

Appendix I

Definitions

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APPENDIX I

Definitions

Active capacity. The reservoir capacity normally usable for storage and regulation of reservoir inflows to meet established reservoir operating requirements. It extends from the highest of either the top of exclusive flood control capacity, the top of joint use capacity, or the top of active conservation capacity, to the top of inactive capacity. It is also the total capacity less the sum of the inactive and dead capacities. The reservoir capacity that can be used for irrigation, power, municipal and industrial use, fish and wildlife, recreation, water quality, and other purposes.

Alternatives. Courses of action that may meet the objectives of a proposal at varying levels of accomplishment, including the most likely future conditions without the project or action.

Appraisal-level of detail. The level of detail necessary to facilitate making decisions on whether or not to proceed with a detailed study and evaluation of any alternative.

Appraisal study (appraisal report). A study incorporating an appraisal-level of detail.

Arid. A term describing a climate or region in which precipitation is so deficient in quantity or occurs so infrequently that intensive agricultural production is not possible without irrigation.

Authorization. An act by the Congress of the United States which authorizes use of public funds to carry out a prescribed action.

Authorized Reclamation project. A congressionally approved Bureau of Reclamation project that has been authorized for specific purposes.

Average. The arithmetic mean. The sum of the values divided by the number of values.

Baseline (condition or alternative). Conditions that would prevail if no actions were taken.

Candidate species. Plant or animal species that are candidates for designation as endangered (in danger of becoming extinct) or threatened (likely to become endangered), but is undergoing status review by the USFWS.

Channel. Natural or artificial watercourse of perceptible extent, with a definite bed and banks to confine and conduct continuously or periodically flowing water. Rivers and streams. A general term

Conservation. Increasing the efficiency of energy use, water use, production, or distribution.

Consumptive use. A use which lessens the amount of water available for another use. Water uses normally associated with man's activities, primarily municipal, industrial, and irrigation uses that deplete water supplies. Water removed from available supplies without direct return to a water resource system, for uses such as manufacturing, agriculture, and food preparation. A nonconsumptive use would be one such as boating or swimming. Combined amounts of water needed for transpiration by vegetation and for evaporation from adjacent soil, snow, or

intercepted precipitation. Also called: crop requirement, crop irrigation requirement, consumptive use requirement.

Consumptive water use. Total amount of water used by vegetation, man's activities, and evaporation of surface water.

Critical habitat. Defined in Section 3(5)(A) of the ESA as:

(1) The specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical and biological features essential to the conservation of the listed species and which may require special management considerations for protection; and

(2) Specific areas outside the geographical area occupied by a species at the time it is listed upon a determination by the Secretary of the Department of Interior that such areas are essential for the conservation of the species. These areas have been legally designated via Federal Register notices.

Cubic feet per second (cfs or ft³/s). A unit of discharge for measurement of a flowing liquid equal to a flow of 1 cfs (448.8 gallons per minute (gpm), 7.48 gallons per second, or 1.98 AF per day). A rate of streamflow; the volume, in cubic feet, of water passing a reference point in 1 second.

CWA. Clean Water Act, California Waterfowl Association.

Dam. A barrier built across a watercourse to impound or divert water. A barrier that obstructs, directs, retards, or stores the flow of water. Usually built across a stream. A structure built to hold back a flow of water.

Delivery. The amount of water delivered to the point of use. The difference between delivery and release is usually the same as consumptive use.

Demand. Rate at which electric energy is used, expressed in kilowatts, whether at a given instant, or averaged over any designated period of time. Maximum water use under a specified condition.

Dewatering As opposed to unwatering, dewatering is the removal and control of ground water from pores or other open spaces in soil or rock formations to the extent that allows construction activities to proceed as intended, including the relief of ground water pressure. Removing water by pumping, drainage, or evaporation. The removal of ground water and seepage from below the surface of the ground or other surfaces through the use of deep wells and wellpoints.

Discharge. Volume of water that passes a given point within a given period of time. Any spilling, leaking, pumping, pouring, emitting, emptying, or dumping not including permitted activities in compliance with section 402 of the CWA.

District. An entity that has a contract with the Bureau of Reclamation for the delivery of irrigation water. Such entities include, but are not limited to: canal companies, conservancy districts, ditch companies, irrigation and drainage districts, irrigation companies, irrigation

districts, reclamation districts, service districts, storage districts, water districts, and water users associations.

Diversion. A process which, having return flow and consumptive use elements, turns water from a given path. Removal of water from its natural channel for human use. Use of part of a stream flow as a water supply. Channel constructed across the slope for the purpose of intercepting surface runoff, changing the accustomed course of all or part of a stream. A structural conveyance (or ditch) constructed across a slope to intercept runoff flowing down a hillside, and divert it to some convenient discharge point.

Diversion channel (canal or tunnel). A waterway used to divert water from its natural course. The term generally applies to a temporary arrangement (e.g., to bypass water around a damsite during construction). Channel is normally used instead of canal when the waterway is short. Occasionally the term is applied to a permanent arrangement (diversion canal, diversion tunnel, diversion aqueducts).

Diversion dam. A dam built to divert water from a waterway or stream into a different watercourse.

Diversion inlet. A conduit or tunnel upstream from an intake structure. Diversion inlet may be integral with the outlet works or be part of a separate conveyance structure that will only be used during construction.

Drainage. Process of removing surface or subsurface water from a soil or area. A technique to improve the productivity of some agricultural land by removing excess water from the soil; surface drainage is accomplished with open ditches; subsurface drainage uses porous conduits (drain tile) buried beneath the soil surface.

Drainage area. The area which drains to a particular point on a river or stream. The drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point.

Drainage basin. All of the area drained by a river system. The drainage basin is 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. The area of land that drains its water into a river.

Drainage system. Collection of surface and/or subsurface drains, together with structures and pumps, used to remove surface or ground water.

Drawdown. Lowering of a reservoir's water level; process of depleting a reservoir or ground water storage. The drop in the water table or level of water in the ground when water is being pumped from a well. Vertical distance the free water surface elevation is lowered or the reduction of the pressure head due to the removal of free water. The difference between a water level and a lower water level in a reservoir within a particular time. The amount of water used from a reservoir.

Dredge. To dig under water. A machine that digs under water.

Drought. Climatic condition in which there is insufficient soil moisture available for normal vegetative growth. A prolonged period of below-average precipitation.

Economic analysis. A procedure that includes both tangible and intangible factors to evaluate various alternatives.

Elevation. The height of a point above a plane of reference. Generally refers to the height above sea level.

Endangered species. A species or subspecies whose survival is in danger of extinction throughout all or a significant portion of its range.

Endangered species act (ESA). This act provides a framework for the protection of endangered and threatened species.

Environment. All biological, chemical, social, and physical factors to which organisms are exposed. The surroundings that affect the growth and development of an organism.

Environmental assessment (EA). A National Environmental Policy Act (NEPA) compliance document used to determine if an action would have a significant effect on the human environment. If not, a finding of no significant impact (FONSI) is written. If so, an environmental impact statement (EIS) is written.

Environmental impact statement (EIS). A NEPA compliance document used to evaluate a range of alternatives when solving the problem would have a significant effect on the human environment. The EIS is more than a document, it is a formal analysis process which mandates public comment periods. An EIS covers purpose and need, alternatives, existing conditions, environmental consequences, and consultation and coordination.

Environmental Protection Agency (EPA). The Environmental Protection Agency's mission is to protect human health and to safeguard the natural environment.

ESA. Endangered Species Act (of 1973).

Facilities. Structures associated with Reclamation irrigation projects, municipal and industrial water systems, power generation facilities, including all storage, conveyance, distribution, and drainage systems.

Federal organizations. Agencies, departments, or their components of the Federal Government that have a role in dam safety emergency planning and preparedness (i.e., Reclamation, U.S. Army Corps of Engineers, National Weather Service, etc.).

Fill. Manmade deposits of natural soils or the process of the depositing. Manmade deposits of natural soils or rock products and waste materials designed and installed in such a manner as to provide drainage, yet prevent the movement of soil particles due to flowing water. An earth or broken rock structure or embankment. Soil or loose rock used to raise a grade. Soil that has no value except as bulk.

Flood. A temporary rise in water levels resulting in inundation of areas not normally covered by water. May be expressed in terms of probability of exceedance per year such as 1-percent

chance flood or expressed as a fraction of the probable maximum flood or other reference flood.

Flood plain. Nearly level land, susceptible to floods, that forms the bottom of a valley. An area, adjoining a body of water or natural stream, that has been or may be covered by floodwater.

Flow. Volume of water that passes a given point within a given period of time.

Flow augmentation. The release of water stored in a reservoir or other impoundment to increase the natural flow of a stream.

Foundation. Lower part of a structure that transmits loads directly to the soil. The excavated surface upon which a dam is placed.

Full pool. Volume of water in a reservoir at normal water surface. The reservoir level that would be attained when the reservoir is fully utilized for all project purposes, including flood control.

Gaging station. A particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Gauge (gage). Device for registering water level, discharge, velocity, pressure, etc. Thickness of wire or sheet metal. A number that defines the thickness of the sheet used to make steel pipe. The larger the number, the thinner the pipe wall.

Ground water. Water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper level of the saturated zone is called the water table. Water stored underground in rock crevices and in the pores of geologic materials that make up the earth's crust. That part of the subsurface water which is in the zone of saturation; phreatic water. Water found underground in porous rock strata and soils, as in a spring. Water under ground, such as in wells, springs and aquifers. Generally, all subsurface water as distinct from surface water; specifically, that part of the subsurface water in the saturated zone where the water is under pressure greater than atmospheric.

Ground water table. The upper boundary of ground water where water pressure is equal to atmospheric pressure, i.e., water level in a bore hole after equilibrium when ground water can freely enter the hole from the sides and bottom.

Habitat. The area or type of environment in which a plant or animal normally lives or occurs.

Hydroelectric plant. Electric powerplant using falling water as its motive force. A power plant that produces electricity from the power of rushing water turning turbine-generators.

Hydroelectric power. Electrical energy produced by flowing water.

Hydrologic unit code. An eight-digit number used to identify a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature.

Hydrology. Scientific study of water in nature: its properties, distribution, and behavior. The science that treats the occurrence, circulation properties, and distribution of the waters of the earth and their reaction to the environment. Science dealing with the properties, distribution and flow of water on or in the earth.

Impoundment. Body of water created by a dam.

Improvement. Structural measures for the betterment, modernization, or enhancement of an existing facility or system to improve the social, economic, and environmental benefits of the project.

Inflow. Water that flows into a body of water. The amount of water entering a reservoir expressed in AF per day or cfs.

Inlet channel (inlet structure). Concrete lined portion of spillway between approach channel and gate or crest structure.

Instream flow requirements. Amount of water flowing through a defined stream channel needed to sustain instream values, e.g. flows designated for fish and wildlife.

Instream uses. Water uses that can be carried out without removing the water from its source, as in navigation and recreation.

Inundate. To cover with impounded waters or floodwaters.

Irrigation. Act of supplying dry land with water in order to grow crops or other plants. Application of water to lands for agricultural purposes.

Irrigation district. A cooperative, self-governing public corporation set up as a subdivision of the State government, with definite geographic boundaries, organized and having taxing power to obtain and distribute water for irrigation of lands within the district; created under the authority of a State legislature with the consent of a designated fraction of the landowners or citizens.

Juvenile. Young fish older than 1 year but not capable of reproduction.

Levee. A natural or man-made barrier that helps keep rivers from overflowing their banks.

Mainstream (mainstem). The main course of a stream where the current is the strongest.

Maintenance. All routine and extraordinary work necessary to keep the facilities in good repair and reliable working order to fulfill the intended designed project purposes. Maintaining structures and equipment in intended operating condition, equipment repair, and minor structure repair.

Maximum water surface (maximum pool). The highest acceptable water surface elevation with all factors affecting the safety of the structure considered. It is the highest water surface elevation resulting from a computed routing of the inflow design flood through the reservoir under established operating criteria. This surface elevation is also the top of the surcharge capacity.

Minimum flow. Negotiated lowest flow in a regulated stream that will sustain an aquatic population of agreed-upon levels. Flow may vary seasonally. Lowest flow in a specified period of time. Possibly define as minimum instream flow.

Mitigation (measures). Methods or plans to reduce, offset, or eliminate adverse project impacts. Action taken to avoid, reduce the severity of, or eliminate an adverse impact. Mitigation can include one or more of the following:

Avoiding impacts.

Minimizing impacts by limiting the degree or magnitude of an action.

Rectifying impacts by restoration, rehabilitation, or repair of the affected environment.

Reducing or eliminating impacts over time.

Compensating for the impact by replacing or providing substitute resources or environments to offset the loss.

Modeling. Use of mathematical equations to simulate and predict real events and processes.

Multiple use. Use of water or land for more than one purpose.

National Environmental Policy Act (NEPA). An act requiring analysis, public comment, and reporting for environmental impacts of Federal actions.

Outlet. An opening through which water can be freely discharged from a reservoir to the river for a particular purpose.

Outlet Works. A combination of structures and equipment required for the safe operation and control of water released from a reservoir to serve various purposes, i.e., regulate stream flow and quality; release floodwater; and provide irrigation, municipal, and/or industrial water. Included in the outlet works are the intake structure, conduit, control house-gates, regulating gate or valve, gate chamber, and stilling basin. A series of components located in a dam through which normal releases from the reservoir are made. A device to provide controlled releases from a reservoir. A pipe that lets water out of a reservoir, mainly to supply downstream demands.

Precipitation. The total measurable amount of water received in the form of snow, rain, drizzle, hail, and sleet. The process by which atmospheric moisture falls onto a land or water surface as rain, snow, hail, or other forms of moisture.

Project. A single financial entity which can be composed of several units or divisions, integrated projects, or participating projects.

Pumping plant. Facility that lifts water up and over hills.

Reach. Any specified length of stream, channel, or other water conveyance. A portion of a stream or a river. The area of a canal or lateral between check structures. Sometimes also used to describe a contiguous stretch of river.

Recreational benefit. Value of recreational activity to the recreationist, usually measured in dollars above the cost of participating in the recreational activity (travel, entrance fees, etc). Used for valuing recreational resources produced through Federal projects, synonymous with the consumer surplus associated with the recreational activity.

Release. The amount of water released after use. The difference between delivery and release is usually the same as consumptive use.

Reservoir. A body of water impounded by a dam and in which water can be stored. Artificially impounded body of water. Any natural or artificial holding area used to store, regulate, or control water. Body of water, such as a natural or constructed lake, in which water is collected and stored for use. Dam design and reservoir operation utilize reservoir capacity and water surface elevation data. To ensure uniformity in the establishment, use, and publication of these data, the following standard definitions of water surface elevations shall be used.

Reservoir capacity. The capacity of the reservoir, usually in AF. Dam design and reservoir operation utilize reservoir capacity and water surface elevation data. To ensure uniformity in the establishment, use, and publication of these data, the following standard definitions of reservoir capacities shall be used. Reservoir capacity as used here is exclusive of bank storage capacity.

Reservoir inflow. The amount of water entering a reservoir expressed in AF per day or cfs.

Reservoir regulation (or operating) procedure. Operating procedures that govern reservoir storage and releases.

Reservoir surface area. The area covered by a reservoir when filled to a specified level.

Return flow. Drainage water from irrigated farmlands that re-enters the water system to be used further downstream. May contain dissolved salts or other materials that have been leached out of the upper layers of the soil. That portion of the water previously diverted from a stream which finds its way back to that stream or to another body of ground or surface water. The water that reaches a ground or surface water source after release from the point of use and thus becomes available for further use.

Riparian. Living on or adjacent to a water supply such as a riverbank, lake, or pond. Of, on, or pertaining to the bank of a river, pond, or lake.

Run. Seasonal upstream migration of anadromous fish. One or more lengths of pipe that continue in a straight line.

Runoff. The portion of precipitation, snow melt, or irrigation that flows over the soil, eventually making its way to surface water supplies. Liquid water that travels over the surface of the Earth, moving downward due to the law of gravity; runoff is one way in which water that falls as precipitation returns to the ocean.

Rural area. Predominantly agricultural, prairie, forest, range, or undeveloped land where the population is small.

Sediment. Any finely divided organic and/or mineral matter deposited by air or water in nonturbulent areas. Unconsolidated solid material that comes from weathering of rock and is carried by, suspended in, or deposited by water or wind.

Sensitive species. Species not yet officially listed but undergoing status review for listing on the USFWS official threatened and endangered list; species whose populations are small and widely dispersed or restricted to a few localities; and species whose numbers are declining so rapidly that official listing may be necessary. Redefine to match definition in table.

Spawn. To lay eggs, refers mostly to fish.

Spawning beds. Places in which eggs of aquatic animals lodge or are placed during or after fertilization.

Storage. The retention of water or delay of runoff either by planned operation, as in a reservoir, or by temporary filling of overflow areas, as in the progression of a flood wave through a natural stream channel.

Stream. Natural water course containing water at least part of the year. The type of runoff where water flows in a channel.

Streamflow. Discharge that occurs in a natural channel.

Surface water. Water on the surface of the earth. An open body of water, such as a river, stream or lake. All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors which are directly influenced by surface water.

Threatened. A legal classification for a species which is likely to become endangered within the foreseeable future.

Threatened species. Any species which has potential of becoming endangered in the near future.

Tributary. River or stream flowing into a larger river or stream.

Tunnel. Covered portion of spillway between the gate or crest structure and the terminal structure, where open channel flow and/or pressure flow conditions may exist. Portion of an outlet works between upstream and downstream portals, excluding the gate chamber. Tunnels are generally located in the dam abutments, and are concrete lined or concrete/steel lined. An enclosed channel that is constructed by excavating through natural ground. A tunnel can convey water or house conduits or pipes. A long underground excavation with two or more openings to the surface, usually having a uniform cross section used for access, conveying flows, etc.

Uncertainty. Describes situations where potential outcomes cannot be estimated based on historical events.

Urban area. Predominantly cities, towns or developed areas where the population is significant.

Urbanization. To become urban in nature or character; residential, commercial, and industrial development.

Water demand. Water requirements for a particular purpose, as for irrigation, power, municipal supply, plant transpiration or storage.

Water user. Any individual, district, association, government agency, or other entity that uses water supplied from a Reclamation project.

Watershed (drainage area). Surface drainage area above a specified point on a stream. Area which drains into or past a point. A geographical portion of the Earth's surface from which water drains or runs off to a single place like a river. The area of land that drains its water into a stream or river. All the land and water within the confines of a certain drainage area. Vertically, it extends from the top of the vegetation to the underlying rock layers that confine water movement. An area of land that contributes runoff to one specific delivery point.

Watershed divide. The divide or boundary between catchment areas (or drainage areas).

Wetlands. Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mudflats, and natural ponds. An area characterized by periodic inundation or saturation, hydric soils, and vegetation adapted for life in saturated soil conditions. Any number of tidal and nontidal areas characterized by saturated or nearly saturated soils most of the year that form an interface between terrestrial and aquatic environments; including freshwater marshes around ponds and channels, and brackish and salt marshes. A jurisdictional wetland is subject to regulation under the CWA. A nonjurisdictional is subject to consideration under the Fish and Wildlife Coordination Act.

Wild and Scenic Rivers Act (Public Law 90-542). The Wild and Scenic Rivers Act selects certain rivers possessing remarkable scenic, recreational, geologic, fish and wildlife, historic, or other similar values, for preservation in free-flowing conditions. Those selected under recreational criteria may have undergone some diversion or impoundment in the past. Selected rivers and streams have been placed into the National Rivers Inventory by Acts of Congress; others are proposed for inclusion into the system.

Wilderness. Tract or region of land uncultivated and uninhabited by human beings, or unoccupied by human settlements.

Wilderness resource. Resources identified in officially designated wilderness areas on Forest Service or BLM administered land.

Withdrawal. Water removed from the ground or diverted from a surface-water source for use. The process of taking water from a source and conveying it to a place for a particular type of use.

Yield. The quantity of water that can be collected for a given use from surface or ground water sources.