GLOSSARY OF TERMS

Abiotic
Non-living. Abiotic resources comprise non-living things, for instance land, water, air and minerals.[6]

Adaptive capacity
The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.[6]

Adsorb
To take up and hold (a gas, liquid, or dissolved substance) in a thin layer of molecules on the surface of a solid substance.[3]

Aerobic
Requiring oxygen.

Algal blooms
A reproductive explosion of algae in a lake, river, or ocean.[4]

Ammonia volatilization
The conversion of ammonium nitrogen to ammonia gas by soil microorganisms. This usually occurs in soils with a high pH, that is a pH greater than 7.5, which are not common in California.[6]

Anaerobic
The absence of oxygen.[6]

Anoxic
The total deprivation of oxygen.[3]

Anthropogenic
Effects which relate specifically to human activities.[6]

Atmospheric N deposition
Nitrogen deposited on land and water surfaces. In wet deposition, nitrogen in the atmosphere is incorporated into precipitation that delivers it to the surface. In dry deposition, nitrogen is deposited directly from the atmosphere onto the surface.[2]

Biological nitrogen fixation (BNF)
Through the process of biological N-fixation (BNF), symbiotic (mutually beneficial) and nonsymbiotic organisms can fix atmospheric N_2 gas into organic N forms. A few living organisms are able to utilize molecular N_2 gas from the atmosphere. The best known of these are the symbiotic Rhizobia ("legume bacteria"), nonsymbiotic free-living bacteria such as Azotobacter and Clostridium, and the cyanobacteria. Generally, in a symbiotic relationship, one organism contains chlorophyll and uses light energy to produce carbohydrates. The other organism receives some of the carbohydrates and uses them as an energy source to enzymatically fix atmospheric N_2 into the ammonia (NH_3) form of N and thence into amino acids and other nitrogenous compounds that are nutritionally useful to the chlorophyll-containing organism.[7]

Biosolids
Nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. When treated and processed, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth.[3]

Broilers
Young chickens produced for meat.[7]

Chill hours
Hours during a cold season when air temperature is below a certain value. Fruit and nut trees require certain numbers of chill hours in order to blossom in the following season.[2]

Climate forcing (or radiative forcing)
A measure of the influence that a factor (e.g. greenhouse gases, atmospheric aerosol) has in changing the balance of energy in the atmospheric system. Expressed in watts per square meter ($W\ m^{-2}$) of the Earth's surface.[2]

CMAQ model
A computational tool used for air quality management to produce daily forecasts for ozone air quality and to assess implementation actions needed to attain National Ambient Air Quality Standards.[3]

Community water system
A public water system that serves at least 15 service connections used by yearlong residents or that regularly serves at least 25 yearlong residents. These systems are regulated under the Safe Drinking Water Act.[1]

Denitrification
The reduction of nitrate into N_2 via a series of enzymatic reactions by microorganisms in anaerobic environments. Denitrification may also occur under aerobic conditions with co-respiration of oxygen and nitrate. Both denitrification pathways involve formation of intermediate gases (NO and N_2O) that may be lost to the atmosphere.[2]

Domestic well
A privately owned well that supplies ground water for human consumption and other household uses.[8]

Ecosystem services
Benefits that people derive from ecosystems.[2]

Effluent
Water that flows from a sewage treatment plant after it has been treated.[8]

Emission factor
The average emission rate of a given greenhouse gas (GHG) for a given source, relative to units of activity.[6]

Eutrophication
The process by which water becomes enriched with plant nutrients, most commonly phosphorus and nitrogen.[8]

Growing degree days
A heat index that relates the development of plants, insects, and disease organisms to environmental air temperature.[5]

Haber-Bosch process
Method of synthesizing reactive nitrogen from hydrogen and non-reactive atmospheric N_2, developed by German physical chemist Fritz Haber in 1908 and brought to an industrial scale by Carl Bosch in 1910.[2]

Influent
Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.[3]

Irrigation well
Unregulated wells used for irrigation and other agricultural purposes, but not for drinking water.[2]

Leachate
Water containing soluble ions and compounds collected during movement through soil. See also Leaching.[2]

Leaching
The movement of soluble ions and compounds beyond the depth at which crop or plant roots can reach, due to rain or irrigation.[2]

Local small water system
A water system that serves 2 to 4 households. These often draw on a single domestic well. These systems are not regulated under the Safe Drinking Water Act.[1]

Maximum contaminant level (MCL)
Enforceable limits for nitrate and nitrite established to protect the public against consumption of drinking water that has concentrations of these contaminants high enough to present a risk to human health (e.g. 10 mg nitrate-N L^{-1} and 1 mg nitrite-N L^{-1}).[3]

N loading
Total amount of nitrogen entering an ecosystem at a given time, through both surface and subsurface transport from the surrounding landscape.[2]

N-fixing species
Microorganisms with the biological catalyst nitrogenase, which allows the conversion of atmospheric N_2 to ammonia. These microorganisms work symbiotically with certain plant species. See also biological nitrogen fixation.[2]

Nitrification
Process by which ammonium is oxidized to nitrite and then nitrate by microorganisms under aerobic conditions.[2]

Nitrogen Fixation
The biological or chemical process by which nitrogen from the atmosphere (N_2) is converted into ammonia (NH_3).[2]

Nitrogen use efficiency
The proportion of all N inputs that are removed in harvested crop biomass, contained in recycled crop residues, and incorporated into soil organic matter and inorganic N pools.[6]

Non-point source
A source from which pollution is discharged in a diffuse manner.[2]

On-site wastewater treatment systems
A system relying on natural processes and/or mechanical components to collect, treat, and disperse or reclaim wastewater from a single dwelling or building.[3]

Organic nitrogen
A nitrogen compound that had its origin in living material and is still part of a carbon-chain complex. It can enter soil as decomposed plant or animal tissue. It is not available to plants until microorganisms transform it to ammonium (NH_4^+).[6]

Partial nutrient balance
The amount of nutrient (nitrogen) in the material exported off the field divided by the amount of nutrient applied.[2]

Public water system
A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. These systems are regulated under the Safe Drinking Water Act.[1]

Reactive nitrogen
Any chemical form of nitrogen except dinitrogen (N_2).[2]

Recharge
Process by which rain water (precipitation) seeps into the ground-water system.[3]

Self-supplied water system
A water system that is not connected to a public water system, is assumed to be 1 to 2 households/ dwelling units (or connections). These systems are not regulated under the Safe Drinking Water Act.[1]

Silage
A feed prepared by chopping green forage (e.g. grass, legumes, field corn) and placing the material in a structure or container designed to exclude air. The material then undergoes fermentation, retarding spoilage. Silage has a water content of between 60 and 80%.[3]

Specialty crop
Fruits, vegetables, tree nuts, dried fruits, and horticulture and nursery crops (including floriculture).[6]

State small water system
A system for the provision of piped water to the public for human consumption that serves at least five, but no more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year. These systems are not regulated under the Safe Drinking Water Act.[1]

Synthetic fertilizer
A commercially prepared inorganic compound of plant nutrients.[2]

Urea N
A form of nitrogen that converts readily to ammonium.[3]

Volatile organic compounds (VOCs)
Any organic compound that participates in atmospheric photochemical reactions except those designated by EPA as having negligible photochemical reactivity.[3]

References

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