surge Channel, Surge Zone**; See 'spur and groove'. Location where waves break over a reef and returning water flows rush back out to sea.

**Survey Data**; Raw data produced in a survey.

**Survey**; Organized method of examining an area or a population.

**Survival of the Fittest**; Natural selection. Struggle for life in which only those organisms best adapted to existing conditions are able to survive and reproduce.

**Sustainable, Sustainability**; Goal of using resources in such a way that future generations can continue to use them forever.

**Sustainable Development**; Development balancing near-term interests with the protection of the interests of future generations.

**Swamp**; Spongy, tree-inhabiting wetland.

**Swarmer**; Reference to a form of zooxanthellae that is free living and not associated symbiotically with another organism.

**Symbiosis** and **Symbiotic Biological Association**; Living together in close association of two dissimilar organisms.

**Synthesize**; Combining of parts or elements so as to form a whole, a compound, etc.

**Synthetic Insecticides**; Insecticides produced in laboratories; they are not natural products.

**Systematics**; Science of a system of classification; taxonomy.

## **T:**

**Take**, as in **Endangered Species Taking**; To harass, pursue, hunt, harm, capture, shoot, wound, kill, trap, collect, or attempt to engage in such conduct with respect to an endangered species.

**Tariff**; List or system of taxes on exports or imports.

**Tarsus**; Last segment of an insect leg; the "foot" of an insect.

**Taxon, Taxa**; Groups used by scientists to classify organisms. Taxa include kingdom, phylum, class, order, family, genus, and species.

**Taxation**; Compulsory payment of a portion of income, property value, etc. for the support of a government.

**Taxis**; Movement of an organism toward or away from some external stimulus.

**Taxonomy**; Study of how organisms are grouped or classified. The process of naming and classifying organisms.

**Technology-based Standard**; Criteria used by the U.S. Environmental Protection Agency to insure certain industries and municipalities use best available technologies to minimize pollution from their plants.

**Teleost Fish**; Any of a large class of currently living fish with a symmetrical tail and a swim bladder.

**Tendril**; Slender, coiling, twining, organ by which a climbing plant grasps its support.

**Terrace**; Flat shelf on a hillside.

**Territoriality**; Behavior pattern exhibited by an animal in defending its territory.

**Territory**; Area actively defended by an individual or by a group of animals that inhabits it.

**Tertiary**; First period of the Cenozoic. Characterized by the appearance of modern flora and of apes and other large mammals.

**Tertiary Consumer**; Carnivorous organisms that feed on other carnivores.

**Testable**; Able to be tested.

**Texture**, as in **Soil Texture**; Relative percentages of sand, silt, and clay particles in a soil.

**Thatch**; Plant stalks or foliage, such as reeds or palm fronds, used for roofing.

**Theory**; Major hypothesis (explanation) that is generally accepted because it continues to survive extensive testing, generates successful predictions, and explains certain observations.

**Thermal Energy**; Heat energy.

**Thermal Pollution**; Harmful introduction of waste heat into the air or water.

**Thermal Vent;** Deep ocean hot springs at rift zones or underwater volcanoes which have water temperatures as high as 380 degrees Celsius.

**Thermal Vent Community;** Community of organisms that live around deep thermal vents.

**Thermocline;** Region in a thermally stratified body of water that separates warmer surface water from cold deep water.

**Threatened Species;** Having an uncertain chance of continued survival; esp., likely to become an endangered species.

**Thunder;** Loud sound (sonic boom) caused by lightning.

**Thunderstorm;** Storm accompanied by lightning and thunder.

**Tidal Current;** Movement of water caused by the increasing and decreasing tide levels.

**Tidal Range;** Difference in water level between successive high and low tides.

**Tide Pool;** Depression in a shoreline that is left filled with water when the tide is out.

**Tide, and Tides;** Alternate rise and fall of the oceans, seas, etc. caused by the attraction of the moon and sun and the turning of the earth.

**Tilth;** Quality that a soil has that helps seeds within it to germinate.

**Tolerant;** Able to withstand some influence, such as an environmental factor.

**Top Carnivore;** Highest carnivore in a food chain.

**Topographic Map;** Map depicting the surface features of a region, including its relief, by using contour lines and other map symbols.

**Topography;** Outline of the form of a place showing its relief and position of features.

**Topsoil;** Top layer of the weathered rock and mineral material at the earth's surface. It usually contains dead plant matter.

**Total Length;** Measurement of fisheries management from the tip of the mouth to the farthest point on the tail

**Total Maximum Daily Load (TMDL);** Calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

**Toxicity;** Poisonous nature of a substance; a measure of the degree to which it is poisonous.

**Toxin;** Poisonous substance.

**Trace Element;** Chemical element, as iron, copper, zinc, etc., essential in plant and animal nutrition, but only in minute quantities.

**Trade Balance;** Ratio of the amount and value of the exports and imports being exchanged between a country and the rest of the world, or between two particular countries.

**Trade Union;** See 'union'.

**Trade Wind;** Band of prevailing winds north and south of the equator, blowing from the east.

**Tragedy of the Commons;** Metaphoric phrase popularized by Garrett Hardin in his 1968 *Science* journal article of the same name, to illustrate the conflict between individual interests and the common good.

**Trait, Genetic;** Inherited characteristic.

**Transaction Costs;** Time, effort, uncertainty

**Transaction;** Something transacted, esp. a business deal.

**Transboundary Pollution;** Pollution that travels from one country to another.

**Transform Plate Boundary;** Plate boundary where two plates move side to side along and against each other, with neither being subducted.

**Transitory;** Of brief duration.

**Transparency;** Characteristic degree to which a body of water or other medium, allows for the transmittance of light rays through it.

**Transpiration, also Evapo-transpiration;** Evaporation of water from leaves, causes the pulling of water from inside the plant to replace the evaporated water.

**Transplant, & Transplanting;** To dig up and plant elsewhere.

**Travel Cost Method;** Measure of a "price" of a nonmarketed resource by identifying the costs one pays to get to it.

**Travertine;** Light-colored porous calcite, CaCO<sub>3</sub>, deposited from solution in ground or surface waters and forming, among other deposits, stalactites and stalagmites.

**Treaty, International;** Agreement made by negotiation or diplomacy esp. between two or more governments.

**Tree Layer;** Uppermost zone of a forest community.

**Triassic;** First period of the Mesozoic era. characterized by the diversification of land life, the rise of the dinosaurs, and the appearance of the earliest mammals.

**Tributary;** River or stream that flows into another river or stream.

**Trophic Level;** Each step in a food chain.

**Tropic of Cancer;** 23 degrees, 26 minutes North Latitude.

**Tropic of Capricorn;** 23 degrees, 26 minutes South Latitude.

**Tropical Cyclone;** Tropical storm with sustained wind speeds above 74 mph.

**Tropical Depression;** Tropical storm with sustained wind speeds from 24 - 38 mph.

**Tropical Disturbance;** Tropical system of storms with sustained winds up to 23 miles per hour.

**Tropical Marine;** Climate type of the tropical Mariana Islands with weather and climate greatly influenced by our nearby marine environment. Generally warm and humid, moderated by northeast trade winds.

**Tropical Monsoon;** Monsoon flow of weather formations of southeast Asia spread out over our Western

Pacific region.

**Tropical Storm;** Tropical storm with sustained wind speeds from 39 - 74 mph.

**Tropism;** Tendency of a plant or animal to grow or turn towards, or away, from a stimulus, such as light.

**Tropopause;** Boundary between the troposphere and the stratosphere, varying in altitude from approximately 8 kilometers (5 miles) at the poles to approximately 18 kilometers (11 miles) at the equator.

**Troposphere;** Lowest subdivision of the atmosphere, and the site of most weather events.

**Trough;** Lowest point of a wave.

**Tsunami;** Huge sea wave caused by a submarine disturbance, as an earthquake or volcanic eruption, also popularly but inaccurately referred to as a tidal wave.

**Tuba;** Fermented alcoholic drink made from the sap of flower stalks of a coconut tree.

**Tuberculosis (TB);** Infectious disease characterized by the formation of tubercles in body tissues, particularly the lungs.

**Tuberous root;** Short fleshy, usually underground root, (as of a potato), bearing minute scale-like leaves, each with a bud at its base.

**Tundra;** Treeless plain of arctic and subarctic regions.

**Turbidity;** Degree of cloudiness of a water body caused by particles suspended in it.

**Turbidity Current;** Downward movement of turbid water into less turbid water below.

**Typhoon;** Common name given to tropical cyclones with sustained winds over 74 nautical miles per hour in the Western Pacific.

**Typhoon Condition 1;** Storm with typhoon strength winds almost certain to occur within the next 12 hours.

**Typhoon Condition 2;** Storm with typhoon strength winds probable to occur within the next 24 hours.

**Typhoon Condition 3;** Storm with typhoon strength winds possible to occur within the next 48 hours.

**Typhoon Condition 4;** Storm with typhoon strength winds possible to occur within the next 72 hours.

## **U;**

**Ultraviolet Radiation;** Radiation that is more energetic than the violet end of the visible spectrum and capable of breaking some chemical bonds.

**Unconformity;** Break in continuity of rock strata; separates younger from older rocks; usually results from an erosion of older surface bed before the younger bed was laid down; the surface of the contact between such strata.

**Unconsolidated;** Not cemented or hardened; loose.

**Understory;** Vegetative layer between the top layer of a forest (crown) and the ground covering.

**Uniformitarianism, Principle of;** Concept that past geologic actions and organism's environments were much the same as the present.

**Union,** as in **Trade Union;** Association of workers to promote and protect the welfare, rights, etc. of its members.

**United Nations Convention on the International Law of the Sea (UNCLOS);** See Law of the Sea.

**Universal Law of Gravity;** Gravitation between two bodies is proportional to the product of their masses and inversely proportional to the square of the distance between them.

**Universal Soil Loss Equation;** See 'revised universal soil loss equation';

**Uplifting, Geologic;** Upheaval of the earth's surface.

**Upwelling;** A rising to the surface and flowing outward; esp. the movement of deep, cold, usually nutrient-rich ocean water to the surface.

**Urban Planning;** Land use planning as it pertains to the urban environment. Also, branch of architecture dealing with the

design and organization of urban space and activities.

**Urban Soil;** Soil of an urban environment; of greatly disturbed.

**Utility;** Economic term referring to the total satisfaction received from consuming a good or service.

**Utopia;** An idealistic concept of a perfect place, especially in its environmental, social, political, and moral aspects.

## **V;**

**Value;** Amount, as of goods, services, or money, considered to be a fair and suitable equivalent for something else; a fair price or return. Also, however, worth in usefulness or importance to the possessor; utility or merit.

**Variable;** One aspect of an experiment that is free to change.

**Variation;** Divergence in the characteristics of an organism from those typical or usual for its group.

**Vascular Bundle or Plant Vein;** Circular groups of cells that are especially adapted for conducting water and dissolved minerals and nutrients through a plant stem.

**Vector;** Organism that transmits parasites from one organism to another.

**Vegetative Reproduction;** Reproduction using plant parts and cuttings, not using seeds.

**Vehicle;** Equipment or machine, usually motorized, that transports people or goods.

**Vermin;** Various destructive insects or small animals regarded as pests, such as lice, ants, rats, etc.

**Vesicle;** Small space formed in volcanic rock by entrapment of a gas bubble during solidification.

**Vesicular;** Rock having small spherical cavities (in volcanic rock) produced by gaseous bubbles.

**Veto;** Power of one branch of government to reject bills passed by another.

**Veto Override;** Overturning of a veto by another vote, usually with two thirds or more majority required.



**Viable**; Capable of living (esp. in seeds - able to germinate and develop).  
**Viscosity**; Resistance of a fluid to flow freely, caused by the friction of its molecules.  
**Visible**; Able to be seen with the naked eye.  
**Visible Light**; Electromagnetic radiation that is visible to the human eye with wavelengths between 400 and 750 millimicrons.  
**Vital Service**; Public service necessary, not optional, for a community's well being. Examples include public safety and public health services.  
**Viviparity**; Giving birth to living offspring that develop within the mother's body. Most mammals and some other animals are viviparous  
**Void**, as in **Soil Void**; Small space in a soil profile, usually filled by either water, or air, or semi-filled with both. Sometimes called a soil's 'pore space'.  
**Volcanic Bomb**; Larger rocks formed by cooled chunks of ejected lava.  
**Volcanic Cone**; Steep-sided mountain in the shape of a cone formed by a volcano. Asuncion Island is a good example of an almost perfect volcanic cone.  
**Volcanism**; See 'volcanism'.  
**V-Shaped Valley**; Land geomorphology type present where rainfall is high and ground water infiltration is low, as occurs in the CNMI at locations where bedrock is of volcanic origin.  
**Vulcanism**, also called **Volcanism**; Volcanic activity or phenomena.

## W;

**Warning**; See 'storm warning'.  
**Waste Oil**; Petroleum oil that can no longer be used as a lubricant. Also vegetable oil that can no longer be used for cooking purposes.  
**Watch**; See 'storm watch'.  
**Water Column**; Area of water from the sea's bottom to its surface; used mostly in reference to shallower to medium depth coastal waters.  
**Water Cycle**; Movement of water from the ocean to the atmosphere, to the land, and back to the ocean.  
**Water Holding Capacity of Soil**; Amount of water a soil is able to hold.  
**Water Table**; Level below which the ground is saturated with water.  
**Water Vapor**; Gaseous phase of water.  
**Watt**; Unit of electrical power, equal to the power developed in a circuit by a current of one ampere flowing through a potential difference of one volt. Also equals 1/746 horsepower.  
**Wave Base**; Depth at which molecular movement caused by a wave stops.  
**Wave Frequency**; Number of waves occurring at a certain place per a certain unit of time.  
**Wave Height**; Vertical distance of a wave from the wave crest to the wave trough.  
**Wave Period**; Time it takes two consecutive wave crests to pass a single point.  
**Wave Trough**; Lowest point of a wave.  
**Wavelength**; Distance in the line of advance of a wave from any one point (as a crest) to the next corresponding point.  
**Weather**; State of the atmosphere with respect to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness.  
**Weathering**; Process in which rock is broken down into smaller pieces or dissolved in water.  
**Weed**; Plant out of place.  
**Wetland Classification**; Set of procedures and criteria used by scientists to designate an area to be a wetland.  
**Wetlands and Mangroves APC**; Coastal Resources Management Program areas of particular designation for certain of the CNMI's wetlands and coastal mangrove areas.  
**Wilderness**; Area of land relatively untouched by human habitation.  
**Willing Seller**; Person or firm that is willing and ready to sell a particular product or service.  
**Willy Willy**; Common name given to tropical cyclones in the Australian Northeast coastal region.  
**Wind Pruning**; Regular breaking of exposed tree and shrub limbs by strong winds.  
**Windward**; Side or direction from which the wind is blowing.  
**Winter Solstice**; Usually on or near December 22 in the Northern Hemisphere when the earth's equatorial plane relative to the sun is furthest south, at the Tropic of Capricorn.  
**Woody Plant**; Plant with hard, thick, long-lived stems and branches.  
**World Health Organization**; United Nations specialized agency for health. Its objective is the attainment of all peoples of the highest level of health. Governed by 192 member nations in the World Health Assembly.  
**Wrack**; Seaweed or other marine life cast upon a shore.  
**Wrigglers**; Larvae of mosquitoes.  
**Written History**; Anthropological reference to the period after literate writers of history visited or inhabited an area, as opposed to the period when history was passed from generation to generation only by oral means.

## X;

**Xerophytic**; Plant adapted to surviving long periods without water.  
**X-ray Radiation**; Radiation of the same nature of light rays but of extremely short wavelength that is able to penetrate through various thicknesses of solids and to act on photographic film.

**Y:**

**Z:**

**Zoea;** Small planktonic stage of larval shrimp, crabs, and lobsters.

**Zone of Oxidation;** Area of an aquifer in which the pore spaces are partially, not entirely, filled with air and water.

**Zone of Saturation;** Area of an aquifer below the water table, down to an impermeable rock layer.

**Zoning;** To arrange in or mark off into zones, esp. to divide (as a town) into sections reserved for different purposes.

**Zoning Map;** Detailed land use plan incorporated within an enacted zoning law.

**Zoning Plan;** Details of the purposes, definitions, methodologies, standards, etc. of a zoning ordinance.

**Zoologist;** Biologist who specializes in the study of animals.

**Zooplankton;** Animal-like protists which must capture their food.

**Zooxanthellae;** Microscopic, single celled plant like organisms that often live in mutualistic association with cnidarians and giant clams.