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Acronyms

1944 Treaty	1944 Treaty between the United States and Mexico relating to the utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande (February 3, 1944)	Basin States	Colorado River Basin States
602(a) storage	Section 602(a) of the CRBPA	BBAMP	Boulder Basin Adoptive Management Plan
°C	degrees Celsius	BCP	Boulder Canyon Project
°F	degrees Fahrenheit	BCPA	Boulder Canyon Project Act of 1928
µg/L	microgram per liter	BHBF	beach/habitat-building flow
µg/m³	microgram per cubic meter	BIA	Bureau of Indian Affairs
§	chapter	BLM	Bureau of Land Management
§§	section	BMI	Basic Management, Inc.
AAC	All-American Canal	BO	Biological Opinion
AAQS	Ambient Air Quality Standards	CA PLAN	California's Colorado River Water Use Plan
ACHP	Advisory Council on Historic Preservation	CAP	Central Arizona Project
af	acre-feet	CAWCD	Central Arizona Water Conservation District
afy	acre-feet per year	CEQ	Council on Environmental Quality
AGC	Automatic Generation Control	C.F.R.	Code of Federal Regulations
AMP	Adaptive Management Program	cfs	cubic feet per second
AMWG	Adaptive Management Work Group	Commission	Upper Colorado River Commission
AOP	Annual Operating Plan for Colorado River Reservoirs	Compact	Colorado River Compact of 1992
APE	area of potential effect	Consolidated Decree	Entered by the United States Supreme Court on March 27, 2006 in the case of <i>Arizona v. California</i>
ARPA	Archaeological Resources Protection Act	Council	Advisory Council on Historic Preservation
AWBA	Arizona Water Banking Authority	Court	United States Supreme Court
AWSA	Arizona Water Settlement Act	Cr(VI)	hexavalent chromium
BA	Biological Assessment	CRBPA	Colorado River Basin Project Act of 1968
Basin Fund	Upper Colorado River Basin Fund	CRIR	Colorado River Indian Reservation

Acronyms

CRIT	Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California	FEIS	Final Environmental Impact Statement
CRSP	Colorado River Storage Project	FONSI	Finding of No Significant Impact
CRSPA	Colorado River Storage Project Act of 1956	Forum	Colorado River Basin Salinity Control Forum
CRSS	Colorado River Simulation System	FWS	United States Fish and Wildlife Service
CVWD	Coachella Valley Water District	GCDAMP	Glen Canyon Dam Adoptive Management Program
CWA	Clean Water Act	GCNRA	Glen Canyon National Recreation Area
CWC	Clean Water Coalition	GEMSS	Generalized Environmental Modeling System for Surface Waters
Dam Fund	Colorado River Dam Fund	GWh	gigawatt-hour
DBP	disinfection by-product	HRR	Hualapai River Runners
Decree	The 1964 United States Supreme Court Decree in the case of <i>Arizona v. California</i>	HVID	Harquahala Valley Irrigation District
Department	Department of the Interior	IBWC	International Boundary and Water Commission
Development Fund	Lower Colorado River Basin Development Fund	ICS	Intentionally Created Surplus
DO	dissolved oxygen	ICUA	Intentionally Created Unused Apportionment
Draft EIS	Draft Environmental Impact Statement	IID	Imperial Irrigation District
DTSC	California Environmental Protection Agency Department of Toxic Substances Control	Indian	American Indian
EA	Environmental Assessment	IPS	Intake Pumping Station
EIR	Environmental Impact Report	ISG	Interim Surplus Guidelines
EIS	Environmental Impact Statement	ISM	Indexed Sequential Method
EOM	end-of-month	ITA	Indian Trust Asset
ESA	Endangered Species Act of 1973, as amended	kaf	thousand acre-feet
Exec. Order	Executive Order	kafy	thousand acre-feet per year
Fed. Reg.	Federal Register	kW	kilowatt
		kWh	kilowatt-hour

Acronyms

LCR MSCP	Lower Colorado River Multi-Species Conservation Program	NERC	North American Electric Reliability Council
LMNRA	Lake Mead National Recreation Area	NGO	non-governmental organization
Lower Basin	Colorado River Lower Basin – Arizona, California, Nevada, New Mexico, and Utah, within and from which waters drain naturally into the Colorado River system below Lee Ferry Compact Point	NGS	Navajo Generating Station
Lower Division States	Arizona, California, and Nevada	NHPA	National Historic Preservation Act of 1966, as amended
LROC	Long-Range Operating Criteria	NIA	Non-Indian Agriculture
M&I	municipal and industrial	NIB	Northerly International Boundary
maf	million acre-feet	NNAD	Navajo Nation Archaeological Department
maf_y	million acre-feet per year	NOA	Notice of Availability
Mexico	United Mexican States	NOI	Notice of Intent
mg/L	milligram per liter	NPS	National Park Service
msl	mean sea level	NRA	National Recreation Area
MW	megawatt	NRHP	National Register of Historic Places
MWD	Metropolitan Water District of Southern California	NRI	Nationwide Rivers Inventory
MWh	megawatt-hour	NWPCC	Northwest Power and Conservation Council
NAAQS	National Ambient Air Quality Standards	NWR	National Wildlife Refuge
NAGPRA	Native American Graves Protection and Repatriation Act of 1990	O&M	operation and maintenance
NASS	National Agricultural Statistics Service	P-DP	Parker/Davis Project
NAU	Northern Arizona University	P.L.	Public Law
NDEP	Nevada Division of Environmental Protection	PG&E	Pacific Gas and Electric
NDOW	Nevada Department of Wildlife	PM	particulate matter
NEPA	National Environmental Policy Act of 1969, as amended	PM_{2.5}	particulate matter less than 2.5 micrograms per cubic meter
		PM₁₀	particulate matter less than 10 micrograms per cubic meter
		ppb	parts per billion

Acronyms

ppm	parts per million	SNWA	Southern Nevada Water Authority
PPR	present perfected rights	SRA	State Recreation Area
PSD	Prevention of Significant Deterioration	SRP	Salt River Project
pt.	part	TCP	traditional cultural property
PUP	Priority Use Projects	TDS	total dissolved solids
PV 2008\$	Present Value in 2008 dollars	THPO	Tribal Historic Preservation Officer
PVID	Palo Verde Irrigation District	TMDL	Total Maximum Daily Load
Reclamation	Bureau of Reclamation	Upper Basin	Colorado River Upper Basin – Colorado, Utah, Wyoming, Arizona, and New Mexico within and from which waters drain naturally into the Colorado River system below Lee Ferry Compact Point
RM	river mile	Upper Division States	Wyoming, Utah, Colorado, and New Mexico
ROD	Record of Decision	USACE	United States Army Corps of Engineers
SCOP	Systems Conveyance and Operations Plan	U.S.C.	United States Code
SCP	Colorado River Basin Salinity Control Program	USDA	United States Department of Agriculture
SCUBA	Self-Contained Underwater Breathing Apparatus	USEPA	United States Environmental Protection Agency
SDCWA	San Diego County Water Authority	USGS	United States Geological Survey
SDWA	Safe Drinking Water Act of 1974	USIBWC	United States Section of the International Boundary and Water Commission
Secretary	Secretary of the Department of the Interior	USU	Utah State University
Section 7	Section 7 of the Federal Endangered Species Act	Water Control Manual	Water Control Manual for Flood Control, Hoover Dam and Lake Mead, Colorado River, Nevada and Arizona, dated December 1982, published by USACE
Section 10	Section 10 of the Federal Endangered Species Act	WECC	Western Electricity Coordinating Council
SHPO	State Historic Preservation Officer	Western	Western Area Power Administration
SIA	Secretarial Implementation Agreement	WSCC	Western States Coordinating Council
SIB	Southerly International Boundary	ZCRE	Zuni Cultural Resource Enterprise
SIRA	Storage and Interstate Release Agreements		
SLCA/IP	Salt Lake City Area Integrated Projects		

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Glossary

A

acre-foot (af)	Volume of water (43,560 cubic feet) that would cover one acre to a depth of one foot.
active storage	Reservoir capacity that can be used for authorized purposes.
adaptive management	A method for examining alternative strategies for meeting measurable biological goals and objectives, and then if necessary, adjusting future conservation management actions according to what is learned.
affected environment	Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.
algae	Simple plants containing chlorophyll; most live submerged in water.
allocation, allotment	Refers to a distribution of water through which specific persons or legal entities are assigned individual rights to consume pro rata shares of a specific quantity of water under legal entitlements. For example, a specific quantity of Colorado River water is distributed for use within each Lower Division state through an apportionment. Water available for consumptive use in that state is further distributed among water users in that state through the allocation. An allocation does not establish an entitlement; the entitlement is normally established by a written contract with the United States government.
alluvium	Sedimentary material transported and deposited by the action of flowing water.
ambient	Surrounding natural conditions (or environment) in a given place and time.
amphibian	Vertebrate animal that has a life stage in water and a life stage on land (e.g., salamanders, frogs and toads).
annual flow-weighted average concentration	A weighted average of monthly total dissolved solids (TDS) concentrations for a year, where the weight for each month is based on the relative flow for each month.
Annual Operating Plan for Colorado River Reservoirs (AOP)	The AOP describes how Reclamation will manage Colorado River resources over the 12-month period, consistent with the Long-Range Operating Criteria and the <i>Arizona v. California</i> 1964 Supreme Court Decree. The AOP is prepared annually by Reclamation in cooperation with the Basin States, appropriate federal agencies, Indian tribes, state and local agencies and the general public, including governmental interests as required by federal law. As part of the AOP process, the Secretary makes annual determinations regarding the availability of Colorado River water for deliveries to the Lower Division states as described below.
apportionment	Refers to the distribution of water available to each Lower Division state in normal, surplus or shortage years, as set forth, respectively in Articles II (B)(1), II (B)(2) and II (B)(3) or the Decree in the case of <i>Arizona v. California</i> .
appropriative rights	The right to divert a specified quantity of water at a specified point of diversion for reasonable and beneficial uses at a specified place of use for a specified manner of use. Appropriative rights are generally “first-in-time, first-in-right”; that is, one appropriative right has priority over appropriative rights established later.

Glossary

B

backwater	A relatively small, generally shallow area of a river with little or no current.
banked groundwater	Water that has been stored temporarily in a groundwater aquifer. Banked groundwater can be recovered for use at a later time.
base load	Minimum load in a power system over a given period of time.
Basin States	The seven states referred to in the Compact as making up the Colorado River watershed; Wyoming, Colorado, Utah, Nevada, Arizona, New Mexico and California.
Biological Assessment (BA)	To facilitate compliance with Section 7(a)(2), federal agencies must prepare a BA, pursuant to Section 7(c)(1) that identifies the likely effects of the proposed federal action on threatened and endangered species.
Biological Opinion (BO)	Document stating the United States Fish and Wildlife Service and/or the National Marine Fisheries Service opinion as to whether a federal action is likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction or adverse modification of critical habitat.

C

candidate species	Plant or animal species not yet officially listed as threatened or endangered under the ESA, but which is undergoing status review by the United States Fish and Wildlife Service.
catch	At a recreational fishery, refers to the number of fish captured, whether they are kept or released.
channel (watercourse)	An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water. River, creek, run, branch, and tributary are some of the terms used to describe natural channels. Natural channels may be single or braided. Canal and floodway are some of the terms used to describe artificial channels.
<i>Cladophora</i>	Filamentous green alga important to the food chain in the Colorado River below Glen Canyon Dam.
Colorado River Basin	All of the drainage area of the Colorado River system, with a total area of approximately 250,000 square miles. The Colorado River is approximately 1,400 miles in length.
Colorado River Basin Project Act of 1968	This Act authorized construction of a number of water development projects, including the Central Arizona Project (CAP) and required the Secretary to develop the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (LROC).
Colorado River Basin Salinity Control Forum	The organization dedicated to controlling Colorado River salinity consisting of representatives of the seven Basin States.
Colorado River Compact	The agreement concerning the apportionment of the use of the waters of the Colorado River System dated November 24, 1922, executed by Commissioners for the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, approved by Herbert Hoover, representative of the United States of America, and proclaimed effective by the president of the United States of America, June 25, 1929.
Colorado River Simulation System	An operational model of the Colorado River system based on a monthly time step.

Colorado River System	That portion of the Colorado River and its tributaries within the United States of America.
Compact	The Colorado River Compact of 1922.
Compact Point	The reference point designated by the Colorado River compact dividing the Upper and Lower Colorado River basins – Lee Ferry, Arizona.
conservation storage	Storage of water for later release for useful purposes such as municipal water supply, power, or irrigation in contrast with storage capacity used for flood control.
Consolidated Decree	Consolidated Decree entered by the United States Supreme Court in the case of <i>Arizona v. California</i> , 547 U.S. ____ (2006)
consumptive use	The total diversion of water from the main stream of the Colorado River, including water withdrawn from the main stream through underground pumping, less any measured and unmeasured return flows.
Contractors	Those who hold entitlements to Colorado River water are referred to as Contractors. Contractors consist of the federal government, states, Indian tribes, and various public and private entities that are recognized under the Decree, hold a Section 5 Contract with the Secretary, or have a Secretarial Reservation of water.
conveyance loss	Water that is lost in transit from a pipe, canal, conduit, or ditch by leakage or evaporation. If the water is lost due to leakage, it may be considered return flow if it percolates to an aquifer and is available for reuse. If the water evaporates, it is considered consumptive use.
Cooperating Agency	With respect to the NEPA process, an agency having jurisdiction by law or special expertise concerning an aspect of a proposed federal action that is requested by the lead agency to participate in the preparation of an Environmental Impact Statement.
coordinated operation	Generally, the operation of two or more interconnected electrical systems to achieve greater reliability and economy. As applied to hydropower resources, the operation of a group of hydropower plants to obtain optimal power benefits with due consideration for all other uses.
Coordinated Reservoir Management (or Operation)	The existing Law of the River contains provisions that tie releases from Lake Powell to storage conditions in Lake Powell and Lake Mead, including minimum objective releases and equalization of storage between the two reservoirs. The alternatives consider various options designed to better utilize existing reservoir storage during droughts, both to enhance water supplies and to help balance benefits of the reservoir system to the two Colorado River Basins.
covered species	Those species addressed in the LCR MSCP for which conservation measures would be implemented and for which authorization for take is being requested under Section 10 of the ESA.
criteria	Standards used for making a determination.
critical habitat	Specific areas with physical or biological features essential to the conservation of a listed species and which may require special management considerations or protection. These areas have been legally designated via <i>Federal Register</i> notices.
cubic foot per second (cfs)	A measure of water flow equal to one cubic foot of water passing a point on the stream in one second of time.
cultural resource	Building, site, district, structure, or object significant in history, architecture, archeology, culture or science.

Glossary

D

dead storage	Reservoir space from which stored water cannot be evacuated by gravity.
delta	Sediment deposit formed at the mouths of the Colorado River and other rivers where they enter Lake Powell, Lake Mead or the Gulf of California.
depletion	Loss of water from a stream, river, or basin resulting from consumptive use.
deposition	Settlement of material out of the water column and on to the streambed. Occurs when the energy of flowing water is unable to support the load of suspended sediment.
discharge (flow)	Volume of water that passes a given point within a given period of time; expressed in this document in cubic feet per second.
dissolved oxygen (DO)	Amount of free oxygen found in water; perhaps the most commonly employed measurement of water quality. Low DO levels adversely affect fish and other aquatic life. The ideal dissolved oxygen for fish life is between seven and 9 mg/L; most fish cannot survive when DO falls below 3 mg/L.
domestic use	Refers to the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power.
draw down	Lowering of a reservoir's elevation; process of depleting reservoir or groundwater storage.

E

ecosystems	Complex system composed of a community of fauna and flora and that system's chemical and physical environments.
electric power system	Physically connected electric generating, transmission, and distribution facilities operated as a unit under one control.
electrical demand	Energy requirement placed upon a utility's generation at a given instant or averaged over any designated period of time.
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)	The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1544), as amended, under Section 9, provides for the prohibition of "take" of any fish or wildlife species listed as threatened or endangered under the ESA unless specifically authorized by regulation.
energy	Electric capacity generated and/or delivered over time.
entitlement	Refers to an authorization to beneficially consume Colorado River water pursuant to (1) a decreed right, (2) a contract with the United States through the Secretary of the Department of the Interior, or (3) a Secretarial Reservation of water.
epilimnion	<i>See stratification.</i>

F

firm energy or power	Non-interruptible energy and power guaranteed by the supplier to be available at all times except for reasons of uncontrollable forces or "continuity of service" contract provisions.
flood	An overflow or inundation that comes from a river or other body of water, and causes or threatens damage. Any relatively high streamflow overtopping the natural or artificial banks in any reach of a stream. A relatively high flow as measured by either gage height or discharge quantity.
flood control pool	Reservoir volume above the active conservation and joint-use pool that is reserved for flood runoff and then evacuated as soon as possible to keep that space in readiness for the next flood.
flood control release	The release of water from Lake Mead and the operation of Hoover Dam for flood control purposes pursuant to the reservoir operating criteria specified in the February 8, 1984 Field Working Agreement between the USACE and the Bureau of Reclamation, and the USACE regulations contained in 33 C.F.R. pt 208.11.
flow	Volume of water passing a given point per unit of time expressed in cfs.
forage fish	Generally, small fish that reproduce prolifically and are consumed by predators.
forebay	Impoundment immediately above a dam or hydroelectric plant intake structure. The term is applicable to all types of hydroelectric developments (storage, run-of-river, and pumped-storage).
fry	Life stage of fish between the egg and fingerling stages.
Full Domestic Surplus determination	A water supply determination made by the Secretary that governs the amount of water available for consumptive use by the Lower Division states for a specific calendar year. Under a Full Domestic Surplus determination the amount of water available to domestic water users and specifically to MWD, SNWA and domestic users in Arizona is greater than the amount that would be available under a Normal condition determination.
full pool	Volume of water in a reservoir at maximum design elevation.

G

gaging station	Specific location on a stream where systematic observations of hydrologic data are obtained through mechanical or electrical means.
gigawatt-hour (GWh)	One billion watt-hours of electrical energy.

H

headwater	The source and upper part of a stream.
hydroelectric power	Electrical capacity produced by falling water.
hypolimnetic zone	The deep portion of a lake or reservoir volume generally classified as below the level of the thermocline.
hypolimnion	<i>See</i> stratification.

Glossary

I

Important Farmland	As defined by the USDA Natural Resources Conservation Service (formerly the Soil Conservation Service), Important Farmlands include Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance. The categorization of farmland is based upon a soil classification system which accounts for the physical and chemical characteristics of the land and the suitability of the land for producing crops. Important Farmlands are afforded special protection due to their importance to agricultural production.
impoundment	Body of water created by a dam.
incidental take	Incidental take is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (50 C.F.R. pt. 17.22 and 17.32).
Indian Trust Assets (ITAs)	Indian Trust Assets are ‘legal interests’ in ‘assets’ held in ‘trust’ by the federal government for federally recognized Indian tribes or individual Indians.
inflow	Water flowing into a lake or reservoir from a river and/or its tributaries; or water entering a river from tributaries.
Interim Surplus Criteria (ISC)	<i>see</i> "Interim Surplus Guidelines"
Interim Surplus Guidelines (ISG)	Interim Surplus Guidelines were implemented in 2001 to provide structure and certainty to water deliveries in excess of the apportionments of the Lower Basin states. The ISG are due to expire in 2016, and since the Lower Basin shortage guidelines are anticipated to extend through 2025, consideration of an extension of the ISG is one of the elements of the proposed federal action. This element of the alternatives varies from a reduction in surplus deliveries to an extension and modification of the existing surplus guidelines. This element of the alternatives helps establish an operational strategy for the full range of reservoir operations.
irrigated area	The gross farm area upon which water is artificially applied for the production of crops, with no reduction for access roads, canals, or farm buildings.
irrigation	The controlled application of water to arable lands to supply water requirements not satisfied by rainfall.

J-K

juvenile	Young fish older than one year but not having reached reproductive age.
kilowatt-hour (kWh)	One thousand watt-hours of electrical energy.

L

land cover type	A classification system to describe vegetation and other habitat types (e.g., cottonwood willow, honey mesquite type III, marsh, etc.).
Las Vegas Valley	The topographic basin containing the City of Las Vegas, the City of North Las Vegas, the City of Henderson and certain unincorporated townships of Clark County.
Las Vegas Wash	The natural drainage channel for the entire Las Vegas Valley. It is dominated by wastewater flows from the City of Las Vegas, Clark County Sanitation District, and City of Henderson wastewater treatment plants. It terminates in the Las Vegas Bay of Lake Mead.

Law of the River	As applied to the Colorado River, the collective set of compacts, federal laws, court decisions and decrees, contracts, and formally determined and adopted operating criteria (or guidelines) that apportions the water and regulates the use and management of the Colorado River among the seven Basin States and Mexico.
lead agency	A lead agency is an agency initiating and overseeing the preparation of an environmental impact report or EIS. For this project, Reclamation is the lead agency for compliance with NEPA.
Lee Ferry	A reference point marking division between the Upper and Lower Colorado River Basins. The point is located in the mainstream of the Colorado River one mile below the mouth of the Paria River in Arizona.
Lees Ferry	Location of Colorado River ferry crossings (1873 to 1928) and site of the USGS stream gage above the Paria River confluence.
limnology	Scientific study of the physical characteristics and biology of lakes, ponds, and streams.
load	Amount of electrical power or energy delivered or required at a given point.
Lower Basin	Includes those parts of the states of Arizona, California, Nevada, New Mexico and Utah within and from which waters drain naturally into the Colorado River System below Lee Ferry, Arizona.
Lower Division	A division of the Colorado River system that includes the states of Arizona, Nevada and California.
Lower Division states	The states of Arizona, California, and Nevada as defined by Article II of the Colorado River Compact of 1922.

M

magnitude	A number characteristic of a quantity and forming a basis for comparison with similar quantities such as flows. A number representing the intrinsic or apparent brightness of a celestial body on a logarithmic scale in which an increase of one unit corresponds to a reduction in the brightness of light by a factor of 2.512.
mean monthly flow	Average flow for the month, usually expressed in cubic feet per second.
mean sea level (msl)	The average height of the sea surface for all stages of the tide, serving as the reference surface for all altitudes in atmospheric studies.
median	Middle value in a distribution, above and below which lie an equal number of values.
megawatt (MW)	One million watts of electrical power (capacity).
megawatt-hour (MWh)	One million watt-hours of electrical energy.
milligram per liter (mg/L)	Equivalent to one part per million.

Glossary

N

National Environmental Policy Act (NEPA)	Law requiring federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet this requirement, federal agencies prepare a detailed statement known as an Environmental Impact Statement (EIS).
National Register of Historic Places (NRHP)	The nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.
natural flow	The flow of any stream undepleted by the activities of man.
Normal conditions determination	A water supply determination made by the Secretary that governs the amount of water available for consumptive use by the Lower Division states for a specific calendar year. Under a Normal conditions determination consumptive use within the Lower Division states is limited to 7.5 million acre-feet.

O

oligotrophic	A body of water characterized by low dissolved plant nutrient and organic matter, and rich in oxygen at all depths.
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P-Q

peak flow	Maximum instantaneous flow in a specified period of time.
peak load	Maximum electrical demand in a stated period of time.
penstock	Conduit pipe used to convey water under pressure to the turbines of a hydroelectric plant.
percentile	A statistical term. A descriptive measure that splits ranked data into 100 parts, or hundredths. For example, the 10 th percentile is the value that splits the data in such a way that 10 percent of the values are less than or equal to the 10 th percentile.
Piscivorous	Habitually feeding on fish.
PM ₁₀ (PM10)	Particulate matter (dust particles) less than 10 micrograms per cubic meter
power	Electrical capacity generated, transferred or used.
Present Perfected Right (PPR)	With respect to the Colorado River, a water right exercised by the actual diversion of a specific quantity of water, prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.
priority	A ranking with respect to diversion of water relative to other water users.
probability	In this EIS, the relative frequency with which a range of modeled values occurs. For example, the probability of Lake Mead elevation exceeding 1,180 ft msl in June 2005 is equal to the number of modeled elevations greater than 1,180 ft msl in June 2005, divided by the total number of modeled elevations in June 2005.

public involvement Process of obtaining citizen input into each stage of development of planning documents. Required as a major input into any EIS.

R

ramp rate The rate of change in instantaneous output from a powerplant. The ramp range is established to prevent undesirable effects due to rapid changes in loading or, in the case of hydroelectric plants, discharge.

rated head Water depth for which a hydroelectric generator and turbines were designed.

reach A specified segment of a stream, channel, or other water conveyance facility.

recruitment Survival of young plants and animals from birth to a life stage less vulnerable to environmental change.

re-regulating reservoirs A reservoir for reducing diurnal fluctuations resulting from the operation of an upstream reservoir for power production.

reserved water In the case of Indian reservations, rights based on the doctrine of Indian reserved rights, and in the case of federal establishments other than Indian reservations, a federal reservation of water for use on property under Federal jurisdiction.

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

return flow Portion of water previously diverted from a stream and subsequently returned to that stream and is available for consumptive use by others.

return flow credit Water returned to the Colorado River that can be rediverted in the same year. Diverted Colorado River water that is returned to the river in the year in which it was diverted is credited against a water user's total diversions.

riffle A stretch of choppy water caused by an underlying rock shoal or sandbar.

riparian Of, on, or pertaining to the bank of a river, pond, or lake.

river mile (RM) River miles are numbered along the Colorado River from south to north starting with RM 0.0 at the Southerly International Border (SIB) with Mexico. Dam locations are noted at their respective river miles.

river stage Water surface elevation above a datum.

RiverWare™ A commercial river system simulation computer program that was configured to simulate operation of the Colorado River for this EIS.

run-off That part 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.

S

salinity A term used to refer to the dissolved minerals in water, also referred to as total dissolved solids (TDS).

Secretary The Secretary of the Department of the Interior, and duly appointed successors, representatives and others with properly delegated authority.

Glossary

Section 10(a)(1)(B) permit	Section 10(a)(1)(B) of the ESA authorizes the FWS to issue non-federal entities a permit for the incidental take of endangered and threatened wildlife species. This permit allows the non-federal entity to proceed with an activity that is legal in all other respects, but that results in the “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”
sediment	Unconsolidated solid material that comes from weathering of rock and is carried by, suspended in, or deposited by water or wind.
sediment load	Mass of sediment passing through a stream.
seepage	Relatively slow movement of water through a medium, such as sand.
Shortage condition determination	A water supply determination made by the Secretary that governs the amount of water available for consumptive use by the Lower Division states for a specific calendar year. Under a Shortage condition determination consumptive use within the Lower Division states may be limited to an amount less than 7.5 million acre-feet.
Shortage Guidelines	This element is the primary aspect of the proposed federal action. Its purpose is the orderly rationing of water supplies particularly during drought and low reservoir conditions. While Lake Powell and Lake Mead have large amounts of storage, water supply demands are steadily increasing and careful management of existing water supplies will help ensure sufficient supplies are available. The Shortage Guidelines apply to the Lower Basin states and range from aggressive shortages to no reduction of water supplies until the reservoirs are empty. Most of the alternatives have discrete stepped levels of shortage associated with Lake Mead reservoir elevations.
spawn	To lay eggs, especially fish.
spills	Water releases from a dam in excess of powerplant capacity.
spillway	Overflow facility at a dam, usually consisting of a sill at the full-reservoir water surface elevation.
spinning reserves	Available capacity of generating facilities synchronized to the interconnected electric system so that it can be called upon for immediate use in response to system problems or sudden load changes.
stage	Water surface elevation.
Standards	A means established by authority as a rule for the measure of quality, such as cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.
Storage	Water artificially impounded in surface or underground reservoirs, for future use. The term regulation refers to the action of this storage in modifying streamflow. See also Conservation storage, Total storage, Dead storage, and Usable storage. Water naturally detained in a drainage basin, such as ground water, channel storage, and depression storage. The term "drainage basin storage" or simply "basin storage" is sometimes used to refer collectively to the amount of water in natural storage in a drainage basin.
Storage and Delivery of Conserved Water	One mechanism to increase water deliveries during droughts and low reservoir conditions is the conservation and enhancement of existing water supplies. The alternatives consider options for the creation of a system of credits in Lake Mead established through extraordinary conservation, with various limits on the maximum size, storage and delivery of the credit water..

stratification	Thermal layering of water in lakes and streams. Lakes usually have three zones of varying temperature: (1) <i>epilimnion</i> – top layer with essentially uniform warmer temperature; (2) <i>metalimnion</i> – middle layer of rapid temperature decrease with depth; and (3) <i>hypolimnion</i> – bottom layer with essentially uniform colder temperatures.
streamflow	The discharge that occurs in a natural channel. Although the term discharge can be applied to the flow of a canal, the word streamflow uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than runoff, as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.
system storage	The total volume of water available in the Colorado River system at a specific point in time.

T

tail water	Water immediately downstream of the outlet from a dam or hydroelectric powerplant.
take	As defined by the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. §§ 1531[18]).
thermocline	The zone of maximum change in temperature in a water body, separating upper (epilimnetic) from lower (hypolimnetic) zones.
threatened species	A species or subspecies that is likely to become endangered in the foreseeable future.
total dissolved solid (TDS)	A measure of the inorganic or mineral content of water, commonly expressed in milligrams per liter.
traditional cultural property	A site or resource that is eligible for inclusion in the <i>National Register of Historic Places</i> because of its association with cultural practices or beliefs of a living community.
tributary	River or stream flowing into a larger river or stream.
turbidity	Cloudiness of water, measure by how deeply light can penetrate into the water from the surface.

U-V

Upper Basin	Those parts of the States of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters drain naturally into the Colorado River system above Lee Ferry, Arizona.
Upper Colorado River Commission	Commission established by the Upper Colorado River Basin Compact of appointed members from the Upper Division States whose purpose is to secure the storage of water for beneficial consumptive use in the Upper Basin.
Upper Division	A division of the Colorado River system that includes the states of Colorado, New Mexico, Utah and Wyoming.
Upper Division states	The states of Colorado, New Mexico, Utah and Wyoming as defined by Article II of the Colorado River Compact of 1922.

Glossary

W-X

Water Year	That period of twelve months ending September 30 of each year.
Waters of the United States	In accordance with the Clean Water Act, Waters of the United States include: (1) all waters which may be susceptible to use in interstate or foreign commerce; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters; (4) all impoundments of waters otherwise defined as waters of the United States; (5) tributaries of waters identified in this section; (6) the territorial seas; and (7) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in this section.
watershed	The drainage area upstream of a specified point on a stream.

Y-Z

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List of Preparers

This Draft Environmental Impact Statement was prepared by the Bureau of Reclamation, Upper and Lower Colorado Regions. A list of persons who prepared various section, significant background material or participated to a significant degree in preparing the statement is presented below

Alan G.K. Solbert
1950-2006

Alan Solbert of Jones & Stokes, a dear friend and colleague, contributed substantially to the completion of the document. The project team as well as many others will miss Alan's leadership, enthusiasm, and friendship. This effort is dedicated to his memory.

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Name	Education	Qualifications	Experience	Project Role
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Loftin, Sam	A.S., Casper College B.S.E.E. (Electrical Engineering)	CRSP hydro resources, forecasting power purchases	27	Electric Power Generation
Palmer, Clayton	M.A. Economics	Natural resource economics, hydroelectric power economics	22	Electric Power Generation
Young, Brian	B.S., Engineering	Hydropower generation & marketing	22	Electric Power Generation

BROWN AND CALDWELL

Name	Education	Specialty Area	Experience	Project Role
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Biggs, John	B.S., Civil Engineering M.S., Civil Engineering	Odor/Air emissions monitoring & control, Buried infrastructure assessment, water/wastewater treatment.	3	Hydrological Resources
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Miller, David	M.A., English Literature M.S. Irrigation Engineering Ph.D. Agricultural Engineering	Agricultural water management, water resources planning, agricultural water quality	26	Resource Lead - Agricultural
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Plude, Bryan	B.A., Biology M.A., Management and Business M.S., Civil Engineering	Restoration and conservation of ecosystems as well as design, planning, and restoration of wetlands	28	Resource Lead - Visual; Recreation
Reichard, Chris	B.S., Natural Resources	Wetland, riparian and threatened/endangered species assessments, environmental permitting, and ecological mitigation design and planning	8	Resource Lead - Biology

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SAIC

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