



Supporting Materials

GLOSSARY

A

abutment	A structure that supports the ends of a dam or bridge.
accretion	Gradual increase in flow of a stream due to seepage, ground-water discharge, or tributary inflow.
acre-foot	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.
aerate	To supply or charge with gas, usually air.
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.
aggradation	Process of filling and raising the level of a streambed, flood plain, or sandbar by deposition of sediment. The opposite of degradation.
algae	Simple plants containing chlorophyll; most live submerged in water.

allocation, allotment	Refers to a distribution of water through which means 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. The 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.
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 (i.e., 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.
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 <i>Arizona v. California</i> .
arroyo	A gully or channel cut by an ephemeral stream.
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.
baseload plant	Powerplant normally operated to carry base load; consequently, it operates essentially at a constant load.
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.
benthic	Bottom of rivers, lakes, or oceans; organisms that live on the bottom of water bodies.
biological opinion	Document stating the U.S. Fish and Wildlife Service and 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.
bright line	A groundwater term; the interface between surface water and groundwater.
C	
candidate species	Plant or animal species not yet officially listed as threatened or endangered, but which is undergoing status review by the Service.
catch	At a recreational fishery, refers to the number of fish captured, whether they are kept or released. (<i>See harvest.</i>)
channel margin bar	Narrow sand deposits which continuously or discontinuously line the riverbank.

cladophora	Filamentous green alga important to the food chain in the Colorado River below Glen Canyon Dam.
Colorado River Basin	The drainage basin of the Colorado River in the United States.
Colorado River Basin Salinity Control Forum	The organization dedicated to controlling Colorado River salinity consisting of representatives of the seven Basin States
Colorado River Simulation System	An operational model of the Colorado River system based on a monthly timestep.
commercial river trip	Trip organized by a boating company that conducts tours for paying passengers.
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.
Congress	United States Congress
consumptive use	The total water diversions from the Colorado River, less return flows to the river.
Cooperating Agency	With respect to the NEPA process, an agency having jurisdiction by law or special expertise concerning an aspect of a proposed project 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.

Court	United States Supreme Court
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.
CRSSez	A simplified version of CRSS based on a yearly timestep.
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.
D	
dead storage	Reservoir space from which stored water cannot be evacuated by gravity.
Decree	Decree entered in <i>Arizona v. California</i>
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 cfs.
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 nine mg/l; most fish cannot survive when DO falls below 3 mg/l.
drawdown	Lowering of a reservoir's water level; process of depleting reservoir or groundwater storage.
E	
excess flow to Mexico	Flow at NIB in excess of Mexico's scheduled delivery.
ecosystems	Complex system composed of a community of fauna and flora and that system's chemical and physical environments.
eddy	Current of water moving against the main current in a circular pattern.
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.
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 Interior or (3) a Secretarial reservation of water.
epilimnion	<i>See stratification.</i>
euphotic	Of, relating to, or constituting the upper layers of a body of water into which sufficient light penetrates to permit growth of green plants.
eutrophic	A body of water, often shallow, containing high concentrations of dissolved nutrients with periods of oxygen deficiency.
excess capacity	Power generation capacity available on a short-term basis in excess of the firm capacity available through long-term contracts.
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 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.
flow	Volume of water passing a given point per unit of time expressed in cfs. <i>peak flow</i> – Maximum instantaneous flow in a specified period of time. <i>return flow</i> – Portion of water previously diverted from a stream and subsequently returned to that stream or to another body of water.

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.
fuel replacement energy	Electrical energy generated at a hydroelectric plant as a substitute for energy that would have been generated by a thermal electric plant.
full pool	Volume of water in a reservoir at maximum design elevation.
G	
gamete	Mature egg.
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.
herbivore	Animal that feeds on plants.
heterogeneous	Consisting of dissimilar ingredients or constituents.
hydrology	Science dealing with natural runoff and its effect on streamflow.

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 *See stratification.*

I

impoundment Body of water created by a dam.

inflow Water flowing into a lake or reservoir from a river and/or its tributaries; or water entering a river from tributaries.

J-K

jeopardy opinion United States Fish and Wildlife Service or National Marine Fisheries Service opinion that an action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. The opinion includes reasonable and prudent alternatives, if any.

juvenile Young fish older than 1 year but not having reached reproductive age.

L

larval fish An immature stage that develops from the fertilized egg before assuming the characteristics of the adult.

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.
<i>Law of the River</i>	As applied to the Colorado River, a combination of federal and state statutes, interstate compacts, court decisions and decrees, federal contracts, an international treaty with Mexico and formally determined operating criteria.
Lead Agency	The agency initiating and overseeing the preparation of an environmental impact statement.
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 1 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	The part of the Colorado River watershed below Lee Ferry, Arizona; covers parts of Arizona, California, Nevada, New Mexico and Utah.
Lower Division	A division of the Colorado River system that includes the states of Arizona, Nevada and California.

Lower Division states 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 cfs.

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.

mesotrophic The intermediate level of a lake or reservoir trophic state, less productive with respect to algal biomass and nutrient levels than a eutrophic water body, but more productive than an oligotrophic lake or reservoir.

milligram per liter Equivalent to one part per million.

Minute 242 Minute 242, August 30, 1973 of the International Boundary and Water Commission United States and Mexico pursuant to the Mexican Water Treaty. Similar to an amendment.

morphometry A branch of limnology that deals with the morphological measurements of a lake and its basin.

N

no jeopardy opinion United States Fish and Wildlife Service or National Marine Fisheries Service opinion that an action is not likely to jeopardized the; continued existence of a listed species or result in the destruction or adverse modification of critical habitat.

O

off-peak energy Electric energy supplied during periods of relatively low system demand.

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

on-peak energy Electric energy supplied during periods of relatively high system demand.

P-Q

Pacific Institute Pacific Institute for Studies in Development, Environment and Security.

peak load Maximum electrical demand in a stated period of time.

pelagic Of, relating to, or living or occurring in open water.

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 10th 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 10th percentile.

permeability (soil)	Ease with which gasses, liquids, or plant roots penetrate or pass through a layer of soil.
PM_{2.5}	Particulate matter less than 2.5 microns in mean diameter.
PM₁₀	Particulate matter less than 10 microns in mean diameter.
power	Electrical capacity generated, transferred or used.
probability	In this EIS, the relative frequency with which a range of modeled values occurs. For example, the probability of Lake Mead elevation exceeding 1180 ft msl in June 2005 is equal to the number of modeled elevations greater than 1180 ft in June 2005, divided by the total number of modeled elevations in June 2005 (equal to 85 due to 85 traces being modeled).
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.
recruitment	Survival of young plants and animals from birth to a life stage less vulnerable to environmental change.

redd	Depression in river or lake bed dug by fish for the deposition of eggs.
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.
riparian obligate	A species dependent upon riparian habitat.
RiverWare	A commercial river system simulation computer program that was configured to simulate operation of the Colorado River for this EIS.
S	
salinity	A term used to refer to the dissolved minerals in water, also referred to as total dissolved solids.
Secchi disk	Instrument used to determine the depth to which light penetrates lake water. Used as an aid to establish the euphotic zone, which marks that area of a lake where primary productivity (energy production by photosynthesis) occurs.
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.
spawn	To lay eggs, especially fish.
spawning beds	Places in which eggs of aquatic animal's lodge or are placed during or after fertilization.
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.
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.

T

tailwater	Water immediately downstream of the outlet from a dam or hydroelectric powerplant.
thermocline	The zone of maximum change in temperature in a water body, separating upper (epilimnetic) from lower (hypolimnetic) zones.

total dissolved solids (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 *National Register of Historic Places* 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 The part of the Colorado River watershed above Lee Ferry, Arizona; that covers parts of Arizona, Colorado, New Mexico, Utah and Wyoming.

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.

W-X

watershed The drainage area upstream of a specified point on a stream.

Y-Z

young-of-year Small fish hatched from eggs spawned in the current year.