



GLOSSARY

A

Acre-foot: A quantity or volume of water covering 1 acre to a depth of 1 foot (43,560 cubic feet).

Active storage: The amount of storage within a reservoir used for storage and release under normal operating parameters.

Alkaline: Having a pH 7.0 or above.

Arable: Suitable for farming.

Archaic: The Archaic period in the region is typified by a change from a big-game hunting emphasis to the hunting of smaller, modern game and the intensive collection of plant foods. Most sites of this period date between 8000 and 2000 BP (Before Present).

Artifact: A human-made object.

B

Base flow: Groundwater or surface water inflow to a river segment or its tributaries that is derived from natural or artificial storage and is commonly associated with periods of low flow.

Benthic: Bottom- or depth-inhabiting.

Berm: A wall of earth along a dam.

Bioaccumulation: The uptake and retention of nonfood substances by a living organism from its environment, resulting in a build-up of the substances in the organism.

Biodiversity: The variety of life and its processes, and the interrelationships within and among various levels of ecological organization.

Biological assessment: Analysis prepared by or under the direction of a Federal agency for the purpose of identifying potential impacts of a proposed action on endangered or threatened species and their critical habitat. The analysis is provided to the U.S. Fish and Wildlife Service either for information (when it has been concluded that no effect would occur) or with a request for consultation (when a possible effect has been identified).

Biological opinion: Document that states the opinion of the U.S. Fish and Wildlife Service 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 but which is undergoing a status review by the U.S. Fish and Wildlife Service as candidate for possible addition to the list of threatened and endangered species.

Coliform: Organisms common to the intestinal tract of humans and animals; the organisms' presence in waste water is an indicator of pollution.

Colorado pikeminnow: Formerly Colorado squawfish. The Colorado pikeminnow (*Ptychocheilus lucius*) is an endangered fish that is endemic to the Colorado River Basin.

Colorado River Compact: The 1922 Colorado River Compact apportioned the waters between the Upper and Lower Basins. The 1948 Upper Colorado River Basin Compact apportioned the waters between the Upper Basin States.

Colorado Ute Indian Water Rights Final Settlement Agreement, December 10, 1986 (Settlement Agreement): Describes Project-reserved water rights for the two Colorado Ute Tribes and details other benefits to the tribes.

Colorado Ute Indian Water Rights Settlement Act of 1988 (Public Law 100-585) (Settlement Act): Enters into law provisions of the Colorado Ute Indian Water Rights Settlement Agreement of 1986 and mandates the Tribal Development Fund and other provisions of the Settlement Agreement.

Connected actions: As defined by 40 Code of Federal Regulations 1508.25(a)(1), those actions which are interrelated with a proposed Federal action and which should be discussed in the same environmental impact statement.

Cooperating agency: Federal, State, Tribal, and local government agencies that have jurisdiction by law and special expertise with respect to all reasonable alternatives or significant environmental, social, or economic impacts associated with a proposed action that requires National Environmental Policy Act (NEPA) analysis. The Federal agency responsible for the NEPA analysis should determine whether such agencies are interested and appear capable of assuming the responsibilities of becoming a cooperating agency under 40 Code of Federal Regulations 1501.6.

Conservation: Reduction in applied water due to more efficient water use.

Cretaceous: Having the characteristics of chalk; relating to the Mesozoic era system of rocks.

Critical habitat: Defined in Section 3(5)(A) of the Endangered Species Act 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 (a) essential to the conservation of the species and (b) 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 that such areas are essential for the conservation of the species.

Cubic foot per second (cfs): As a rate of streamflow, a cubic foot of water passing a reference section in 1 second of time. A measure of moving volume of water (1 cfs = 0.0283 cubic meter per second).

Cultural resources: Any buildings, sites, districts, structures, or objects significant in history, architecture, archeology, culture, or science.

Cumulative action: As defined in 40 Code of Federal Regulations 1508.25(a)(2), those actions, when viewed with other proposed actions, that have cumulatively significant impacts.

Cumulative impacts: Impacts that occur as a result of cumulative actions.

D

Depletion: To permanently remove water from a system for a specific use.

Dissolved oxygen: Oxygen that exists in water as a result of air/water mixing or aquatic photosynthesis. Sufficient quantities of dissolved oxygen in water are required to support fish and most other aquatic animals.

Diversion: Removing water from its natural course or location, or controlling water in its natural course or location, by means of a ditch, canal flume, reservoir, bypass, pipeline, conduit, well, pump, or other structure or device.

E

Effects/impacts: National Environmental Policy Act Guidelines §1508.8 state:

“Effects” include:

- (a) Direct effects, which are caused by the action and occur at the same time and place.
- (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in these regulations are synonymous. Effects on natural resources (and on the components, structures, and functioning of affected ecosystems), aesthetic, historical, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if, on balance, the agency believes that the effect will be beneficial.
- (c) Significant and potentially significant effects.

Endangered species: A species that is in danger of extinction throughout all or a significant portion of its range.

Endangered Species Act (ESA): Federal law that authorizes and establishes the process for the protection of habitats and populations of species threatened with extinction. The stated purposes of the Federal Endangered Species Act of 1973, as amended, are to provide conservation of the ecosystems upon which endangered and threatened species depend and to establish and implement a program to conserve these species.

Entrainment: Process by which aquatic organisms, suspended in water, are pulled through a pump or other device.

Environment: All biological, chemical, and physical factors to which organisms are exposed.

Environmental impact statement: Detailed public document required by the National Environmental Policy Act for proposed major Federal actions having a significant effect upon the human environment. It is a formal document which must follow the requirements of the National Environmental Policy Act, the Council on Environmental Quality regulations, and directives for the Federal agency responsible for the project proposal.

It focuses on a description of the affected environment and a detailed analysis of the environmental consequences of the proposed action and its alternatives. It is released to the public and other agencies for review and comment. An environmental impact statement is used by the decisionmaking official(s) to make informed decisions concerning implementation of the selected alternative. The decision is documented in a Record of Decision.

Exchange: The release of water to a stream at one location in order to increase diversion at an upstream location, while still meeting downstream demands and bypass flow needs.

F

Fecal coliform: Bacteria formed in the intestinal tracts of animals. Their presence in water or sludge is an indicator of pollution and possible contamination by pathogens.

Federal Register: Periodical published daily (Monday through Friday, except on official holidays) by the Federal National Archives and Records Administration. It provides a uniform system for making available to the public regulations and legal notices issued by Federal agencies.

Fish and Wildlife Coordination Act: The Fish and Wildlife Coordination Act and related acts express the policy of Congress to protect the quality of the environment as it affects the conservation, improvement, and enjoyment of fish and wildlife resources. Under this act, any Federal agency that proposes to control or modify any body of water, or to issue a permit allowing control or modification of a body of water, must first consult with the U.S. Fish and Wildlife Service and State Fish and Game officials.

Floatable flow: The flow rate below which a particular river-related recreation activity would cease.

Flow: Used synonymously with “streamflow.” The volume of water passing a given point per unit of time.

Footprint: An outline of defined boundaries or parameters.

Forbs: Weeds or broad-leafed plants.

G

Gap Analysis: A comparison of the distribution of elements of biodiversity with that of areas managed for their long-term viability to identify elements with inadequate representation.

Groundwater: Water contained beneath the land surface of the earth that can be collected with wells or drainage galleries, or water that flows naturally to the Earth's surface via seeps or springs.

H

Headwater: The source and upper part of a stream; water upstream of a dam.

Hypolimnion: Bottom layer of a lake with essentially uniform colder temperatures.

I

Inflow: Water that flows into a body of water.

Interstate compact: An agreement between two or more States dealing with competing demands for a water resource beyond the legal authority of one State alone to solve. Such agreements require the consent of Congress and the States.

Invertebrate: Animals lacking a spinal column.

Irretrievable commitments of natural resources: Loss of production or use of resources as a result of a decision. It represents opportunities foregone for the period of time that a resource cannot be used.

Irreversible commitments of resources: Decisions affecting renewable resources, such as soils, wetlands, and waterfowl habitat. Such decisions are considered irreversible because their implementation would affect a resource that has deteriorated to the point that renewal can occur only over a long period of time or at great expense or because their use would cause the resource to be destroyed or removed.

L

Lacustrine: Lake and reservoir wetland habitat.

Loam: A soil consisting of a mixture of clay, silt, and sand.

M

Megawatt (MW): One million watts.

Mitigation: National Environmental Policy Act Guidelines §1508.20 states: “Mitigation” includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

As used in cultural resource compliance procedures: Any treatment of historic or prehistoric property that will offset adverse effects that may result from an agency’s action. As used concerning municipal and industrial water: Water delivered to industries and cities for uses, including human consumption, livestock and wildlife, recreation, and tourism development.

N

National Environmental Policy Act (NEPA): Directs Federal agencies to prepare an environmental impact statement for all major Federal actions that may have a significant effect on the human environment. NEPA states that it is the goal of the Federal Government to use all practicable means, consistent with other considerations of national

policy, to protect and enhance the quality of the environment. NEPA requires all Federal agencies to consider the environmental impacts of their proposed actions during the planning and decisionmaking process.

National Pollutant Discharge Elimination System (NPDES): This permit under section 402 of the Clean Water Act (33 USC 1251 et seq.) may be required if water quality is potentially affected by proposed actions or construction of wastewater treatment plants, or other structures.

National Register of Historic Places: A federally maintained register of districts, sites, buildings, structures, architecture, archeology, and culture.

Native American Graves Protection and Repatriation Act (NAGPRA): A Federal law, passed in 1990, that provides a process for museums and Federal agencies to return such Native American cultural items as human remains, funerary objects, sacred objects, and objects of cultural patrimony to lineal descendants, culturally affiliated Indian Tribes, and Native Hawaiian organizations.

Navajo Depletion Guarantee: The Navajo Nation developed a Navajo Depletion Guarantee that would keep the proposed project from exceeding the existing Endangered Species Act (ESA) (baseline and allow the proposed project to use undeveloped water in the existing ESA baseline until developed.

No Action Alternative: Under the National Environmental Policy Act, “no action” represents a projection of current conditions to the most reasonable future responses or conditions that could occur during the life of the project without any action alternatives being implemented. The No Action Alternative should not automatically be considered to be the same as the existing condition of the affected environment since reasonably foreseeable future actions may be taken whether or not any of the project action alternatives are chosen. Differences could result from other water development projects, land use changes, or municipal development. “No action” is therefore often described as “the future without the project.”

Nonpoint source pollution: Manmade or man-induced alteration of the chemical, physical, biological, or radiological integrity of water, originating from any source other than a point source.

Nutrients: Animal, vegetable, or mineral substances which sustain individual organisms and ecosystems.

P

Paleocene: Relating to the oldest series or epoch of the Tertiary period.

pH: Indicator of acidity. This expression of hydrogen ion concentration is typically expressed in a scale from 1 to 14, 1 being the most acidic and 14 being the most basic.

Point source pollution: Any discernible, confined, or discrete conveyance from which pollutants are or may be discharged, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft.

Practically irrigable acreage (PIA): The amount of acreage that can be practicably irrigated in consideration of physical and economic factors. The PIA standard is often used as a measure to help define Indian Tribes' claims to water that might be needed to fulfill the purposes for which their land reservations were set aside by Congress.

R

Reasonable and prudent alternative (RPA): Regulations implementing the Endangered Species Act, section 7, define reasonable and prudent alternatives as alternative actions, identified during formal consultation with the U.S. Fish and Wildlife Service, that (1) can be implemented in a manner consistent with the intended purpose of the action, (2) can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, (3) are economically and technologically feasible, and (4) would, the Service believes, avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat.

Record of Decision (ROD): A written document which states the decision made, describes the environmental factors considered, the preferred plan, and the alternatives considered in the environmental impact statement.

Recreation day: Analogous to user day, which is the participation in a recreation activity at a given resource during a 24-hour period by one person.

Related actions: As defined in 40 Code of Federal Regulations 1508.25(a)(3), those actions that have similarities to a proposed action that provide a basis for evaluation together, such as common timing or geography.

Restoration/re-vegetation: Re-establishing a habitat or plant community in an area that historically supported it.

Riffle: A water habitat characterized by water flowing rapidly over a coarse substrate.

Riparian: Living on or adjacent to a water supply such as a riverbank, lake, or pond.

Riprap: Stones placed on the face of dams, stream banks, or other land surfaces to protect the surface from erosion.

S

Salmonids: The family of fish which includes trout, salmon, and char.

San Juan River Basin Recovery Implementation Program (SJRBRIP): A program required by the 1991 Biological Opinion for the Animas-La Plata Project that has the dual goals of (1) conserving populations of endangered fish species in the San Juan River consistent with recovery under the Endangered Species Act and (2) proceeding with water development in the San Juan River Basin consistent with interstate compacts, court decrees, and Federal trust responsibilities to Indian Tribes. Participants in the program include four U.S. Department of the Interior agencies (the U.S. Fish and Wildlife Service, the Bureau of Reclamation, the Bureau of Indian Affairs, and the Bureau of Land Management), two States (Colorado and New Mexico), four Indian Tribes (the Navajo Nation, the Jicarilla Apache Nation, the Southern Ute Tribe, and the Ute Mountain Ute Tribe), and water development interests in the San Juan River Basin.

Scoping: An early, open process for determining the scope of issues to be addressed and identifying the significant issues related to a proposed action. Scoping meetings are a part of the process.

Section 7 consultation: All Federal agencies are required to consult with the U.S. Fish and Wildlife Service on actions that may affect endangered or threatened species and their designated critical habitat. This consultation requirement is under section 7 of the Endangered Species Act.

Seep: A spot where groundwater oozes slowly to the surface, usually forming a pool.

Selenium: A naturally occurring trace element present in many geological formations in the West. Humans and animals require selenium in small amounts for good health, but concentrations can cause adverse reactions. The irrigation process can cause elevated selenium concentrations.

Shiprock irrigation projects: Fruitland, Hogback, Cudei, and Cambridge.

Siphon: A pipe that conveys water between two sections of a canal by dipping down across a valley or draw.

Special status species: Any species listed or proposed for listing under the Endangered Species Act (ESA). A general term for any species listed or proposed for listing as threatened or endangered under the ESA, a species considered rare, or a species of special concern under State or Tribal protection.

Spillway: A passage for water to run over an obstruction, such as a dam.

Streamflow: The volume of water passing a given point per unit of time.

Substrate: The base on which an organism lives; a substance acted upon.

Sustainability: Refers to the maintenance of a landscape and lifestyle in some agreed-upon form that includes both a space for human economic activity and a space to preserve the ecosystem under natural controls and evolution.

Swale: A wide, shallow ditch, usually grassed or paved.

T

Tailwater: Water below a dam or hydropower development.

Tertiary: Relating to the first period (Cenozoic) system of rocks, marked by the formation of high mountains.

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

Topography: Physical shape of the ground surface.

Total dissolved solids (TDS): Total amount of dissolved material, organic and inorganic, contained in water.

Toxin: Poisonous substance, generally from a plant or animal.

Trace element: A trace element is one that is usually only present in “trace” or barely measurable amounts. When the name was developed, analytical chemistry was in its infancy and incapable of quantifying the amount or concentration of naturally occurring elements in soil or water other than the most common ones such as calcium, magnesium, sodium, potassium, chloride, carbon, and sulfur.

Traditional cultural property (TCP): 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.

Turbidity: The scattering and absorption of light that makes the water look murky. Caused by the content and shape of matter suspended in the water.

U

Upper Basin: Those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River system above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River system that are beneficially served by water diverted from the system above Lee Ferry.

V

Vertebrate: Animal species with a spinal column.

W

Weir: A structure built across an open channel for measuring, diverting, or controlling water flow.

Wetlands: Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mud flats, and natural ponds.

Jurisdictional – Subject to regulation under the Clean Water Act.

Nonjurisdictional – Subject to consideration under the U.S. Fish and Wildlife Coordination Act.

Wetted perimeter: The distance along the bottom and sides of a stream, creek, or channel in contact with the water.

Wild and Scenic Rivers Act (Public Law 90-542): The policy of this 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.

Winters Doctrine: Provides that the establishment of a Indian Reservation impliedly reserves the amount of water necessary for the purposes of the reservation. Upheld by the U.S. Supreme Court.