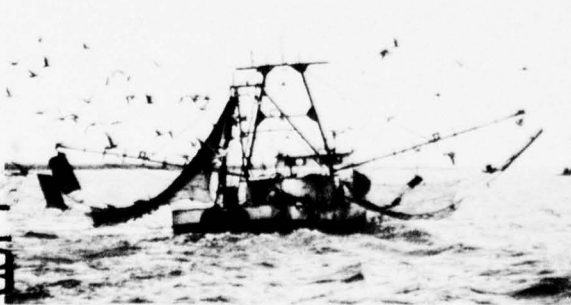


NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

Lower Mississippi Region Comprehensive Study

ADA 041346

Lower Mississippi Region Comprehensive Study ①



GLOSSARY

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FOREWORD

We would like to recognize the Missouri Basin Interagency Commission and the Pacific Northwest and Souris-Red-Rainy River Basins Commissions whose glossaries were utilized to prepare major portions of this glossary. Certain additions and revisions have been made to better describe the Lower Mississippi Region.

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GENERAL

GEOGRAPHIC

BASIN - A geographic area drained by a single major stream.

LOWER MISSISSIPPI REGION - The area in the Lower Mississippi Region includes the drainage area of the Mississippi below the mouth of the Ohio except for the White, Arkansas, and Red Rivers above the effects of Mississippi River Backwater, the Louisiana Coastal Area between the drainage divides of the Pearl and Sabine Rivers, and the flood-protected area at Cairo, Illinois.

WATER RESOURCE PLANNING AREAS - The Lower Mississippi Region is subdivided into hydrologic areas which are referred to as water resource planning areas (WRPA).

WATERSHED - All lands inclosed by a continuous hydrologic drainage divide and lying upslope from a specified point on a stream.

STUDY

COMPREHENSIVE REGION STUDY - A study for the development of the water and related land resources of the Lower Mississippi Region to make the best use of such resources to meet the region's needs and make the greatest long-time contribution to the economic growth and social well-being of the people of the region and the Nation.

TYPE 1 STUDY - A regional study coordinated by a river basin commission or other Federal interagency - State coordinating organization and providing projections of economic development, translation of such projections into demands for water and related land resource uses, hydrologic projections of water availability, both as to quantity and quality, and projections of related land resource availability, so as to outline the characteristics of projected water and related land resource problems and the general approaches that appear appropriate for their solution. A type 1 or framework study provides general guides to future water resource development. It indicates the regions, or subbasins within them, which have water problems calling for prompt detailed planning efforts and those which do not have such looming problems. It provides a substantial contribution of fact and analysis to subsequent detailed formulation.

TYPE 2 STUDY - A study of feasibility or survey scope for an area (river basin, tributary basin or subregion) with complex problems needing concerted multiagency action for their solution. A type 2 study is coordinated by a river basin commission or other Federal interagency - State coordinating organization and defines or evaluates projects and programs in sufficient detail to comprise a basis for authorization or implementation of those projects to be initiated in the next 10 to 15 years.

STUDY (CONT'D)

TYPE 3 STUDY - A feasibility grade or survey scope study of narrower geographic or analytic compass than type 1 or type 2 studies. It is undertaken by a single agency with cooperation, as necessary, of other Federal agencies and states. It forms a basis for project or program authorization, usually relating to a specific proposal for preservation or development of water and related land resources.

TYPE 4 STUDY - A State or local political subdivision sponsored survey of water and related land resources for all or part of a state, in which one or more Federal agencies participate.

PLAN

COMPREHENSIVE BASIN PLAN - A coordinated joint system or arrangement of structural and nonstructural measures, designed to guide conservation, development, and use of water and related land resources in a manner that will support and enhance the economic and social activities and general well-being in the basins. Comprehensive Plans for water supply, land use, flood control, navigation, etc., are essential elements of the general framework or strategy for guiding the future of the basins, and will provide a basis for detailed analyses sufficient to support authorization for Federal and non-Federal action programs and individual projects at all levels.

FRAMEWORK PROGRAM - The major product of a type 1 study. A general 50-year guide or strategy for management and development of the water and related land resources in a major region of the U. S.

PLAN FORMULATION - The process of developing alternative proposals for wise management and development of water and related land resources, of systematically comparing these proposals, and of developing out of them a program for conservation, development, and use of water and related land resources. The plan formulation process involves guiding the coordination of basic studies to insure consistency of approach, so that all studies can meaningfully contribute to plans and programs.

PLANNING OBJECTIVES - Broad social, economic, and cultural goals which may be attained in some degree by water and related conservation and development.

SINGLE AGENCY PLAN - A plan or proposed set of resource management and development measures derived from a type 3 study. The single agency plan states the relationship of proposed programs and projects to the Comprehensive Plan, or if the Comprehensive Plan is incomplete, the relationship to probable later development needed to be undertaken in the basin and probable future structure of the Comprehensive Plan.

PLAN FEATURES

CLEARING AND SNAGGING - Removal of snags and debris from a channel.

DETENTION DAM - An artificial barrier for temporarily impounding water and sediment retention.

DIVERSION CHANNEL OR CHANNEL DIVERSION - A channel used to reroute the flow of a channel.

DIVERSION DAM - An artificial barrier designed to permit taking of water from a stream into a canal, pipe, or other conveyance facility.

DREDGING - Removal of earth along a river or streambed to deepen or widen a channel.

EXISTING PROJECTS - Water or land resource developments completed or under construction as of Fiscal Year 1973.

FLOOD CONTROL PROGRAM - Includes future Federal and non-Federal (structural and nonstructural) flood control and prevention measures from existing (1973) project conditions to the year 2020.

FLOOD FORECASTING - Forecasting the river stage and discharge to predict flood stages and indicate areas subject to flooding.

FLOODGATE - A gate for shutting out, admitting, or releasing a body of water.

FLOOD INSURANCE - A means of spreading the cost of flood losses. It enables interested persons to purchase insurance against loss resulting from floods.

FLOODPLAIN MANAGEMENT - Comprehensive flood damage prevention program which requires integration of all alternative measures (structural and nonstructural) in investigation of flood problems and planning for wise use of the floodplain.

FLOODPLAIN REGULATION - A general term applied to the full range of codes, ordinances, and other regulations relating to the use of land, water, and construction within a channel or floodplain area.

FLOODPLAIN ZONING - Restrictive measures to limit the amount of damage and destruction caused by floodwater in the floodplain.

FLOODPROOFING - A combination of structural changes and adjustments to properties subject to flooding primarily for the reduction of flood damages.

PLAN FEATURES (CONT'D)

FLOODWALL - A structure which is usually of masonry construction and erected roughly parallel to a river to contain flood flows through urban areas.

FLOODWAY - The channel of a river or stream and those parts of the floodplains adjoining the channel which carry and discharge the floodwater or flood flow of any river or stream.

IRRIGATED AREA - A composite of harvested cropland and pasture, non-harvested cropland, and other nonproductive and nonagricultural lands receiving an irrigation water supply.

LAND TREATMENT AND MANAGEMENT MEASURES - A tillage practice, a pattern of tillage or land use or land management facility improvements to alter runoff, reduce sediment production, improve use of drainage and irrigation facilities, or improve plant or animal production.

LEVEE, ARTIFICIAL - A dike or embankment, generally constructed on or parallel to the banks of a stream, lake, or other body of water, for the purpose of protecting the land side from inundation by floodwater or to confine the streamflow to its regular channel.

NONSTRUCTURAL MEASURES - Managing, utilizing, or controlling water and related lands without structural development to achieve a desired objective. Such measures include floodplain zoning, flood warning systems, floodproofing, legal restraints, and preservation.

PUMPING PLANT - A pumping station or plant located at the lowest point of a sump or drainage area used to withdraw the accumulated water to another place.

PROJECT - Any separable physical unit or closely related units, existing, undertaken, or to be undertaken within a specific area for control and development of water and related land resources, which can be established and utilized independently or as an addition to an existing project, and can be, or has been, considered as a separate entity for purposes of evaluation.

STORAGE DAM - An artificial barrier for impounding water or sediment.

STRUCTURAL MEASURES - Measures that will delay, reduce, or control flood flows. These measures include detention reservoirs, channel improvements, levees, and diversion channels.

WATERSHED PROTECTION - The treatment of watershed lands in accordance with such predetermined objectives as the control of erosion, streamflow, silting floods, and water, forage, or timber yield.

AESTHETICS AND CULTURE

GENERAL TERMINOLOGY

AESTHETICS - A branch of philosophy dealing with the beautiful, chiefly with respect to theories of its essential character, tests by which it may be judged, and its relation to the human mind. The impact of destruction of the environment on man's perception and aspirations cannot be measured.

CULTURAL - Conversance with and taste in fine arts, humanities, and broad aspects of science; distinguished from vocational, technical, or professional skill or knowledge.

ENVIRONMENT - The sum of all factors that influence the growth and existence of an organism or a society (population of organisms). The condition of existence at any place as produced by all factors - natural and man-caused - of which man is both aware and unaware.

ENVIRONMENTAL QUALITY - That particular balance of known desirable factors - natural and man-made - which is most acceptable to man for the intended purposes at a given place. The degree of quality is dependent upon the degree to which these factors (known and desirable) are incorporated unimpaired into that environment. It is accepted that balance implies compromise between these factors causing partial impairment of some and deletion of others.

FEATURES

ARCHEOLOGICAL EXCAVATION - A process to dig out earth to expose artifacts and other antiquities and to examine their relationships.

ARCHEOLOGICAL RESOURCES - Historic or prehistoric structures (mounds, etc.), ruins, arrow points, pottery sherds, graves, and other artifacts and antiquities, as identified by professional archeologists.

ARCHEOLOGICAL SURVEY - Act of viewing possible sites by a professional archeologist to determine and delineate the form, extent, and position, and of applying the principles of archeological expertise for evaluation.

ARCHEOLOGY - The scientific study of the material remains of past human life and activities, such as relics, artifacts, and monuments.

CULTURAL VALUES - Any remains or localities such as structures, artifacts, burial of habitation sites, etc., which are of value in explaining, illustrating, or commemorating the life style of the previous habitants of an area.

HISTORICAL AREAS - Maintaining and where necessary restoring the historical integrity of structures, sites, and objects significant to the commemoration or illustration of the story.

FEATURES (CONT'D)

HISTORIC PRESERVATION - Includes the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, or culture.

LANDSCAPE - A portion of land which the eye can comprehend in a single view, especially in its pictorial aspect.

LANDSCAPE MANAGEMENT - When consistent with and not materially disruptive of the maintenance of natural associations, landscape management will be practical to ameliorate or conceal the scars and visual impact of structures, facilities, and construction activities related thereto which impinge on the natural scene.

NATIONAL HISTORIC LANDMARKS - Sites of national significance which are declared eligible for registry as national historic landmarks. Generally not in Federal ownership, they may consist of structures, sites, Indian mounds, objects, districts, and other features of national significance. In most cases these landmarks are not units of the National Park System, or other Federal systems.

NATIONAL HISTORIC PRESERVATION ACT OF 1966 - Provides a means for the states to nominate properties of State and local significance for placement in the National Register.

NATIONAL REGISTER OF HISTORIC PLACES - Expansion of and maintenance of a National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, and culture.

NATURAL LANDMARKS - Sites of national significance which are declared eligible for registry under the National Registry of Natural Landmarks. This program encourages the preservation of sites which importantly illustrate the geologic and ecologic character of the United States; to enhance the educational and scientific values of sites so preserved. Generally not in Federal ownership.

WILDERNESS - An area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean . . . an area of undeveloped Federal, State, or local land retaining its primeval character and influence without permanent improvements or human habitation which is protected and managed so as to preserve its natural conditions, and which:

(1) generally appears to have been affected primarily by the forces of nature, with imprint of man's work substantially unnoticeable;

FEATURES (CONT'D)

WILDERNESS (CONT'D)

(2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;

(3) contains at least 5,000 acres of land; and

(4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

COAST AND ESTUARY

GENERAL TERMINOLOGY

COASTAL AREA - The land and sea area bordering the shoreline.

ESTUARINE - Of, pertaining to, or formed in an estuary. Or, more generally, applied to any zone characterized by alternating open water and low-lying land areas, in which tidal and fluvial influences interact.

ESTUARY - That portion of a stream influenced by the tide of the body of water into which it flows.

COAST AND ESTUARY

BAR - A deposit of alluvium either in a channel or along its side; also, a shoal area nearshore or out in a lake, bay, etc.

BARRIER BEACH - Offshore barrier; a long, narrow sandy bar essentially parallel to the shore and built up by the action of waves, currents, and wind, with a crest exposed during low water.

BARRIER ISLAND - Elongated island formed as a result of wave processes. Examples, typically parallel to the coast and commonly separated from the nearby mainland by a lagoon or bay.

BAY - A recess along a coast, ordinarily intermediate in size between a cove and a gulf, in which water is usually calmer than in the adjacent sea. Through popular usage, the term may refer to a large estuary or even to a rarely flooded marsh.

BAYOU - Any water body that is locally called a bayou. Many are relatively stagnant, but in some the flow is vigorous. Some are cutoff lakes, others are tidal channels, estuaries, or active or abandoned river distributaries.

BEACH - The gently sloping shore of an ocean, sea, or lake or the banks of a river that is covered by sand, sand and gravel, or larger rock fragments and is washed by waves or tides.

BED - The floor under a stream or other body of water (sea, lake, estuary, etc.)

BRACKISH WATER - Slightly saline water, generally applied to waters whose saline content is intermediate (between 1,000-3,000 mg/l). Salinity may be caused by admixed seawater, contact with salt beds, or other contaminants. Occurs either in surface water bodies or in groundwater.

BREAKWATER - An artificial structure designed to protect some portion of the coast from wave erosion or to create a comparatively quiet area of water behind it, as in a harbor.

COAST AND ESTUARY (CONT'D)

CHENIER - A wooded ridge, sandy hammock, or abandoned shore beach formed on marsh deposits located in coastal southwest Louisiana.

CHENIER PLAIN - A low, marsh coastal plain that includes cheniers.

CHLORINITY - A measure of the chloride content.

COASTLINE - Approximate position of the shoreline. Less restricted in definition than shoreline.

CONTOUR - A line or surface at all points of which a certain quantity, otherwise variable, has the same value (as lines of equal elevation above or below a datum plane).

DELTA - The alluvial deposit at the mouth of a river commonly forming a nearly flat fan-shaped plain of considerable area traversed by many separate branches in which the river distributes itself downstream and resulting from the accumulation of stream-borne sediment supplied more rapidly than it can be carried away by offshore and alongshore currents.

DELTAIC - Pertaining to a delta. Specifically used to describe coastal plains formed by successive or adjacent deltas. Descriptive of channel patterns originating under water as delta fronts advance, as during the filling of an estuary; these are characterized by branching submarine natural levees, lenticular islands between channels that later come together, and complicated systems of deposits that persist after the area has become land. Much of the Atchafalaya Basin, Louisiana, exemplifies the process.

DIKE - A wall or mound built around a low-lying area to prevent flooding.

DISTRIBUTARY - A river branch flowing away from the main stream and not rejoining it.

ECOLOGY - Study of interrelationships of organisms and their environment, especially as manifested by natural cycles and rhythms, community development and structure, interaction between different kinds of organisms, geographic distributions, and population alterations. Applied as well to effects of total environment, including climatic, etc., as well as edaphic or biologic.

ECOSYSTEM - An ecological community considered together with the nonliving factors of its environment as a unit.

EROSION - Wearing away; specifically, entrainment or detachment of particles, of whatever size or by whatever means.

COAST AND ESTUARY (CONT'D)

EUTROPHICATION - The process, more pronounced in shallow bodies of water, of becoming rich in dissolved nutrients, frequently with seasonal deficiency in dissolved oxygen content.

FAUNA - The animals, collectively, of any region, period, or environment.

FLORA - The plants, collectively, of a given region, formation, period, or environment.

FLUVIAL - Of, or pertaining to rivers; growing or living in streams or ponds, produced by river action.

FORESHORE - A strip of land margining a body of water; the portion of the shore between ordinary high and low water marks.

GROIN - A rigid structure built out at an angle from a shore to protect the shore from erosion by currents, tides, and waves or to trap sand.

HABITAT - The place where an organism lives. The term is usually used more specifically than environment.

HURRICANE - A cyclonic storm usually of tropical origin, containing winds of 75 miles per hour or more.

HURRICANE SURGE - The mass of water causing an increase in elevation of the water surface at the time of a hurricane.

STANDARD PROJECT HURRICANE - A hurricane that may be expected from the most severe combination of meteorological conditions that are considered characteristic of the region involved.

INLET - A short, narrow waterway connecting a bay, lagoon, or similar body of water with a large parent body of water.

INTRUSION (SALT WATER) - Invasion of saline water into an environment where fresh water normally is present.

ISLAND - An area of dry land entirely surrounded by water or a swamp; something resembling an island by its isolated, surrounded, or sequestered position such as an area of swamp entirely surrounded by open water.

JETTY - A structure extending into a sea, lake, or river to influence the current or tide or to protect a harbor.

LEVEE, ARTIFICIAL - See General, Plan Features, page 4.

COAST AND ESTUARY (CONT'D)

LEVEE, NATURAL - A ridge developed at times of flood as a result of localized deposition along banks of channels, or submerged along sides of threads of flow in deltas.

LITTORAL - Of or relating to or on or near a shore, especially of the sea.

MARSH - A tract of soft, wet land subject to frequent cyclical inundation, generally treeless and usually characterized by grasses and other low growth.

NURSERY GROUNDS - Areas in which larval or juvenile forms of an animal develop.

OFFSHORE - Situated off the shore or within a zone generally extending between the seaward edge of the continental shelf and the low-water line of the shore. Also, coming or moving away from the shore.

PROBABLE MAXIMUM HURRICANE - The hurricane that may be expected from the most severe combination of meteorological conditions that are reasonably possible in the region involved.

RECESSION - The receding or diminishing of a natural feature or the process by which such movement occurs, such as the landward movement of a shoreline undergoing erosion or the withdrawal of a body of water exposing formerly submerged areas to the air.

REGIMEN - The characteristic behavior or orderly procedure of a natural phenomenon or process.

REVTMENT - A facing of stone, concrete, etc., created to sustain an embankment.

SALINE - Consisting of or containing salt.

SALINITY - The quality or state of being saline. Also, a concentration of salt.

<u>Description</u>	<u>Dissolved Solids Content</u>
Slighty Saline (brackish)	1,000 - 3,000 mg/l
Moderately Saline	3,000 - 10,000 mg/l
Very Saline	10,000 - 35,000 mg/l
Brine	35,000 + mg/l

SALT MARSH - A marsh that is subject to intermittent or occasional overflow by salt water, contains water that is brackish to strongly saline, and supports a vegetation of halophytic plants.

COAST AND ESTUARY (CONT'D)

SALTWATER ENCROACHMENT - Invasion of fresh by salt water, either in surface or groundwater.

SHORE - The strip of ground bordering any body of water.

SHORELINE - The zone of contact of a body of water with the land.

SOUND - A long and rather broad inlet of the ocean generally with its larger part extending roughly parallel to the coast.

STORM SURGE - An extraordinary rise in the level of a water body, generated by the wind and pressure anomaly.

SUBSIDENCE - The act or process wherein land areas settle.

SWAMP - Wet, spongy land saturated and sometimes partially or intermittently covered with water, especially such land supporting a natural vegetation predominantly of shrubs and trees and often intergrading into grassy marsh on the one hand and wet forest on the other.

TIDAL - Of or relating to tides, caused by tides, having tides, periodically rising and falling or flowing and ebbing, moved or actuated by tides, dependent upon the state of the tide.

TIDE OR ASTRONOMICAL TIDE - The alternate rising and falling of the surface of the ocean and of gulfs, bays, estuaries, and other water bodies connected with the ocean that is caused by the gravitational attraction of the sun and moon acting unequally on different parts of the earth. In the coastal Louisiana area the astronomical tide is diurnal, i.e., one high tide and one low tide normally are experienced in each 24-hour period.

DOMESTIC, MUNICIPAL, AND INDUSTRIAL
WATER SUPPLY, AND WATER QUALITY

GENERAL TERMINOLOGY

DOMESTIC AND COMMERCIAL WATER USE - Includes residential, commercial, public, unaccounted for, and those industrial uses which can reasonably be reflected in a per capita use figure.

DOMESTIC WASTE - Wastes from residential areas; does not include commercial areas.

DOMESTIC WATER SUPPLY - Household uses and livestock watering associated with ranch and farm operations, and uses in small communities without a central distribution system.

EPIDEMIOLOGICAL ASSESSMENT - The evaluation of water-related disease and the potential for occurrence of such disease and poisoning.

FLOW AUGMENTATION - The addition of supplemental flow in order to provide sufficient total flow to properly assimilate waste discharges and maintain water quality standards.

INDUSTRIAL WASTE - Wastewater discharge from an industry. Depending on the usage in the plant, it may be classified as cooling, process, or sanitary.

INDUSTRIAL WATER SUPPLY - Water required for industrial use and not supplied through a municipal distribution system.

INDUSTRIAL WATER USE - That water used by industry for cooling, processing, and sanitary purposes. May be self-supplied or municipally supplied.

IRRIGATION WATER SUPPLY - Water required for irrigation of "sizable" tracts of land.

LIVESTOCK WATER SUPPLY - Water required for livestock watering.

MUNICIPAL WATER SUPPLY - Water required for areas supplied through central municipal distribution system.

POLLUTION - The addition of sewage, industrial wastes, heated effluents, or other materials to water which render the water unfit for its intended use.

PUBLIC HEALTH SERVICE DRINKING WATER STANDARDS - These are standards promulgated by the Public Health Service (DHEW), effective April 5, 1962, for potable water used by carriers subject to the Federal Quarantine Regulations. These standards, in many cases, have been adopted by the various State Health Departments as their drinking water standards.

GENERAL TERMINOLOGY (CONT'D)

RURAL WATER SUPPLY - Household uses and livestock watering associated with ranch and farm operations, and uses in small communities without a central distribution system.

VECTORS - Those organisms which transmit disease by acting as a temporary host or carrier of the subject pathogen.

DIMENSIONAL CRITERIA

ALGAE - Simple plants, many microscopic, containing chlorophyll. Most algae are aquatic and may produce a nuisance when conditions are suitable for prolific growth.

BICARBONATES AND CARBONATES - Caused by the action of carbon dioxide in water on carbonate rocks such as limestone and dolomite. They produce alkalinity, and in combination with calcium and magnesium cause carbonate hardness.

BIOCHEMICAL OXYGEN DEMAND (BOD) - A measure of the amount of oxygen required to remove organic matter from the water in the process of decomposition by aerobic bacteria. It provides an index of the degree of organic pollution of water.

CHEMICAL OXYGEN DEMAND - A measure of the chemically oxidizable organic matter in the water.

COLIFORM GROUP - The coliform group of organisms, predominantly inhabitants of the intestines of warm-blooded animals, meets the criteria for a satisfactory biological indicator of fecal pollution. There are two principal subgroups: the so-called fecal coli (*Escherichia coli*) constitute about 90 percent of the coliforms discharged in fecal matter whereas the so-called nonfecal coli (*Aerobacter aerogenes*) usually originate in soil, grain, and decaying vegetation.

DEGRADATION - Used to describe the deterioration of water quality that occurs when pollutants are introduced to the water.

DISSOLVED OXYGEN - The amount of oxygen gas dissolved in water. It is commonly expressed in mg/l. The solubility of oxygen varies inversely with temperature - the higher the temperature the less oxygen can be dissolved in the water.

DISSOLVED OXYGEN SAG - The pattern in the dissolved oxygen concentration below a waste source, caused by the simultaneous action of deoxygenation and reaeration.

FECAL COLIFORM - (*Escherichia coli*) - See Coliform Group.

DIMENSIONAL CRITERIA (CONT'D)

FECAL STREPTOCOCCI - Those groups of streptococci normally found in the intestinal tract of warm-blooded animals.

GALLONS PER CAPITA PER DAY - Amount of water, expressed in gallons used per person per day. Usually arrived at by dividing the total average water use per day by the population served.

HARDNESS - In most waters nearly all the hardness is due to calcium magnesium. All of the metallic cations other than the alkali metals also cause hardness. Hardness equivalent to the bicarbonate and carbonate is called carbonate hardness. Any hardness in excess of this is called noncarbonate hardness. Waters of hardness up to 60 mg/l are considered soft; 61 to 120 mg/l moderately hard; 121 to 180 mg/l hard; more than 180 mg/l very hard.

IRON-TOTAL - On exposure to air, iron in groundwater oxidizes to reddish-brown precipitate. More than 0.3 mg/l will cause staining of laundry and utensils.

MILLION GALLONS PER DAY (mgd) - A rate of flow, 1.54723 cubic feet per second, or 3.0689 acre-feet per day.

MUNICIPAL WASTE - Includes domestic and commercial wastes and may include industrial wastes if the industries discharge their wastes to the community system.

MUNICIPAL WATER USE - Water used in a municipality including the domestic and commercial as well as any industrial water supplied by the municipal water system.

NITRATE (NO₃) - The principal form of nitrogen in most natural water.

ONE-DAY IN 30 YEARS LOW FLOW - The one-day low streamflow that can be expected to be equaled or exceeded on the average of 29 years out of 30, used as a comparison for water supply needs.

ORGANIC WASTE LOADS - Waste loads where the major pollutants are biodegradable organic materials capable of being reduced by passage through conventional biological secondary treatment plants.

PHOSPHATE (PO₄) - Phosphates in water stimulate the growth of algae which may cause odor problems in water supply and also cause algal blooms.

DIMENSIONAL CRITERIA (CONT'D)

POPULATION EQUIVALENT (BOD) - The calculated population which would normally contribute the same amount of biochemical oxygen demand (BOD) per day. For industrial waste, the estimated number of people contributing sewage equal in strength to a unit volume of the waste or to some other unit involved in producing or manufacturing a particular commodity. Population equivalents may also be estimated on the basis of suspended solids or other parameters.

SILICON DIOXIDE - Is dissolved from practically all rocks and soils. Forms hard scale in pipes and boilers.

SODIUM ABSORPTION RATIO (SAR) - An expression of the relative activity of sodium ions in the exchange reactions with soil. It is defined as the ratio of sodium to the square root of one-half the sum of calcium and magnesium.

$$SAR = \frac{NA}{[1/2(CA + Mg)]^{1/2}} = \frac{NA}{[1/2(Ca + Mg)]^{1/2}}$$

SOLIDS, DISSOLVED - Solids that are dissolved in sewage. None of the dissolved solids are settleable.

SOLIDS, SETTLEABLE - That portion of the solids in sewage which will settle out. Usually tested in the Imhoff cone. The remaining portion of the solids are nonsettleable.

SOLIDS, SUSPENDED - The settleable solids are a part of the suspended solids in sewage, but all suspended solids are not settleable. Some of the suspended solids are so small in size and so light in weight that they would not settle out in a very long time. Such small-sized particles or solids are called colloidal solids.

Practically all of the solids, whether settleable or colloidal, are removed when sewage is filtered through an asbestos mat or through frittered glass in the laboratory. The solids removed in such process are those that are designated as the suspended solids.

SOLIDS, TOTAL - The combined suspended and dissolved solids are known as the total solids of a sewage.

SPECIFIC CONDUCTANCE - A measure of a water's capacity to convey an electric current. The reciprocal of the resistance in ohms of a column of solution one centimeter long and with a cross section of one square centimeter at a specified temperature, usually 25 degrees Centigrade, is reported as specific electrical conductance; it is often used to express salinity.

DIMENSIONAL CRITERIA (CONT'D)

SULFATE - The sulfate in water containing calcium forms hard scale in boilers and in large amounts in combination with other ions gives a bitter taste to the water.

THERMAL POLLUTION - The increase in temperature of the receiving waters caused by the discharge of heated effluents (usually cooling waters).

TOTAL NITROGEN - The sum of all the various forms of nitrogen existing in water, nitrite, nitrate, ammoniacal, and organic solutions.

TURBIDITY - Attributable to suspended and colloidal matter which disturbs clearness and diminishes the penetration of light in water. The suspended matter may contain silica, zinc, iron and manganese compounds, clay or silt, sawdust, fibers, or other materials. These materials may enter the water as a result of natural processes such as erosion or as a result of the addition of domestic sewage or industrial wastes.

WATER QUALITY PROBLEM AREA - An area where surface water resource (the design flow) is insufficient to meet the flow required to assimilate present or projected BOD waste injections to a stream assuming that secondary treatment is effected before discharge.

WATER QUALITY STANDARDS - The criteria deemed necessary to protect and maintain the quality of the water for all beneficial uses.

WATER SUPPLY PROBLEM AREA - An area where combined dependable surface and groundwater resources are or will be insufficient to meet present or projected water supply needs. Problem areas are primarily those of inadequate supply; however, where quality problems of supply are known they are listed and discussed.

TREATMENT

ADEQUATE TREATMENT - For purposes of this report, adequate is assumed to be secondary treatment capable of achieving an 85 percent reduction in the raw BOD load.

ADVANCED TREATMENT - The selective application of presently uncommon physical and chemical separation processes utilized to remove organic and inorganic contaminants that remain after present-day conventional treatment processes.

PRELIMINARY WASTE TREATMENT - The conditioning of an industrial waste at its source prior to discharge to remove or to neutralize substances injurious to sewers and treatment processes and/or to effect a partial reduction in load on the treatment process. In the treatment process, unit operations which prepare the liquor for subsequent major operations.

TREATMENT (CONT'D)

PRIMARY WASTE TREATMENT - The first major process or group of processes in a sewage treatment works is usually screening, shredding, and sedimentation. This process will remove a high percentage of suspended matter but little colloidal and dissolved matter. It is designed to settle the bulk of organic and inorganic solids that are insoluble. About 30 or 40 percent of the biochemical oxygen demanding materials can be removed but little or none of the more resisting substances.

SECONDARY WASTE TREATMENT - This type of treatment involves the application of a biological process to the primary effluent in which bacterial or biochemical action is intensified to stabilize, oxidize, and nitrify the unstable organic matter present. Activated sludge, trickling filtration, contact stabilization, and extended aeration are common in secondary treatment.

In the secondary process, suspended and dissolved organic materials that can be attacked by organisms are partially or completely destroyed. Usually 80 to 95 percent of the oxygen demand, as measured by the biochemical oxygen demand test, will be satisfied. Although under proper conditions and with sufficient time all organic materials may be degraded by appropriate organisms, complete degradation does not occur on a practical basis and some residual or refractory materials remain in the effluent.

TERTIARY TREATMENT - In this report, tertiary treatment is considered as selective application of presently uncommon biological treatment processes utilized to remove organic and inorganic contaminants that remain after present-day conventional treatment processes. Examples would be holding ponds, further lagooning of treated effluents, or sand filtration of treated effluent.

WASTE TREATMENT - Treatment by one of the previously listed methods to bring about a reduction in the pollutorial effect of sewage wastes before they are discharged to a water course.

ECONOMIC STUDIES

GENERAL TERMINOLOGY

DEMAND - The amount of a commodity that sellers offer at each specified price in a given market at a given time.

ECONOMIC BASE STUDY - A study that evaluates the economic structure of a region to provide economic and demographic projections necessary for the appraisal of future water resource needs.

ENHANCEMENT - An increase in value resulting from intensified utilization of a particular land area or water resource.

LOCATION QUOTIENT - A number, generally in index form, which shows the relative importance of an industry in a region compared with the importance of that industry in a larger base area.

OFFICE OF BUSINESS ECONOMIC AREAS (OBE AREAS) - One hundred seventy-three city-oriented areas in which residentiary establishments are bound by relative transportation costs from hinterland to competing centers.

SHIFT-SHARE ANALYSIS - An analytical technique to measure and classify regional economic growth over time. It defines regional growth in terms of its component parts; namely, growth in the region due to overall growth of the national economy, growth due to the industry-mix of an area, and growth due to geographic advantages or differences. The latter component is referred to as the area share component. Growth may be defined in terms of employment, earnings, or income.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) - The classification of establishments, published by the Office of Management and Budget, by major type of industrial activity in which they are engaged.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA) - A county or group of counties containing at least one city of 50,000 inhabitants or contiguous cities with a combined population of 50,000 or more. In addition to the county containing such city or cities, contiguous counties are included in the SMSA if they are metropolitan in character and are integrated socially and economically with the attributes of the outlying county as a place of work or residence for a concentration of nonagricultural workers and stipulate that at least 75 percent of the labor force in a county must be nonagricultural and; usually, the county must have 50 percent or more of its population living in contiguous minor civil divisions with a density of at least 150 persons per square mile.

DEMOGRAPHIC

RURAL POPULATION - All residents not classified as urban.

DEMOGRAPHIC (CONT'D)

URBANIZED AREA - An area containing one or more cities of 50,000 inhabitants and includes that portion of the surrounding territory, whether incorporated or unincorporated, maintaining the criteria of a population density of at least 1,000 persons per square mile.

URBAN POPULATION - All persons living in urbanized areas or in places of 2,500 inhabitants or more outside urbanized areas. Places may be either incorporated or unincorporated.

EMPLOYMENT

BASIC EMPLOYMENT - Employment in industries within a specified area which produces a volume that is transported and sold in other areas.

EMPLOYMENT - All persons who work for pay or profit or for 15 hours or more without pay in a family business or on a farm.

LABOR FORCE - Persons 14 years of age and over who are employed or are seeking employment.

PARTICIPATION RATE - The proportion of the total population employed at a specified time.

RESIDENTIARY EMPLOYMENT - Employment in industries serving a specified area with little if any surplus for selling to other areas.

FINANCIAL

ANNUAL FINANCIAL COST - Sum of the annual equivalent of the fixed cost, the annual operation and maintenance costs, the annual equivalent of major replacement costs, and interest during construction.

CAPITAL EXPENDITURES - Outlays for plant and equipment which are normally charged to fixed asset accounts.

CONSTANT DOLLARS - Dollars of constant purchasing power measured at a specific point in time. In the economic base study, 1967 dollars are used as the base.

FIRST COST - The total project construction cost including real estate, engineering, design, administration, and supervision.

FIXED COST - Amortized investment costs associated with a project.

INVESTMENT - First cost plus interest during construction.

FINANCIAL (CONT'D)

MAJOR REPLACEMENT COSTS - Costs of replacement or rehabilitation of major structural or equipment items within the project life.

OPERATION AND MAINTENANCE COSTS - Average annual costs of project operation and normal maintenance.

INCOME

EARNINGS PER EMPLOYEE - Total civilian earnings divided by the total civilian employment.

GROSS INCOME - The gains from the deposition of assets, profits, personal compensation, rents, interest, and dividends before deductions of any costs over a specified accounting period.

GROSS PRODUCT ORIGINATING (GPO) - Increase in value of output or contribution to the Gross National Product by procedures in a specified industry.

NET INCOME - Gross income minus the total cost of producing goods or service yields net income. Calculated for a specified accounting period.

PER CAPITA PERSONAL INCOME - Total personal income divided by total population.

TOTAL EARNINGS - Income from wage and salary disbursements, commissions, tips, and proprietor's income. This excludes property income, transfer payments, and Social Security payments.

TOTAL PERSONAL INCOME - Income from salary disbursements and other labor income, proprietor's income, property income (interest, dividends, and rental income) and government and business transfer payments.

WEALTH - All material objects that have economic value.

LOSSES

AVERAGE ANNUAL EQUIVALENT DAMAGES - Expression of damage values for a stated period as a uniform annual series so as to recognize the value of annual increments to change in damage levels during the period. As an example, the average annual equivalent damages for the 50-year period from 1970 to 2020 is equal to the algebraic sum of the damage levels projected for 1970 conditions and the present worth of the annual increments of growth or decline in damage during the remainder of the period. The procedure for obtaining present worth requires the assumption of a discount rate.

LOSSES (CONT'D)

AVERAGE ANNUAL FLOOD DAMAGES - Expression of damage values as a uniform annual series that considers the nonuniform rate of damage accrual. Each yearly damage is reduced to its present worth, and the sum of these present worths is spread uniformly over the period of analysis.

FLOODWATER OR FLOOD DAMAGE - The economic loss caused by floods, including damage by inundation, erosion, scour, or sediment deposition on floodplain areas. Floodwater damages result from physical damages or losses, emergency costs, and business or financial losses. Evaluation may be based on the cost of replacing, repairing, or rehabilitating; the comparative change in market or sales value; or the change in income or production caused by flood experience.

GULLY EROSION DAMAGES - Losses from destruction of land and cultural features, such as buildings, fences, roads, etc.

INTANGIBLE LOSSES - Losses or damages for which a market price is not available or does not define magnitude. These include such items as loss of life, creation of health hazards, or aesthetic values.

STREAMBANK EROSION DAMAGE - Value of land areas destroyed, the loss of values due to threat of future erosion, and destruction or damage of buildings, bridges, utilities, or other structures located on the land areas destroyed by erosion.

TANGIBLE LOSSES - Items of loss or damage that can be reasonably given a monetary value based on or derived from the normal criteria of the market place.

ELECTRIC POWER

GENERAL TERMINOLOGY

CONVENTIONAL HYDROELECTRIC PLANT - A hydroelectric power plant which utilizes streamflow only once as it passes downstream, as opposed to a pumped-storage plant which recirculates all or a portion of the streamflow in the production of power.

CRITICAL WATER YEAR - A term sometimes used interchangeably with Critical Period when the critical period falls within one operating year. The term will lose all significance when the system moves into a multi-year critical period.

DEMAND (ENERGY, POWER) - The rate at which electric energy is delivered to or by a system at a given instant or averaged over any designated period of time, expressed in kilowatts or other suitable units.

DRAWDOWN - The distance that the water surface of a reservoir is lowered from a given elevation as the result of the withdrawal of water. Sometimes drawdown is also expressed in terms of acre-feet of storage withdrawn.

ENERGY - That which does or is capable of doing work. It is measured in terms of the work it is capable of doing; electric energy is commonly measured in kilowatt-hours or average megawatts.

AVERAGE ANNUAL ENERGY - Average annual energy generated by a hydroelectric project or system over a specified period.

FIRM ENERGY - Electric energy which is considered to have assured availability to the customer to meet all or any agreed upon portion of his load requirements. System firm energy capability includes hydro system prime energy, thermal plant energy capabilities, and firm imports.

PRIME ENERGY - Hydroelectric energy which is assumed to be available 100 percent of the time: specifically, the average energy generated during the critical period.

SECONDARY ENERGY - All hydroelectric energy other than prime energy: specifically, the difference between average annual energy and prime energy.

ENERGY DEMAND - See Demand.

FIRM - Assured.

FIRM LOAD CARRYING CAPABILITY - The firm load that a system could carry under coordinated operation. More specific terms are Firm Energy Load Carrying Capability and Firm Peak Load Carrying Capability. The general term refers collectively to both.

GENERAL TERMINOLOGY (CONT'D)

FOREBAY - The impoundment immediately above a dam or hydroelectric plant intake structure.

FOSSIL FUELS - Coal, oil, natural gas, and other fuels originating from fossilized geologic deposits and depending on oxidation for release of energy.

GENERATION - The act or process of producing electric energy from other forms of energy; also the amount of electric energy so produced.

HEAD

GROSS HEAD - The difference of elevations between water surfaces of the forebay and tailrace under specified conditions. Gross head generally refers to the difference between normal full pool and average tailwater.

NET HEAD (EFFECTIVE HEAD) - The gross head less all hydraulic losses except those chargeable to the turbine.

INERTIE - See Transmission Interconnection.

LOAD - The amount of power delivered to a given point.

BASE LOAD - The minimum load in a stated period of time.

FIRM LOAD - That part of the system load which must be met with firm power.

PEAK LOAD - Literally, the maximum load in a stated period of time. Sometimes the term is used in a general sense to describe that portion of the load above the base load.

LOAD DIVERSITY - Literally refers to the difference between (1) the sum of the separate peak loads of two or more loads or load areas and (2) the actual coincident peak load of the combined loads or load areas.

LOAD FACTOR - The ratio of the average load over a designated period to the peak load occurring in that period. In this Appendix the term applies to annual load factor unless otherwise specified.

LOAD SHAPE (LOAD PATTERN) - The characteristic variation in the magnitude of the power load with respect to time. This can be for a daily, weekly, or annual period.

LOSSES (ELECTRIC SYSTEM) - Total electric energy loss in the electric system. It consists of transmission, transformation, and distribution losses and unaccounted-for energy losses between sources of supply and points of delivery.

GENERAL TERMINOLOGY (CONT'D)

NORMAL FULL POOL - The maximum forebay water surface elevation within the reservoir's normal operating range.

PEAKING - Power plant operation to meet the variable portion of the daily load. See Load, Peak.

PEAKING PLANT - A power plant which is normally operated to provide all or most of its generation during maximum load periods.

PEAK LOAD - See Load, Peak.

PENSTOCK - A conduit to carry water to the turbines of a hydroelectric plant (usually refers only to conduits which are under pressure).

PLANT FACTOR - The ratio of the average load on the generating plant for the period of time considered to the aggregate capacity rating of the plant.

PONDAGE - Reservoir power storage capacity of limited magnitude that provides only daily or weekly regulation of streamflow.

POWER - The time rate of transferring energy. Note--The term is frequently used in a broad sense, as a commodity of capacity and energy, having only general association with classic or scientific meaning.

FIRM POWER - Power which is considered to have assured availability to the customer to meet all or any agreed upon portion of his load requirements. It is firm energy supported by sufficient capacity to fit the load pattern. The availability of firm power is based on the same probability considerations as is firm energy.

INTERRUPTIBLE POWER - Nonfirm power; power made available under agreements which permit curtailment or cessation of delivery by the supplier. Interruptible power loads can be met with secondary hydro energy.

PRIME POWER - Prime energy shaped to fit the regional load pattern.

SECONDARY POWER - Same as Secondary Energy.

POWER DEMAND - See Demand.

POWER SUPPLY AREA (PSA) - Geographic grouping of electric power suppliers as established by the Federal Power Commission in accordance with utility service areas.

GENERAL TERMINOLOGY (CONT'D)

PUMPED STORAGE PLANT - A hydroelectric power plant which generates electric energy for peak load use by utilizing water pumped into a storage reservoir during off-peak periods.

REREGULATING RESERVOIR - A reservoir located downstream from a hydroelectric peaking plant having sufficient pondage to store the widely fluctuating discharges from the peaking plant and release them in a relatively uniform manner downstream.

RESERVES

RESERVE GENERATING CAPACITY - See Capacity, Reserve.

SPINNING RESERVE - Generating capacity connected to the bus and ready to take load. It also includes capacity available in generating units which are operating at less than their capability.

SYSTEM RESERVE CAPACITY - The difference between the available dependable capacity of the system, including net firm power purchases, and the actual or anticipated peak load for a specified period.

RULE CURVE - A seasonal guide to the use of reservoir storage.

RUN-OF-RIVER PLANT - A hydroelectric plant which depends chiefly on the flow of a stream as it occurs for generation, as opposed to a storage project, which has sufficient storage capacity to carry water from one season to another. Some run-of-river projects have a limited storage capacity (pondage) which permits them to regulate streamflow on a daily or weekly basis.

STORAGE

DEAD STORAGE - The volume of water remaining in a reservoir after all of the usable storage has been withdrawn.

GROSS (TOTAL) - The total volume of water in a reservoir at normal full pool.

SEASONAL STORAGE - Water held over from the annual high-water season to the following low-water season.

USABLE STORAGE - The volume of storage in a reservoir which can be withdrawn for various conservation purposes (gross storage minus dead storage). As used in this Appendix the term refers to storage which can be withdrawn either jointly or exclusively for power generation.

GENERAL TERMINOLOGY (CONT'D)

STORAGE PROJECT - A project with a reservoir of sufficient size to carry over from the high-flow season to the low-flow season and thus to develop a firm flow substantially more than the minimum natural flow. A storage project may have its own power plant or may be used only for increasing generation at downstream plants.

TAILWATER - The water surface immediately downstream from a dam or hydroelectric power plant.

THERMAL PLANT - A power generating plant which uses heat to produce energy. Such plants may burn fossil fuels or use nuclear energy to produce the necessary thermal energy.

TRANSMISSION GRID - An interconnected system of electric transmission lines and associated equipment for the movement or transfer of electric energy in bulk between points of supply and points of demand.

TRANSMISSION INTERCONNECTION (INTERTIE) - Transmission circuit used to tie or interconnect two load areas or two utility systems.

ULTIMATE DEVELOPMENT - The maximum contemplated generating installation at a power plant.

HEAT MEASUREMENT

BRITISH THERMAL UNIT (B.T.U.) - The standard unit for measurement of the amount of heat energy, such as the heat content of fuel. Equal to the amount of heat energy necessary to raise the temperature of one pound of water one degree Fahrenheit.

HEAT EQUIVALENT OF ELECTRIC GENERATOR OUTPUT - The amount of heat energy equivalent to one kilowatt-hour of electric energy; 3,413 B.T.U. = one kilowatt-hour of electric energy output of the generator.

HEAT RATE - A measure of generating station thermal efficiency, generally expressed as B.T.U. per net kilowatt-hour. It is computed by dividing the total B.T.U. content of the fuel burned (or of heat released from a nuclear reactor) by the resulting net kilowatt-hours generated.

ELECTRICAL ENERGY MEASUREMENT

AVERAGE MEGAWATT - A unit of average energy output over a specified time period (total energy in megawatt-hours divided by the number of hours in the time period).

ELECTRICAL ENERGY MEASUREMENT (CONT'D)

GIGAWATT - One million kilowatts.

KILOWATT (Kw) - The electrical unit of power or rate of doing work, which equals 1,000 watts or 1.341 horsepower.

KILOWATT-HOUR (Kwh) - The basic unit of electric energy. It equals one kilowatt of power applied steadily for one hour.

MEGAWATT (Mw) - One thousand kilowatts.

MEGAWATT-HOUR (Mwh) - One thousand kilowatt-hours.

RESOURCE REQUIREMENTS

BOILER MAKEUP WATER - Water required to replace the loss of circulating water in the boiler system.

CIRCULATING WATER - See Condenser Cooling Water. In a closed-cycle cooling system, this refers to the heated water from the condenser which is cooled, usually by evaporative means, and recycled through the condenser.

CONDENSER COOLING WATER - Water required to condense the steam after its passage from the steam turbine.

COOLING WATER CONSUMPTION - The cooling water withdrawn from the source supplying a generating plant which is lost to the atmosphere. Caused primarily by evaporative cooling of the heated water coming from the condenser. The amount of consumption (loss) is dependent on the type of cooling employed--direct (once-through) cooling pond, or cooling tower. When not returned to the source of supply, blowdown is also included as a consumptive loss.

COOLING WATER LOAD - Waste heat energy dissipated by the cooling water.

COOLING WATER REQUIREMENT - The amount of water needed to pass through the condensing unit in order to condense the steam to water. This amount is dependent on the type of cooling employed and water temperature.

PLANT OPERATIONS

AVAILABILITY FACTOR - The ratio of the time a machine or equipment is ready for or in service to the total time interval under consideration.

BASE LOAD - See Load, Base.

PLANT OPERATIONS (CONT'D)

BLOWDOWN - Water drawn from boiler systems and cold water basins of cooling towers to prevent buildup of solids concentrations. Usually contains chemicals used for pH adjustment and slime control.

CAPABILITY - The maximum load which a generator, turbine, power plant, transmission circuit, or power system can supply under specified conditions for a given time interval without exceeding approved limits of temperature and stress.

MAXIMUM PLANT CAPABILITY (HYDRO) - The maximum load which a hydroelectric plant can supply under optimum head and flow conditions without exceeding approved limits of temperature and stress. This may be less than the overload rating of the generators due to encroachment of tailwater on head at high discharges.

PEAKING CAPABILITY - The maximum peak load that can be supplied by a generating unit, station, or system in a stated time period. For a hydro project the peaking capability would be equal to the maximum plant capability only under favorable pool and flow conditions; often the peaking capability may be less due to reservoir drawdown or tailwater encroachment.

CAPACITY - The load for which a generator, transmission circuit, power plant, or system is rated. Capacity is also used synonymously with capability.

DEPENDABLE CAPACITY - The load-carrying ability of a station or system under adverse conditions for the time interval and period specified when related to the characteristics of the load to be supplied. For hydro projects the term refers to the capability in the most adverse month in the critical period.

FIRM CAPACITY - Capacity which has assured availability to the customer on a demand basis. System firm capacity consists essentially of hydro system dependable capacity plus thermal plant installed capacity plus firm imports minus maintenance and forced outage reserves.

HYDRAULIC CAPACITY - The maximum flow which a hydroelectric plant can utilize for power generation.

INSTALLED CAPACITY - Same as nameplate capacity unless otherwise specified.

NAMEPLATE CAPACITY - The nominal rated capacity of a generating unit or other similar apparatus. The term gives an indication of the approximate generating capability of the unit, but in many cases the unit is capable of generating on a continuous basis substantially more than the nameplate capacity (see Overload Capacity, below).

PLANT OPERATIONS (CONT'D)

CAPACITY (CONT'D)

OVERLOAD CAPACITY - The maximum load that a machine, apparatus, or device can carry for a specified period of time under specified conditions when operating beyond its nameplate rating but within the limits of the manufacturer's guarantee or, in the case of expiration of the guarantee, within safe limits as determined by the owner.

PEAKING CAPACITY - Same as Peaking Capability.

RESERVE CAPACITY - Extra generating capacity available to meet unanticipated demands for power or to generate power in the event of loss of generation resulting from scheduled or unscheduled outages of regularly used generating capacity.

CAPACITY FACTOR - The ratio of the average load on the generating plant for the period of time considered to the capacity rating of the plant. Unless otherwise identified, capacity factor is computed on an annual basis.

CRITICAL PERIOD - Period when the limitations of hydroelectric power supply due to water conditions are most critical with respect to system energy requirements.

GENERATOR EFFICIENCY - The ratio of the power output of the generator to the power input.

HEAT LOSS FROM BOILER FURNACE - Heat energy loss from the combustion chamber through the stack. This energy is not part of the cooling water load.

HEAT LOSS FROM ELECTRIC GENERATOR - Heat lost in converting the mechanical turbine energy into generator electric energy. This heat energy is generally dissipated by a fluid flowing in a closed circuit which is cooled by water. Thus, it is a part of the cooling water load.

HYDRAULIC CAPACITY - See Capacity, Hydraulic.

PLANT EFFICIENCY - The ratio of the energy delivered from the plant to the energy received by it under specified conditions.

THERMAL EFFICIENCY - The ratio of the amount of energy produced (output) to the total B.T.U. content of the fuel consumed (input), usually expressed as a percent.

REFERENCES

The following references were used in the preparation of the electric power glossary.

1. Columbia-North Pacific Framework Study Glossary, Appendix XV, October 1970.
2. Federal Power Commission, Glossary of Important Power and Rate Terms, Abbreviations, and Units of Measurement (prepared under the direction of the Inter-Agency Committee on Water Resources and promulgated by the Federal Power Commission), 1965, Washington, D. C.

FISH AND WILDLIFE

GENERAL TERMINOLOGY

DUCK (OR GOOSE)-DAY - A duck (or goose) present on an area for any part of a day.

FISHERMAN-DAY - Any part of a day spent fishing by an individual.

HUNTER-DAY - Any part of a day spent hunting by an individual.

HUNTER OR FISHERMAN SUCCESS - Individual harvest expressed in bag per season on hunter- or fisherman-day.

NONRESIDENT HUNTER OR FISHERMAN - A hunter or fisherman who resides outside the State in which he hunts or fishes, whether or not he resides in the WRPA.

RESIDENT HUNTER OR FISHERMAN - An individual who hunts or fishes within the State in which he resides, whether or not he resides in the WRPA.

RESOURCE

CAPACITY (FISH AND WILDLIFE) - The population of game or fish that an area is capable of supporting.

DEMAND (FISH AND WILDLIFE) - The estimated desire for fishing and hunting expressed in man-days that exists now or might be expected in the future.

DESIGN LEVEL DEMAND (FISH AND WILDLIFE) - The projected hunting and fishing demand that the comprehensive basin plan is designed to meet.

EXPRESSED DEMAND (FISH AND WILDLIFE) - Man-days of fishing and hunting actually experienced when opportunities are available.

HABITAT RATING - An area classification based on the potential wildlife value.

HABITAT STOCKING - Transplanting and establishing or attempting to establish a game (or fish) population in empty or depleted habitat.

HUNTING AND FISHING SUPPLY - The man-days of hunting and fishing that can be supplied by available resources.

IDLE FISH AND WILDLIFE CAPACITY - The excess hunting or fishing capacity when supply exceeds demand.

LATENT FISH AND WILDLIFE DEMAND - The demand inherent in a population not reflected in the use of existing resources that could be expected with improved opportunities or shifts in certain socioeconomic conditions.

RESOURCE (CONT'D)

PUT-AND-TAKE MANAGEMENT - Periodic stocking of fish (or game) to increase the success of fishermen (or hunters).

WETLAND TYPES - Defined in "Wetlands of the United States," Circular 39 (1956), U.S.D.I., Fish and Wildlife Service. All are freshwater types.

Type 1. - Seasonally flooded basins or flats. The soil is covered with water, or waterlogged, during variable seasonal periods but usually is well drained during much of the growing season.

Type 2. - Inland fresh meadows. The soil usually is without standing water during most of the growing season but is waterlogged within at least a few inches of its surface.

Type 3. - Inland shallow fresh marshes. The soil is usually waterlogged during the growing season; often it is covered with as much as six inches or more of water.

Type 4. - Inland deep fresh marshes. The soil is covered with six inches to three feet or more of water during the growing season.

Type 5. - Inland open fresh water. Shallow ponds and reservoirs are included in this type. Water is usually less than ten feet deep and is fringed by a border of emergent vegetation.

Type 6. - Shrub swamps. The soil is usually waterlogged during the growing season, and is often covered with as much as six inches of water.

Type 7. - Wooded swamps. The soil is waterlogged at least to within a few inches of its surface during the growing season, and is often covered with as much as one foot of water.

Type 8. - Bogs. These are often called pocosins, bays, and savannahs in the South. The soil is usually waterlogged and supports a spongy covering of mosses. Bogs occur mostly in shallow lake basins, on flat uplands, and along sluggish streams.

FORESTRY

GENERAL TERMINOLOGY

FOREST TYPES - A classification of forest land based upon the species forming a plurality of stocking based on area occupied in the present tree cover, usually one or a combination of species that comprise at least 50 percent of the stocking.

CEDAR - Forests in which 25 percent or more of the stand is red cedar. Common associates include oak and hickory.

CENTRAL MIXED HARDWOODS - Forests in which 50 percent or more of the stocking is a combination of hardwood species, principally yellow-poplar, maple, beech, basswood, black walnut, elm, and northern red oak, except stands that classify as red cedar-hardwoods, oak-pine, oak-hickory, maple-beech, or elm-ash-cottonwood.

ELM-ASH-COTTONWOOD - Forests in which 50 percent or more of the stand is elm, ash, or cottonwood, singly or in combination. Common associates include willow, sycamore, beech, and maple.

HARDWOOD-RED CEDAR - Forests in which 50 percent or more of the stand is hardwood, but in which red cedar makes up 25 to 49 percent of the stand.

LOBLOLLY-SHORTLEAF PINE - Forests in which 50 percent or more of the stand is southern yellow pine, and loblolly or shortleaf pine, singly or in combination, predominates. Common associates include oak, hickory, and gum.

LONGLEAF-SLASH PINE - Forests in which 50 percent or more of the stand is longleaf or slash pine, singly or in combination. Common associates include other southern pines, oak, and gum.

MAPLE-BEECH-BIRCH - Forests in which 50 percent or more of the stand is maple, beech, or yellow birch, singly or in combination. Common associates include hemlock, elm, basswood, and white pine.

OAK-GUM-CYPRESS - Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, except where pines comprise 25-49 percent, in which case the stand is classified oak-pine. Common associates include cottonwood, willow, ash, elm, hackberry, and maple.

OAK-HICKORY - Forests in which 50 percent or more of the stand is upland oaks or hickory, singly or in combination, except where pines comprise 25-49 percent, in which case the stand is classified oak-pine. Common associates include yellow-poplar, elm, maple, and black walnut.

GENERAL TERMINOLOGY (CONT'D)

FOREST TYPES (CONT'D)

OAK-PINE - Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern pines make up 25-49 percent of the stand. Common associates include gum, hickory, and yellow-poplar.

POST-BLACKJACK OAK - Forests in which 50 percent or more of stand is post or blackjack oak, singly or in combination.

WHITE OAK - Forests in which 50 percent or more of the stand is white oak.

HARDWOODS - Dicotyledonous trees, usually broad-leaved and deciduous such as oak and hickory.

SOFTWOODS - Coniferous trees, usually evergreen, having needle or scale-like leaves such as pine.

STAND IMPROVEMENT - Improving growing conditions by using such measures as thinning, release cuttings, weedings, girdling and poisoning of cull trees, and pruning aimed at increasing sound wood in the butt log.

TREE STOCKING - A measure of the degree to which forest land is occupied by trees of specified classes in relation to a specified basal area standard for trees 5.0 inches in diameter at breast height (d.b.h.) and larger, or numbers of trees per acre for trees less than 5.0 inches; tree classes include (1) all live trees, (2) growing-stock trees, and (3) desirable trees. Classifications of forest land and forest types are based on stocking of all live trees. Classification of condition classes is based on stocking of desirable trees.

PRODUCTS AND PRODUCTION

FORESTRY PLANT BY-PRODUCTS - Wood materials from primary manufacturing plants (such as slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores, and clippings, and screenings at pulpmills) that are used for some product.

GROWING STOCK VOLUME - Net volume in cubic feet of live sawtimber and poletimber trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4-inch top (of central stem) outside bark or to the point where the central stem breaks into limbs.

NET ANNUAL GROWTH OF GROWING STOCK - The annual change in volume of sound wood in live sawtimber and poletimber trees during a specified period resulting from natural causes.

PRODUCTS AND PRODUCTION (CONT'D)

NET ANNUAL GROWTH OF SAWTIMBER - The annual change in net board foot volume of live sawtimber trees during a specified period resulting from natural causes.

ROUNDWOOD PRODUCTS - Logs, bolts, or other round sections cut from trees.

SAW LOG - A log meeting minimum approved log-grade specifications, or, for species for which approved log grades are lacking; at least 8 feet long, with a minimum diameter inside bark (d.i.b.) of 6 inches, and with deduction for defect no greater than two-thirds the gross volume.

SAWTIMBER VOLUME - Net volume in board feet, international 1/4-inch rule of merchantable sawlogs in live sawtimber trees. Net volume equals gross volume less deductions for rot, sweep, and other defects that affect use for lumber.

TIMBER CUT FROM GROWING STOCK - The volume of sound wood in live sawtimber and poletimber trees cut for forest products during a specified period, including both roundwood products and logging residues.

TIMBER CUT FROM SAWTIMBER - The net board foot volume of live sawtimber and trees cut for forest products during a specified period, including both roundwood products and logging residues.

TIMBER PRODUCTS - Includes (a) roundwood products such as saw logs, and bolts, cooperage logs and bolts, pulpwood, fuelwood, piling, poles, posts, hewn ties, mine timbers, and other round, split, or hewn products, and (b) byproducts of primary wood manufacturing plants.

TIMBER REMOVAL - The net volume of growing-stock trees removed from the inventory by harvesting; cultural operations, such as timber-stand improvements; land clearing; or changes in land use.

TIMBER CLASSIFICATION

STAND SIZE TIMBER CLASSES - A classification of forest land based on the predominant size of timber present, that is sawtimber, poletimber, or sapling and seedlings.

GROWING STOCK TREE - Sawtimber trees, poletimber trees, saplings, and seedlings, that is, all live trees except cull trees.

POLETIMBER STANDS - Stands at least 10 percent stocked with growing stock trees, and with half or more of this stocking in sawtimber and/or poletimber trees and with poletimber stocking exceeding that of sawtimber.

TIMBER CLASSIFICATION (CONT'D)

STAND SIZE TIMBER CLASSES (CONT'D)

POLETIMBER TREES - Live trees of commercial species at least 5.0 inches in diameter breast height but smaller than sawtimber size, and of good form and vigor.

SAPLINGS - Live trees of a commercial species 1.0 inch to 5.0 inches in diameter at breast height and of good form and vigor.

SAPLING-SEEDLING STANDS - Stands at least 10 percent stock with growing stock trees and with saplings and/or seedlings comprising more than half of this stocking.

SAWTIMBER STANDS - Stands at least 10 percent stocked with growing stock trees, with half or more of this stocking in sawtimber or poletimber trees and with sawtimber stocking at least equal to poletimber stocking.

SAWTIMBER TREES - Live trees of commercial species containing at least a 12-foot saw log. Softwoods must be at least 9.0 inches in diameter breast height. Hardwoods must be at least 11.0 inches in diameter.

SEEDLINGS - Live trees of commercial species less than 1.0 inch in diameter at breast height that are expected to survive according to regional standards.

HYDROLOGY

GENERAL TERMINOLOGY

CLIMATE - The sum total of the meteorological elements that characterize the average and extreme condition of the atmosphere over a long period of time at any one place or region of the earth's surface. The collective state of the atmosphere at a given place or over a given area within a specified period of time.

DEPRESSION STORAGE (WATER) - The volume of water contained in minor natural depressions in the land surface, such as puddles.

DISCHARGE - Rate of flow at a given time in terms of volume per unit of time.

DROUGHT - A period of deficient precipitation or runoff extending over an indefinite number of days, but with no set standard by which to determine the amount of deficiency needed to constitute a drought. Thus, there is no universally accepted quantitative definition of drought; generally, each investigator establishes his own definition.

When, in an area that is ordinarily classed as humid, natural vegetation becomes desiccated or defoliates unseasonably and crops fail to mature owing to lack of precipitation, or when precipitation is insufficient to meet the needs of established human activities, drought conditions may be said to prevail. Although water for irrigation or other uses in arid areas is always limited, special shortages in such areas are also regarded as droughts. Unsatisfactory distribution of precipitation throughout the year may be as effective a factor in causing a drought as a shortage in the total annual amount. Temperature and wind may also play an important part, especially in relation to the damage done.

EVAPORATION - The process by which water is changed from the liquid or the solid state into the vapor state. In hydrology, evaporation is vaporization that takes place at a temperature below the boiling point.

EVAPORATION TOTAL - The sum of water lost from a given land area during any specific time by transpiration from vegetation and building of plant tissue; by evaporation from water, moist soil, and snow surfaces; and by interception. It has been variously termed "evaporation," "evaporation from land areas," "evapotranspiration," "total loss," "water losses," and "fly off."

LAKE EVAPORATION - The total liquid water, in inches, transferred to the atmosphere from the total water surface of a lake.

NET RESERVOIR EVAPORATION - The evaporative water loss from a reservoir after making allowance for precipitation on the reservoir, and runoff that would have occurred from that precipitation from the land area covered by the reservoir. Net reservoir evaporation equals the total evaporation minus the precipitation on the reservoir plus the runoff from the land area covered by the reservoir.

GENERAL TERMINOLOGY (CONT'D)

EVAPOTRANSPIRATION - Water withdrawn from a land area by evaporation from water surfaces, soil, and plant transpiration.

POTENTIAL EVAPOTRANSPIRATION - Water loss that will occur if at no time there is a deficiency of water in the soil for use of vegetation.

TRANSPIRATION - The process by which water vapor escapes from the living plant, principally the leaves, and enters the atmosphere.

FLOOD - An overflow or inundation that comes from a river or other body of water, and causes or threatens damage.

ANNUAL FLOOD - The highest peak discharge in a water year.

FLOOD PEAK - The highest value of the stage or discharge attained by a flood; thus, peak stage or peak discharge. Flood crest has nearly the same meaning, but since it connotes the top of the flood wave, it is properly used only in referring to stage--thus, crest stage, but not crest discharge.

FLOOD STAGE - Level at which a river in some places overtops its natural confinement; bank-full stage; on rivers without flood plains, an arbitrary datum based on flood experience. High tide.

HYDROLOGIC CYCLE - A convenient term to denote the circulation of water from the sea, through the atmosphere, to the land; and thence, with many delays, back to the sea by overland and subterranean routes, and in part by way of the atmosphere without reaching the sea.

INFILTRATION - The flow of the fluid into a substance through pores or small openings. It connotes flow into a substance in contradistinction to the word percolation, which connotes flow through a porous substance.

INTERCEPTION (HYDROLOGY) - The process and the amount of rain or snow stored on leaves and branches and eventually evaporated back to the air. Interception equals the precipitation on the vegetation minus stem-flow and throughfall.

LIMNOLOGY - That branch of hydrology pertaining to the study of lakes or reservoirs.

PERCOLATION - The movement, under hydrostatic pressure, of water through the interstices of a rock or soil, except the movement through large openings, such as caves.

PERCOLATION, DEEP - The amount of water that passes below the root zone of the crop or vegetation.

GENERAL TERMINOLOGY (CONT'D)

PRECIPITATION - As used in hydrology, precipitation is the discharge of water, in liquid or solid state, out of the atmosphere, generally upon a land or water surface. It is the common process by which atmospheric water becomes surface or subsurface water. The term "precipitation" is also commonly used to designate the quantity of water that is precipitated.

RAIN - Liquid precipitation.

RAINFALL - The quantity of water that falls as rain only. Not synonymous with precipitation.

RUNOFF - That amount of the precipitation that appears in surface streams. It is the same as streamflow unaffected by artificial diversions, storage, or other works of man in or on the stream channels.

ADJUSTED MEAN ANNUAL RUNOFF - Average annual runoff adjusted for length of record by comparison with record at pivot stations.

AVERAGE ANNUAL RUNOFF - Average of water year runoff in inches for the total record.

BASE FLOW - (See Base Runoff.)

BASE RUNOFF - Sustained or fair weather runoff. In most streams, base runoff is composed largely of groundwater effluent. The term base flow is often used in the same sense as base runoff. However, the distinction is the same as that between streamflow and runoff. When the concept in the terms base flow and base runoff is that of the natural flow in a stream, base runoff is the logical term.

SEDIMENT - Fragmental or clastic mineral particles derived from soil, alluvial, and rock materials by processes of erosion; and transported by water, wind, ice, and gravity. A special kind of sediment is generated by precipitation of solids from solution, i.e., calcium carbonate and iron oxides. Excluded from the definition is vegetation, wood, bacterial, and algal slimes and extraneous lightweight artificially made substances such as trash, plastics, flue ash, dyes, and semisolids.

SEDIMENT DISCHARGE - The rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

STREAMFLOW REGULATION - The artificial manipulation of the flow of a stream.

GENERAL TERMINOLOGY (CONT'D)

SURFACE WATER - The water on the surface of the land, representing the drainage from the land. When we speak of surface water we mean streamflow, regardless of its source. Lakes and reservoirs are viewed as streamflow in storage.

WATER YIELD - The runoff from the drainage basin, including groundwater outflow that appears in the stream, plus groundwater outflow that bypasses the gaging station and leaves the basin underground, and minus groundwater inflow that moves into the drainage basin underground from adjacent drainage basins. Water yield is the precipitation minus the evapotranspiration.

ANALYSIS CONCEPTS

ANNUAL FLOOD SERIES - A list of annual floods.

CORRELATION - The process of establishing a relation between a variable and one or more related variables. Correlation is simple if there is only one independent variable; multiple, if there is more than one independent variable. For gaging station records, the usual variables are the short-term gaging station record and one or more long-term gaging station records.

CORRELATIVE ESTIMATES - A discharge determined by correlation. A correlative estimate represents a likely value of the discharge from any particular period--commonly a month, according to a specified method of analysis.

DURATION - A specified period of time.

EXCEEDENCE FREQUENCY - Percentage of values that exceed a specified magnitude.

FLOOD FREQUENCY CURVE - A graph showing the number of times per specified period of time on the average, plotted as abscissa, that floods of magnitude, indicated by the ordinate, are equaled or exceeded. Also, a graph similar to that mentioned in the previous sentence but with recurrence intervals of floods plotted as the abscissa.

FLOOD PROBABLE MAXIMUM - The largest flood for which there is any reasonable expectancy.

FLOOD ROUTING - The process of determining progressively the timing and shape of a flood wave at successive points along a river.

FLOW DURATION CURVE - A cumulative frequency curve that shows the percentage of time that specified discharges are equaled or exceeded.

ANALYSIS CONCEPTS (CONT'D)

HIGH FLOW VOLUME - Highest mean discharge or highest volume in acre-feet for a specified period of time.

HIGH FLOW VOLUME FREQUENCY CURVES - Graphical representation of the high flow volume frequency distribution.

HYDROGRAPH - A graph showing stage, flow velocity, or other property of water with respect to time.

HYDROLOGIC BUDGET - An accounting of the inflow to, outflow from, and storage in a hydrologic unit, such as a drainage basin, aquifer, soil zone, lake, reservoir, or irrigation project.

ISOHYETAL LINE - A line drawn on a map or chart joining points that receive the same amount of precipitation.

LOW FLOW FREQUENCY CURVE - A graph showing the magnitude and frequency of minimum flows for a period of given length. Frequency is usually expressed as the average interval, in years, between recurrences of an annual minimum flow equal to or less than that shown by the magnitude scale.

PARTIAL DURATION FLOOD SERIES - A list of all flood peaks that exceed a chosen base stage or discharge regardless of the number of peaks occurring in a year.

RECURRENCE INTERVAL - The average number of years within which a given event will be equaled or exceeded.

SKEW - Deviation from a normal distribution.

SKEW COEFFICIENT - Mathematical measure of asymmetry.

STANDARD DEVIATION - Measure of the variability of a distribution.

STANDARD PROJECT FLOOD - A hypothetical flood that may be expected from the most severe combination of meteorologic and hydrologic conditions that are considered reasonably characteristic of the geographical region involved, excluding extremely rare combinations.

THEISSEN POLYGON - The boundaries of an effective area controlled by a precipitation station, constructed by joining perpendicular bisectors of imaginary lines between adjacent precipitation stations.

THEISSEN WEIGHTING - The area controlled by a precipitation station expressed as percentage of the total area.

DIMENSIONAL CRITERIA

ACRE-FOOT - A unit for measuring the volume of water, is equal to the quantity of water required to cover one acre to a depth of one foot and is equal to 43,560 cubic feet or 325,851 gallons. The term is commonly used in measuring volumes of water used or stored.

AVERAGE DISCHARGE - The arithmetic average of all complete water years of record whether or not they are consecutive. The term "average" is generally reserved for average of record and "mean" is used for averages of shorter periods, namely, daily mean discharge.

CLIMATIC YEAR - A continuous 12-month period during which a complete annual cycle occurs, arbitrarily selected for the presentation of data relative to hydrologic or meteorologic phenomena. The climatic year is usually designated by the calendar year during which most of the 12 months occur.

CUBIC FEET PER SECOND (cfs) - A unit expressing rates of discharge. One cubic foot per second is equal to the discharge of a stream of a rectangular cross section, one foot wide and one foot deep, flowing water an average velocity of one foot per second.

CUBIC FEET PER SECOND PER DAY (cfs-day) (SFD) - The volume of water represented by a flow of one cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.985471 acre-feet, or 646,317 gallons.

WATER YEAR - The 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends.

STREAM MORPHOLOGY

AREA "A" - The contributing drainage area in square miles.

DRAINAGE AREA - The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is enclosed by a drainage divide.

DRAINAGE BASIN - A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

DRAINAGE DIVIDE - The rim of a drainage basin.

FLOODPLAIN - A strip of relatively smooth land bordering a stream, built of sediment carried by the stream. It is called a living floodplain if it is overflowed in times of high water, but a fossil floodplain if it is beyond the reach of the highest flood.

STREAM MORPHOLOGY (CONT'D)

FLOODWAY - See GENERAL, Plan Features, page 4.

GULLY EROSION - The widening, deepening, and headcutting of small channels and waterways due to erosion.

MEANDER - The winding of a stream channel.

REGIME OF A STREAM - "Regime Theory" is a theory of the forming of channels in material carried by the streams. As used in this sense, the word "regime" applies only to streams that make at least part of their boundaries from their transported load and part of their transported load from their boundaries, carrying out the process at different places and times in any one stream in a balanced or alternating manner that permits unlimited growth or removal of boundaries. A stream, river, or canal of this type is called a "regime" when it has achieved average equilibrium; that is, the average values of the quantities that constitute regime do not show a definite trend over a considerable period--generally on the order of a decade. In unspecified use, "regime" and "regimen" are synonyms.

RIVER BASIN - A term used to designate the area drained by a river and its tributaries.

RIVER REACH - Any defined length of a river.

STREAM - A general term for a body of flowing water. In hydrology the term is generally applied to the water flowing in a natural channel as distinct from a canal. More generally, as in the term stream gaging, it is applied to the water flowing in any channel, natural or artificial.

• EFFLUENT STREAM - A stream or reach of a stream fed by groundwater. It is also called a gaining stream.

EPHEMERAL STREAM - A stream that flows only in response to precipitation.

INFLUENT STREAM - A stream that contributes water to the zone of saturation.

INTERMITTENT STREAM - A stream that flows only part of the time or through only part of its reach.

PERENNIAL STREAM - A stream that flows continuously.

STREAMBANK EROSION - Destruction of land areas from active cutting of streambanks.

WATERSHED - See GENERAL, Geographic, page 1.

MEASURING FACILITIES

EVAPORATION PAN - An open tank used to contain water for measuring the amount of evaporation. The U. S. Weather Bureau Class A pan is four feet in diameter, ten inches deep, set up on a timber grillage so that the top rim is about 16 inches from the ground. The water level in the pan during the course of observation is maintained between two and three inches below the rim.

CLASS A EVAPORATION PAN - Standard evaporation pan used by the U. S. Weather Bureau to measure evaporation.

GAGING STATION - A particular site on a stream, channel, lake, or reservoir where systematic observations of gage height or discharge are obtained.

GAGING STATION NUMBER - Assigned location identifier.

PIVOT GAGING STATION - Long record reporting station.

GROUNDWATER TERMINOLOGY

AQUICLUDE - A rock of relatively low permeability that overlies or underlies an artesian aquifer and confines water in the aquifer under pressure. As most aquicludes are leaky, the term aquitard is sometimes used because of its connotation of a retardation rather than a prevention of the movement of water. Such a rock may also be called a confining bed--a term which will now supplant the terms / aquiclude, / aquitard, and / aquifuge in reports of the U. S. Geological Survey--is a body of "impermeable" material stratigraphically adjacent to one or more aquifers.

AQUIFER - A formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

ARTESIAN WELL - A well deriving its water from an artesian or confined water body. The water level in an artesian well stands above the top of the artesian water body it taps.

BANK STORAGE - The change in storage in an aquifer resulting from a change in stage of an adjacent surface-water body.

CAPILLARY FRINGE - The zone immediately above the water table in which some or all of the interstices are filled with water that is under less than atmospheric pressure and that is continuous with the water below the water table. The water is held above the water table by surface tension.

GROUNDWATER TERMINOLOGY (CONT'D)

CONE OF DEPRESSION - A conelike depression of the water table that is formed in the vicinity of a well during pumping. The surface area included in the cone is known as the area of influence of the well.

EFFECTIVE POROSITY - Refers to the amount of interconnected pore space--the space available to fluid transmission. It is expressed as a percentage of the total volume occupied by the interconnecting interstices. Although effective porosity has been used to mean about the same thing as specific yield, such use is discouraged.

FLOWING WELL - A well having sufficient head to discharge water above the land surface.

FORMATION FACTOR (WELL) - The yield of a well per unit of drawdown per unit of saturated thickness of the aquifer times 100.

GAINING STREAM - A stream or reach of a stream whose flow is being increased by inflow of groundwater.

GROUNDWATER - Water in the ground that is in the zone of saturation, from which wells, springs, and groundwater runoff are supplied.

GROUNDWATER AVAILABLE - The amount of groundwater available is that which can be withdrawn on some sort of an areal basis and for a very long time with the conditions stated.

GROUNDWATER (CONFINED) - Confined groundwater is under pressure significantly greater than atmospheric throughout and its upper limit is the bottom of a bed of distinctly lower hydraulic conductivity than that of the material in which the confined water occurs.

GROUNDWATER DRAWDOWN - The decline of the water level in a pumped well or in nearby wells caused by pumping. It is the vertical distance between the static and the pumping level at the well.

GROUNDWATER OUTFLOW - That part of the discharge from one drainage basin to another that moves in an aquifer system that occurs through the groundwater.

GROUNDWATER PUMPING LEVEL - The position of the water surface in a well during pumping.

GROUNDWATER PUMPING LIFT - The vertical distance from the point of free discharge of a well to the pumping level.

GROUNDWATER RECHARGE - The addition of water to the zone of saturation. Infiltration of precipitation and its movement to the water table is one form of natural recharge; injection of water into an aquifer through wells is one form of artificial recharge.

GROUNDWATER TERMINOLOGY (CONT'D)

GROUNDWATER STORAGE COEFFICIENT - The volume of water released from storage or taken into storage in an aquifer per unit surface area of the aquifer per unit change of head.

GROUNDWATER TABLE - The water table is that surface in an unconfined water body at which the pressure is atmospheric.

HYDRAULIC CONDUCTIVITY - The medium has a hydraulic conductivity of unit length per unit time if it will transmit in unit time a unit volume of water at the prevailing kinematic viscosity through a cross section of unit area, measured at right angles to the direction of flow, under a hydraulic gradient of unit change in head over unit length of flow path.

HYDRAULIC GRADIENT - The change in static head per unit of distance in a given direction. If not specified, the direction generally is understood to be that of the maximum rate of decrease in head.

INTERSTICES - The openings or pore spaces in a rock. In an aquifer, they are filled with water.

LOSING STREAM - A stream or reach of a stream that is losing water to the ground.

PERCHED WATER - Unconfined groundwater separated from an underlying body of groundwater by an unsaturated zone.

PERMEABILITY - The capacity of a rock to transmit fluid. The field coefficient of permeability of an aquifer is the coefficient of transmissibility divided by the saturated thickness of the aquifer, in feet.

POROSITY (ROCK) - The porosity of a rock or soil is its property of containing interstices, or voids, and may be expressed quantitatively as the ratio of the volume of its interstices to its total volume. It may be expressed as a decimal fraction or as a percentage. With respect to the movement of water, only the system of interconnected interstices is significant.

POTENTIOMETRIC SURFACE - Replaces the term / piezometric surface--a surface which represents the static head. As related to an aquifer, it is defined by the levels to which water will rise in tightly cased wells.

SPECIFIC RETENTION - The specific retention of a rock or soil is the ratio of (1) the volume of water which, after being saturated, it will retain against the pull of gravity to (2) its own volume.

SPECIFIC WELL CAPACITY - The yield of a well per unit of drawdown after a specified period of pumping. Generally expressed as gallons per minute (gpm) per foot of drawdown.

GROUNDWATER TERMINOLOGY (CONT'D)

SPECIFIC YIELD (GROUNDWATER) - The specific yield of a rock or soil is the ratio of (1) the volume of water which, after being saturated, it will yield by gravity to (2) its own volume. Specific yield is only an approximate measure of the relation between storage and head in unconfined aquifers. It is equal to porosity minus specific retention.

STATIC GROUNDWATER LEVEL - The level of water in a nonpumping or non-flowing well. For the purpose of computing the drawdown, it generally is the water level immediately before pumping begins.

TRANSMISSIVITY (GROUNDWATER) - The rate at which water of the prevailing kinematic viscosity is transmitted through a unit width of the aquifer under a unit hydraulic gradient. It replaces the f coefficient of transmissibility.

UNCONFINED GROUNDWATER - Water in an aquifer that has a water table.

ZONE OF AERATION - Replaces f zone of aeration and f vadose zone--by definition the zone between the land surface and the water table. It includes the capillary fringe. Characteristically, this zone contains liquid water under less than atmospheric pressure, and water vapor and air or other gases usually at atmospheric pressure. In parts of the zone, interstices may be temporarily or permanently filled with water.

ZONE OF SATURATION - In the saturated zone all voids, large and small, are ideally filled with water. The water table is the upper limit of this zone and the water in it is under pressure greater than atmospheric.

RESERVOIR STORAGE TERMINOLOGY

AREA CAPACITY CURVES - A graph showing the relation between the surface area of the water in a reservoir, the corresponding volume, and elevation.

FREEBOARD - The vertical distance between a design maximum water level and the top of a structure.

RESERVOIR - A pond, lake, or basin, either natural or artificial, for the storage, regulation, and control of water.

MULTIPLE-PURPOSE RESERVOIR - A reservoir planned to be used for more than one purpose.

REREGULATING RESERVOIR - See ELECTRIC POWER, General Terminology, page 28.

RESERVOIR STORAGE TERMINOLOGY (CONT'D)

RESERVOIR (CONT'D)

RETARDING RESERVOIR - Ungated reservoir for temporary storage of floodwater. Sometimes called a detention reservoir.

SINGLE-PURPOSE RESERVOIR - A reservoir planned to be used for only one purpose.

RESERVOIR STORAGE - The volume of water in a reservoir at a given time.

ACTIVE STORAGE - Water occupying active storage capacity of a reservoir.

DEAD STORAGE - See ELECTRIC POWER, General Terminology, page 28.

HOLDOVER STORAGE - Water held over from surplus years to supply deficiencies of flow during dry years.

INACTIVE STORAGE - Water occupying inactive storage capacity of a reservoir.

LIVE STORAGE - Water occupying live storage capacity of a reservoir.

POWER STORAGE - That portion of the active storage, designated to be used for generating electric energy. Sometimes referred to as the power pool.

SEASONAL STORAGE - See ELECTRIC POWER, General Terminology, page 28.

SURCHARGE STORAGE - Water occupying surcharge storage capacity of a reservoir.

RESERVOIR STORAGE CAPACITY - The volume of a reservoir available to store water.

ACTIVE STORAGE CAPACITY - The portion of the live storage capacity in which water normally will be stored or withdrawn for beneficial uses, in compliance with operating agreements or restrictions.

DEAD STORAGE CAPACITY - The volume of a reservoir which is below the invert of the lowest outlet and cannot be evacuated by gravity.

INACTIVE STORAGE CAPACITY - The portion of the live storage capacity from which water normally will not be withdrawn, in compliance with operating agreements or restrictions.

LIVE STORAGE CAPACITY - The volume of a reservoir exclusive of dead and surcharge storage capacity.

RESERVOIR STORAGE TERMINOLOGY (CONT'D)

RESERVOIR STORAGE CAPACITY (CONT'D)

SURCHARGE STORAGE CAPACITY - The volume of a reservoir between the crest of an uncontrolled spillway, or the volume between the normal full pond elevation with the crest gates in the normal closed position, and the maximum water-surface elevation for which the dam is designed.

UTILIZATION

CONSUMPTIVE USE - The quantity of water discharged to the atmosphere or incorporated in the products of the process in connection with vegetative growth, food processing, or an industrial process.

CONSUMPTIVE WASTE - The water that returns to the atmosphere without benefiting man.

COOLING WATER CONSUMPTION - See ELECTRIC POWER, Resource Requirements, pages 30.

COOLING WATER REQUIREMENT - See ELECTRIC POWER, Resource Requirements, page 30.

DEPLETION (WATER) - That portion of a water supply withdrawn, applied, or intercepted that is consumptively used.

DIVERSION - The taking of water from a stream or other body of water into a canal, pipe, or other conduit.

IRRIGATION - The controlled application of water to lands to supply water requirements not satisfied by rainfall.

BENEFICIAL IRRIGATION CONSUMPTIVE USE - The quantity of water diverted that is absorbed by the crop and transpired or used directly in the building of plant tissue, together with that evaporated from the cropped area.

CONSUMPTIVE USE REQUIREMENT ANNUAL DISTRIBUTION - The percentage of consumptive use required by months.

CONSUMPTIVE USE REQUIREMENT (CROP) - The annual quantity of water in acre-feet per acre absorbed by the crop and transpired or used directly in the building of plant tissue together with that evaporated from the cropped area.

CROP IRRIGATION REQUIREMENT - The amount of irrigation water in acre-feet per acre required by the crop; it is the difference between crop consumptive use requirement and effective precipitation.

UTILIZATION (CONT'D)

IRRIGATION (CONT'D)

EFFECTIVE PRECIPITATION - Effective precipitation is that part of the precipitation falling on a crop area that is effective in meeting the consumptive use requirements of the crop.

FARM IRRIGATION DELIVERY REQUIREMENT - The amount of water in acre-feet per acre to serve a cropped area from a canal turnout. It is the crop irrigation requirement plus farm waste and deep percolation.

FARM WASTE AND DEEP PERCOLATION - The amount of irrigation water delivered to the crop area from a canal turnout or groundwater pump that is not consumptively used on the crop area. Includes water moving through the root zone to the water table, water intercepted by drainage systems, and surface waste to natural or constructed drainage systems, and noncropped areas.

FIELD MOISTURE CAPACITY - The quantity of water which can be permanently retained in the soil in opposition to the downward pull of gravity.

GROSS SYSTEM DIVERSION (IRRIGATION) - The quantity of water diverted by canal system.

IRRIGATED AREA - See GENERAL, Plan Features, page 4.

IRRIGATION CONVEYANCE LOSS AND WASTE - The losses of water in transit from a supply reservoir, point of diversion, or groundwater pump (if not on farm) to the point of use, whether in natural channels or in artificial ones, such as canals, ditches, and laterals.

IRRIGATION DEPLETION - The amount of diverted water consumptively used, beneficially and nonbeneficially, in serving a cropped area. It is the gross diversion minus return flow.

IRRIGATION EFFICIENCY - The percentage of water applied that can be accounted for in soil moisture increase.

LEACHING REQUIREMENT - A fundamental principle that, to sustain irrigation permanently, some percolation of water through the root zone is required to move the residual salts out of the root zone and maintain an adequate soil-salt balance for crop production. The amount of water required for this purpose is known as a leaching requirement.

UTILIZATION (CONT'D)

IRRIGATION (CONT'D)

NONBENEFICIAL IRRIGATION CONSUMPTIVE USE - The quantity of water depleted by irrigation in excess of the beneficial irrigation consumptive use. It is the gross diversion minus return flow and beneficial irrigation consumptive use.

RETURN FLOW (IRRIGATION) - That part of irrigation water that is not consumed by evapotranspiration and that returns to its source or another body of water.

SOIL MOISTURE - Water diffused in the soil, the upper part of the zone of aeration from which water is discharged by the transpiration of plants or by soil evaporation.

SUPPLEMENTAL IRRIGATION - When irrigation water supplies are obtained from more than one source, the source furnishing the principal supply is commonly designated the primary source, and the sources furnishing the additional supplies, the supplemental sources.

RIPARIAN - Pertaining to the banks of a stream or lake.

STREAMFLOW DEPLETION - The amount of water that flows into a valley, or onto a particular land area, minus the water that flows out of the valley or off the particular land area.

WITHDRAWAL USE OF WATER - The water removed from the ground or diverted from a stream or lake for use.

LANDS

GENERAL TERMINOLOGY

LAND AREA - The solid portion of the earth's surface including bodies of water less than 40 acres and streams of less than 1/8 mile wide.

LAND RESOURCE AREAS - Broad, geographic areas having similar soil, climatic, geologic, vegetative, and topographic features.

LAND RESOURCE REGIONS - Geographically associated major land resource areas which divide the United States into 20 physiographic areas uniform enough to be significant for national planning.

LAND RESOURCES - An area of land containing or supporting all or some of certain resources in some combination. The resources include soil, water, timber, forage, wildlife, and minerals.

WATER AREA (CENSUS) - Water areas of more than 40 acres and water courses more than 1/8 mile wide.

CLASSIFICATION

CAPABILITY UNIT (LAND) - A grouping of one or more individual soil mapping units having similar potentials and continuing limitations or hazards. The soils are sufficiently uniform to produce similar crops, require similar conservation treatment, and have comparable productivity.

CLASSES (LANDS) - Groups of capability subclasses and units that have the same relative degree of hazards or limitations. The risks of soil damage or limitation in use become progressively greater from Class I to Class VIII.

FRAIL LANDS - Lands characterized by either a thin or unstable topsoil, or in some instances no topsoil whatsoever. Subsoils are normally clays, fine silts, or sands. Frail lands are ordinarily those on which the plant cover is sparse or easily injured, leading to increased runoff or erosion. Many of these areas are geologic parent materials that do not have sufficient soil development to produce a vegetative cover that would stabilize normal geologic erosion. Some of these areas may consist of barren rock or shale deposits.

IMPROVABLE RANGE - Range which is feasible to treat, that needs treatment in the sense of establishment or reestablishment of vegetation, improvement of cover, protection of vegetation, and management of water.

IMPROVED RANGE - Range that does not need treatment or that has been treated and is maintained in such condition.

CLASSIFICATION (CONT'D)

IRRIGABLE LANDS - Lands having soil, topography, drainage, and climate conditions favorable for irrigation and located in a position where a water supply is or can be made available at costs presently conducive to private or public development.

IRRIGATED LANDS - Lands having appropriate water rights receiving water by controlled artificial means for agricultural purposes from subsurface sources and/or from surface sources.

FULL SERVICE IRRIGATED LANDS - Irrigated lands with a full and adequate water supply.

IRRIGATION FLOODWATER SPREADING SYSTEM - Diversion of ephemeral stream floodflows to hay or pastureland. Water rights are not normally required.

PARTIAL SERVICE IRRIGATED LANDS - Irrigated land with a partial and inadequate water supply.

SUBIRRIGATED LANDS - Land with a high water table condition, either natural or artificially controlled, that normally supplies a crop irrigation requirement.

NONIMPROVABLE RANGE - Range which is not subject to improvement because of present physical and/or economic limitations.

SOIL MAPPING UNIT (LANDS) - A portion of the landscape that has similar characteristics and qualities, and whose limits are fixed by precise definitions.

SOIL RESOURCE GROUP - A grouping of land capability units, or soils that have similar cropping patterns, yield characteristics, responses to fertilizers, management, and land treatment measures.

SUBCLASSES (LANDS) - Groups of capability units which have the major conservation problem, such as, e, erosion and runoff; w, excess water; s, root zone limitations; c, climatic limitations.

OWNERSHIP

FEDERAL LANDS - All classes of land owned by the Federal Government, which includes both public domain land and acquired Federal land.

AFTER-ACQUIRED FEDERAL LANDS - Lands acquired by the Federal Government through purchase, condemnation, or gift.

OWNERSHIP (CONT'D)

FEDERAL LANDS (CONT'D)

NATIONAL FOREST LANDS - Federal lands which have been designated by executive order or statute as national forests or purchase units, and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones title III lands.

PUBLIC LANDS OR PUBLIC DOMAIN LANDS - Original public domain lands which have never left Federal ownership; also includes lands in Federal ownership which were obtained by the Federal Government in exchange for public lands or for timber on public lands.

WITHDRAWN FEDERAL LANDS - Federal lands for which formal withdrawal action has been taken which restricts the disposition of specific public lands and which holds them for specific public purposes; also, public lands which have been dedicated to public purposes.

INDIAN LANDS OR INDIAN RESERVATIONS - Areas of land reserved by treaty, statute, or executive order for the use and benefit of specific Indian tribe or tribes. These lands are actually private property belonging to the Indians, although the Federal Government usually holds the title in trust for them.

PRIVATELY OWNED OR PRIVATE LANDS - All classes of land owned by corporations, companies, associations, individuals, or groups of individuals; includes organized groups with recognition of legal identity under State law.

FARMER OWNED LANDS - Lands owned by operators of farms.

FOREST INDUSTRY LANDS - Lands owned by companies or individuals operating wood-using plants.

MISCELLANEOUS PRIVATE FOREST LANDS - Privately owned lands other than forest industry or farmer owned.

STATE LANDS - All classes of land owned by the respective State governments, including all departments and institutions of the State.

WITHDRAWN LANDS - Lands taken from private ownership and dedicated to public use, such as reservoirs, highways, parks, fish and wildlife conservation, etc.

LAND USE

ANCILLARY LAND USE - A use accessory or auxiliary to the primary use.

LAND USE (CONT'D)

CROPLANDS - Land currently tilled, including cropland harvested, crop failure, summer fallow, idle cropland, cropland in cover crops or soil improvement crops not harvested or pastured, rotation pasture, and cropland being prepared for crops, or newly seeded crops. Cropland also includes land in vegetables and fruits including those grown on farms for home use. All tame hay is included as cropland. Wild hay is excluded from cropland and included in pasture and range.

IDLE CROPLANDS - This includes the land classified as cropland because of prior use but not cropped or included in other categories of cropland not harvested. Land in Government programs (Conservation Reserve, Acreage Reserve, Feed Grain and Wheat Diversion, etc.), is included as idle cropland except the acreage which is in exempt crops as part of a regular summer fallow--crop rotation. These are classified according to their "primary" use. Crops are reported on a planted-acre basis; therefore, a crop failure category does not exist.

IRRIGATED CROPLAND - Land to which water is usually applied by controlled artificial means. This includes ditch, flood, and sprinkler irrigation, but excludes such things as subirrigation and flood-water spreading systems.

SUMMER FALLOW - This refers to cropland plowed or cultivated and left unseeded in order to control weeds or conserve moisture but will be utilized for production during the next season.

FOREST AND WOODLANDS - Lands which are at least 10 percent stocked by forest trees of any size and capable of producing timber or other wood products. Lands from which the trees have been removed to less than 10 percent stocking and which have not been developed for other use, and afforested (planted) areas. The minimum planted area that qualified as forest land in CNI was 1 acre, provided the strip of timber was at least 120 feet wide.

COMMERCIAL FOREST LANDS - Forest land which is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both accessible and inaccessible areas and both operable and currently inoperable trees.

NONCOMMERCIAL FOREST LANDS - Unproductive forest land incapable of yielding crops of industrial wood because of adverse site conditions, and productive forest land withdrawn from commercial timber use through statute or administrative regulation.

LAND USE (CONT'D)

FOREST AND WOODLANDS (CONT'D)

NONSTOCKED FOREST LANDS - Commercial forest land less than 10 percent stocked with growing stock trees.

PRODUCTIVE--RESERVED FOREST LANDS - Productive public forest land withdrawn from timber utilization through statute or administrative regulation.

LAND ADEQUATELY MANAGED OR TREATED - This group includes all land on which the use, management, and treatment meets the minimum standards of the conservation programs of the SCS, the Soil Conservation Districts, the Indian Service, or of the Federal Land Management Agency concerned. It includes all types of management, vegetation, and mechanical practices.

LAND USE - Primary occupier of a tract of land, i.e., crops, fallow, idle, timber.

MAJOR LAND USE - Grouping primary uses together into classes with similar characteristics, i.e., cropland, pasture, forest.

MULTIPLE-USE (LANDS) - Management of various surface and subsurface resources in combination to satisfy two or more functional purposes.

OTHER LANDS - All lands not specifically classified as transportation, urban, and built-up (TUB); cropland; pasture and range; forest; etc., are included in this group. (a) Other lands include farmsteads, farmlands, idle land, wildlife area, and similar areas, and (b) other lands include sites of crossroads, filling stations, rural nonfarm residences, country churches, cemeteries, and school grounds, as well as tracts of any size of open, idle, rural, nonfarm land, etc.

PASTURE - An area of predominantly introduced grass used for grazing.

PASTURE AND RANGE - Land in grass or other long-term forage growth that is used primarily for grazing. Pasture and range include grassland, nonforested pasture, and other grazing land with the exception of pasture in the crop rotation. It may contain shade trees or scattered timber trees with less than 10 percent canopy, but the principal plant cover is such as to identify its use primarily as permanent grazing land. This does include wild (native) hay.

LAND USE (CONT'D)

RANGELANDS - Land in grass or other long-term forage growth of native species used primarily for grazing. It may contain shade trees or scattered timber trees with less than 10 percent canopy, but the principal plant cover is such as to identify its use primarily as permanent grazing land. This does include wild (native) hay. It also includes sub-irrigated native meadows and all areas of native grass or meadows which have "water" spreading systems.

IRRIGATED RANGELANDS - Land in grass, or other long-term forage growth, of native species to which water is applied by controlled artificial measures such as ditch, flood, or sprinkler irrigation. It excludes areas subirrigated and lands serviced by uncontrolled water spreading systems.

RECREATION AREA - (See Outdoor Recreation Area, page 68)

DEVELOPED RECREATION LANDS - Recreation lands that are developed relatively intensively with any type of recreation facilities, recreation roads, or other visitor improvements. Also included are lands adjacent to facilities that receive intensive human use.

MULTIPLE-USE RECREATION LANDS - Lands which are or can be developed and managed for recreation in combination with other uses.

UNDEVELOPED RECREATION LANDS - Recreation lands that support developed area through providing a quality environment, buffer area or scenic backdrop; that provide for extensive recreation activities, such as hunting, hiking, and nature walks; or that are characterized by (and may be set aside for) important wilderness, geologic, or other natural values. Undeveloped recreation lands are also termed "extensive" recreation lands.

TRANSPORTATION, URBAN, AND BUILT-UP AREAS (TUB) - Cities, villages, other built-up areas of more than 10 acres, industrial sites, railroad yards, cemeteries, airports, golf courses, shooting ranges, institutional, and public administrative sites; and the area devoted to roads and railroads.

WILDERNESS-TYPE AREAS - A collective term used to describe all major areas specially classified and set aside for their primitive and relatively undisturbed aesthetic values.

NAVIGATION

GENERAL TERMINOLOGY

BARGE - A flat-bottomed vessel, usually nonself-propelled, used chiefly on inland waterways for the transport of commodities.

EXPORTS-IMPORTS - These terms apply to traffic between the United States and foreign ports, including the Panama Canal Zone.

HARBOR - A port or haven where ships anchor; part of a body of water protected and deep enough to furnish safe anchorage.

NAVIGATION - Ship traffic or commerce.

NAVIGATION

BREAK-BULK CARGO - That packaged cargo which is loaded into a vessel by mark and count, as distinct from bulk and containerized cargo.

BULK FREIGHT - Basic commodities in their raw or semiprocessed form, that are not sacked, boxed, bundled, or otherwise assembled, but which are carried loose in vessels of transport.

CABOTAGE - Limitation of domestic traffic to vessels documented under the flag of that country.

CANAL - An artificial watercourse for navigation.

CARGO - The lading of a vessel, railcar, or vehicle.

CARRIER - An individual, partnership, or corporation engaged in the business of transporting goods.

COMMON CARRIER - A transportation line engaged in the business of transporting persons or goods for compensation and providing services for all shippers impartially.

CONTRACT CARRIER - Those for-hire carriers which do not hold themselves ready to serve the general public but instead serve one or a few shippers under specific contracts; not subject to regulations as to publication of rates.

COASTWISE SERVICE - Considered to be movement by water to and from points on the Atlantic coast, Gulf coast, or Pacific coast, also includes service between U. S. seacoast ports and Puerto Rico, Virgin Islands, Hawaii, and Great Lake ports.

COMMODITY - Any article of commerce or trade that can be transported and has economic value.

NAVIGATION (CONT'D)

CONTAINER - Anything in which articles are packed; specifically a large metal receptacle which may be transferred readily from one vehicle to another, and specifically designed to facilitate coordination and transportation of commodities.

DOMESTIC SHIPPING - Composed of coastwise, intercoastal, Great Lakes, and inland water transportation. Also includes Puerto Rico and the Virgin Islands.

DRAFT (VESSEL) - The number of feet or inches below the waterline that a vessel is submerged.

FLOTILLA TOW - A string of 20-40 barges, three to six abreast.

FREIGHT - Merchandise hauled by transportation lines.

INBOUND-OUTBOUND TRAFFIC - Traffic moving from one waterway into another is termed outbound in the case of the shipping waterway and inbound with respect to the receiving waterway.

INLAND WATERWAY NAVIGATION - Use of navigable rivers and canals, including the intracoastal waterways, for movement of commodities.

INTEGRATED TOW - An assembly of several barges designed in such a way that the underwater shape takes on the appearance of a single vessel (lead barge has easy rake and square stern; middle barges square at both ends; end barge has square bow and short rake on stern).

INTERCOASTAL WATERWAY TRANSPORTATION - Embraces all movements which involve transit between U. S. coasts.

INTERNAL RECEIPTS AND SHIPMENTS - These terms apply to traffic between ports or landings wherein the entire movement takes place on inland waterways.

KNOT - The nautical mile (6,076 feet); one nautical mile/hour.

LADING - That which constitutes a load; the freight in a car or vessel.

LASH/SEABEE VESSELS (BARGE CARRYING VESSELS) - Cargo vessels designed to carry either 40-80 or 38 barges, respectively, between ports; have a shipboard crane or elevator to load barges aboard or to unload at destination port.

LOCAL TRAFFIC - Movements of freight within the confines of a port whether the port has only one or several arms or channels.

LOCK - An enclosure with gates at each end used in raising or lowering vessels as they pass from level to level.

NAVIGATION (CONT'D)

MINI-SHIP - A shallow-draft vessel capable of navigating inland waterways to St. Louis, Missouri, and which services the Caribbean Sea area. The vessel has a length of 215 feet, beam of 50 feet, and a maximum draft of 16 feet.

NAUTICAL MILE - Any of various units of distance used for sea and air navigation based on the length of a minute of arc of a greater circle of the earth.* U. S. now officially uses 6,076.116 feet (international agreement). Britain uses 6,080 feet as the unit.

PALLET - A portable platform of wood or other material for handling, storage, or movement of commodities in units.

PORT - A harbor town or city where vessels may take on or discharge cargo; haven where vessels may anchor or moor.

PORT OF CALL - An immediate port where ships customarily stop for supplies, repairs, or transshipment of cargo; a stop included on an itinerary.

PORT OF ENTRY - A place where foreign goods may be cleared through a customhouse.

PRIVATE CARRIER - Any person other than a common or contract carrier who transports commerce or property of which such party is the owner, when such transportation is in the furtherance of any commercial enterprise.

RO-RO SHIP (ROLL-ON/ROLL-OFF) - A cargo vessel designed to permit cargo trailers with wheels and other vehicles to be driven aboard ship rather than being hoisted aboard the vessel.

SHIP BARGE - A barge specially constructed for waterborne use on inland waterways and for carriage in or upon oceangoing vessels. Storage of such barges upon the mother ship is made by shipboard elevators or cranes of special design. There are currently two distinct types of mother ships, LASH and SEABEE.

THROUGH TRAFFIC - Traffic moving through a waterway to and from points on other waterways.

TON-MILE - A statistical term defined as one ton of freight carried one statute mile or its equivalent, i.e., one-half ton carried two statute miles.

TONNAGE - Number of long or short tons of freight handled.

* Values differ because the earth is not a true sphere.

NAVIGATION (CONT'D)

TONNAGE (CONT'D)

CARGO TONNAGE - Tons of weight or measurement tons of space; within U. S. the weight measurement = 2,000 pounds (short or net ton); elsewhere usually 2,240 pounds (long or gross ton); measurement ton is usually 40 cubic feet.

DEADWEIGHT TONNAGE - The number of long tons (2,240 pounds) of cargo, stores, bunker fuel, and crew carried by a ship when loaded to her maximum summer load line.

DISPLACEMENT TONNAGE - The weight in long tons (2,240 pounds) of water displaced by the ship when afloat; "light" displacement is the weight without fuel, passengers, and cargo.

GROSS TON (VESSEL) - Applies to the volume of the vessel itself and not to its cargo carrying capacity by weight. It is determined by dividing by 100 the contents, in cubic feet, of the vessels closed-in spaces. A vessel ton is 100 cubic feet; register ton.

GROSS TON (WEIGHT) - 2,240 pounds; long ton.

LONG TON - 2,240 pounds; gross ton.

MEASUREMENT TON - 40 cubic feet.

METRIC TON - 2,204.6 pounds.

NET TON - 2,000 pounds; short ton.

NET TONNAGE (VESSEL) - A vessel's gross tonnage minus deductions for space occupied by accommodations for crew, machinery for navigation, the engine rooms, and fuel. It represents the space available for the accommodation of passengers and the stowage of cargo.

REGISTER TON - 100 cubic feet; gross ton (vessel).

SHORT TON - 2,000 pounds; net ton.

VESSEL TON - 100 cubic feet; gross ton (vessel).

TOWBOAT - A compact shallow-draft vessel with square bow and towing knees for pushing tows of barges on inland waterways, having an almost flat bottom, and usually, conventional doors and windows.

TRAFFIC - Passengers or cargo carried by transportation; the movement of vessels or equipment over the waterways.

TRAFFIC DENSITY - The amount of traffic handled per mile within a given region.

RECREATION

GENERAL TERMINOLOGY

LAND-ORIENTED RECREATION ACTIVITY - A recreational activity that is essentially dependent upon a land area for fulfillment.

OUTDOOR RECREATION - A leisure-time activity which utilizes an outdoor setting.

TOURIST - A recreationist or "drive through" vacation traveler who has traveled more than 150 miles to reach a recreation area.

WATER-ORIENTED RECREATION ACTIVITY - A recreational activity that is dependent upon or enhanced by the presence of a water area.

ACTIVITY

ACTIVITY-DAY - Participation by an individual in a specific outdoor recreation activity during any part of a day. "Activity-occasion" is an interchangeable term with the same meaning.

BOATING - The use of boats for recreational purposes, which include canoes, sailboats, rowboats, rafts, floats, and outboard and inboard motor boats.

CAMPING - Living outdoors using a bedroll, sleeping bag, tent, trailer, or similar shelter. It does not include formal group camping by organizations such as the Boy Scouts, and 4-H groups, unless public facilities are used.

HIKING - Destination-oriented walking for recreational purposes, normally involving the carrying of a pack, provisions, and/or some kind of shelter.

NATURE WALKS - A recreational activity that consists of walking for the specific purpose of observing, collecting, photographing, or studying flora, fauna, geological formation, and other natural phenomena.

PICNICKING - Eating a meal out-of-doors and away from home.

RECREATION-DAY - A visit by an individual to a recreation area for recreation purposes during a significant portion or all of a 24 hour-day.

SIGHTSEEING - Intentionally observing some interesting outdoor resource, but does not include casual viewing from a car window while engaged in, for example, business travel.

SWIMMING - A recreational activity that includes bathing, scuba diving, skin diving, and playing water games.

ACTIVITY (CONT'D)

WALKING FOR PLEASURE - Any type of walking or strolling without pack for recreational or health purposes, excluding activity considered to be "hiking." Includes the traditional "walk around the block."

WATER SKIING - An activity that includes all of the water surface sports which involve a person being towed behind a boat using such equipment as water skis or aquaplanes.

RESOURCE

OUTDOOR RECREATION AREA - A land and/or water area administered as a unit for outdoor recreation. It may include both developed and undeveloped acreages. (May be a multiple-use area.)

OUTDOOR RECREATION CARRYING CAPACITY - The number of people an area or facility can handle at a given time without resource damage.

OUTDOOR RECREATION FACILITY - Recreation structures or any conveniences for outdoor recreation activities in a designated area.

OUTDOOR RECREATION RESOURCE - Any land and/or water area which can be used for outdoor recreation.

OUTDOOR RECREATION SITE - A small and contiguous tract of land developed for a specific recreation activity or closely related combination of activities such as swimming or camping and picnicking.

OUTDOOR RECREATION SUPPLY - Resources and facilities capable of providing outdoor recreation.

OUTDOOR RECREATION UNIT - A facility or group of complementary facilities normally in a camp, picnic site, or park, designed to accommodate a family. Examples would include a table--fireplace--tent site facility group.

REQUIREMENT

LATENT RECREATION DEMAND - The demand inherent in a population not reflected in the use of existing resources that could be expected with improved opportunities or shifts in certain socioeconomic conditions.

NONRESIDENT RECREATION DEMAND - Calculated participation in recreation activities by those living outside a particular WRPA. Includes demand experienced in a particular WRPA that is generated by those living in SMSA's farther than 150 miles of the WRPA.

REQUIREMENT (CONT'D)

OUTDOOR RECREATION DEMAND - A measure of outdoor recreation participation in activity-days or recreation-days, given a certain set of socio-economic and opportunity conditions.

RECREATION DESIGN LOAD - The maximum number of recreationists expected to use an area at any one time on a normal summer Sunday, and for which facilities and land or water would have to be provided.

RECREATION LAND OR WATER AREA REQUIREMENTS - The total amount of resources, normally expressed in acres, required to satisfy all recreation demands in an area for any target year. In other words, this represents a combination of "supply" and "needs." May be used in reference to water area, developed land area, undeveloped land area, or a combination of the foregoing.

RECREATION NEED - The difference between projected recreation demands and the capability of the resources currently available to satisfy those demands.

RESIDENT RECREATION DEMAND - Calculated participation in recreation activities by those living within a particular subregion. (The WRPA demand generated by those living in SMSA's within 150 miles of the WRPA area is included with resident demand figures.)

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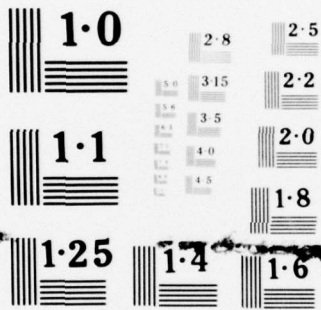
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NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

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WATER
RESOURCES
PLANNING
AREAS

