Glossary

Acre-foot - the volume of water required to cover 1 acre of land (43,560 ft-2) to a depth of 1 foot; this is equivalent to 325,851 gallons.

Adjudication - a process generally delineated along watershed or basin lines which examines the validity of all water rights and claims, and certifies valid claims in a state court.

Allocation - the process of legally encumbering specific amounts of the water resource for application to specific beneficial uses.

Alteration - any activity using mechanized equipment that moves or overturns gravel or earth.

Alluvial plain - a plain resulting from the deposition of alluvium by water. In the southwestern United States most alluvial plains are formed by streams having a considerable grade, and hence are generally referred to as alluvial slopes.

Alluvium - soil material, such as sand, silt and clay that has been deposited on land surface by water.

Anadromous - fish species, such as salmon, that spend most of their adult life in the ocean and migrate to fresh water to spawn.

Available water-holding capacity - the capacity of a soil to hold water in a form available to plants. Amount of moisture held in soil between field capacity, or about one-third atmosphere of tension, and the welting coefficient, or about 15 atmospheres of tension.

Avoided cost - the price utilities are required to pay for electricity generated by qualifying facilities operating under the Public Utilities Regulatory Policies Act (PURPA) of 1978. Avoided cost represents an estimate of the cost of power that the utility would have to generate or buy from another source.

Base flow - in hydrology, a level of streamflow sustained during dry weather by ground water discharging to the stream.

Beneficial use - a set of uses of water which are deemed by law to provide legitimate bases for a water right.

Benthic invertebrates - organisms that typically live on the bottoms of streams and lakes.

Best management practices - The state-of-the-art practices that are efficient and effective, practical, economical, and environmentally sound.

Cfs - cubic feet per second, a unit of measure for the rate of discharge of water. One cubic foot per second is the rate of flow of a stream with a cross section of one square foot which is flowing at a mean velocity of one foot per second. It is equal to 448.8 gallons per minute, or 1.98 acre-foot per day.

Comprehensive State Water Plan - the plan adopted by the Idaho Water Resource Board pursuant to section 43-1734A, Idaho Code, or a component of such plan developed for a particular water resource, waterway or waterways.

Conservation - increasing the efficiency of energy and water use, production, or distribution.

Consumptive use - the amount of water that actually is consumed during its application to beneficial use and is removed from the stream system.

Culinary supply - water meeting all applicable safe drinking water requirements suitable for residential and commercial use.

Cumulative effects - the combined environmental or social impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects. Although each action may seem to have a negligible impact, the combined effects can be severe.

DCMI - Domestic, commercial, municipal and industrial uses.

> **Domestic** - water used for residential household purposes and residential lawn and garden watering. Municipal irrigation of parks and golf courses is included here.
>
> **Commercial** - water used by hotels, motels, restaurants, office buildings, retail sales stores, educational institutions, churches, hospitals, and government and military facilities.
>
> **Municipal** - consists of the sum of "residential" and "commercial" uses within municipal boundaries, which are not usually identified separately in available records of water use.

Industrial - water used to manufacture products. Places of industrial use in the Middle Snake region include meat packing, dairies, cheese factories, other food processing enterprises, gravel washing, and ready-mix concrete operations.

Decoupling - is a general regulatory model in which utility revenues and profits are linked to some measure other than kilowatt-hour sales. The objective of decoupling is the removal of the financial disincentive that utilities face when they cost-effectively save kilowatt-hours. With decoupling, a utility will receive the same base revenues between general rate cases even if it sells fewer kilowatt-hours.

Demand-side management - strategies which seek to change consumer behavior to reduce demand, e.g., offering financial incentives, providing education, or direct installation of efficient technologies.

Dewatering - elimination of water from a lake, river, stream or reservoir.

Diversion - taking water from a stream or other body of water into a canal, pipe, or other conduit. The physical structure for the removal of water from a stream channel.

Electric power system - physically connected electric generating, transmission, and distribution facilities operated as a unit under one control.

Endangered Species Act - Section 7 of this federal statute, (16 U.S.C. §1536), requires that the government take no action which may jeopardize the continued existence of any endangered or threatened species or adversely modify its critical habitat. Where the federal government is involved in a water project (either by building it or issuing a permit or license), the Endangered Species Act may prohibit the government from proceeding if the loss of water will be harmful to such species.

Federal Energy Regulatory Commission (FERC) - established in 1977 (replacing the Federal Power Commission) with the primary responsibility of ensuring the Nation's consumers adequate energy supplies at just and reasonable rates and providing regulatory incentives for increased productivity, efficiency, and competition. Its primary functions are to establish and enforce rates and regulations regarding interstate aspects of the electric, natural gas, and oil industries. It also issues licenses for non-Federal hydroelectric plants and certifies small power production and cogeneration facilities.

Fishery enhancement structures - structures deliberately placed within a waterway, under proper authority, to improve fish habitat.

Highwater line (mark) - the line that separates the aquatic vegetation from terrestrial vegetation.

Hydropower project - any development which uses a flow of water as a source of electrical or mechanical power, or which regulates the flow of water for the purpose of generating electrical or mechanical power. A hydropower project development includes all powerhouses, dams, water conduits, transmission lines, water impoundments, roads, and other appurtenant works and structures.

Independent power producers - non-utility owned electric resources.

Interim protected river - a waterway designated pursuant to pursuant to Section 42-1734D or 42-1734-H, Idaho Code, as protected for up to two (2) years while a component of the Comprehensive State Water Plan is prepared for that waterway.

Irrigation - water used for irrigation of cropland. Residential lawn and garden uses are not included.

Kilowatt (KW) - unit of electric power equal to 1,000 watts, or about 1.34 horsepower.

Lava plain - a broad stretch of nearly level to gently undulating surface underlain by basaltic flows.

Low-head dam - a dam with less than 20 meters (66 ft) of head.

Macrophyte - any large plant that can be seen without the aid of a microscope or magnifying device; an aquatic vascular plant.

Mainstem - the main channel of a river.

Megawatt (MW) - unit of electrical power equal to 1,000,000 watts, or about 1,340 horsepower.

Mill - a monetary cost and billing unit used by utilities; it is equal to 1/1000 of the U.S. dollar (equivalent to 1/10 of one cent)"

Minimum stream (instream) flow - the water that is not diverted and used but rather remains for wildlife habitat, recreation, navigation, and aesthetic beauty.

Natural River - a waterway which possesses outstanding fish and wildlife, recreation, geologic or scenic values, which is free of substantial existing man-made impoundments, dams or other structures, and of which the riparian areas are largely undeveloped, although accessible in places by trails and roads.

NPDES - National Pollutant Discharge Elimination System.

Peak load - the maximum load in a stated period of time. The peaking portion of the load is that portion of the load that occurs for less than 8 hours per day.

Penstock - a conduit used to convey water under pressure to the turbines of a hydroelectric plant.

Placer or dredge mining - any dredge or other operation to recover minerals with the use of a dredge boat or sluice washing plant whether fed by bucket line or separate dragline or any other method. This could include, but is not limited to, suction dredges which are capable of moving more than 2 cubic yards per hour of surficial material.

Preliminary permit - a FERC authorization granting priority right to file a license application and authorizing the permittee to conduct studies and analyses necessary to prepare a complete license application. A preliminary permit does not permit any construction.

Private, Domestic, and Stock - water used from private wells or springs for individual homes, usually in rural areas not accessible to public water supply systems.

Public Utility Regulatory Policies Act of 1978 (PURPA) - federal legislation that, in part, requires utilities to purchase electricity from qualified independent power producers at a price that reflects what the utilities would have to pay for the construction of new generating resources. Portions of the act were designed to encourage the development of small-scale cogeneration and renewable resources.

Public water supply - water supplied to either private or publicly owned community systems which serve at least 15 service connections or 25 individuals at least 60 days per year. Water from public supplies is used for residential, commercial, and industrial purposes, including irrigation of publicly owned areas.

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

Recreational dredge mining - dredge mining in which the nozzle is 5 inches or less, and moves less than 2 cubic yards per hour.

Recreational River - a waterway which possesses outstanding fish and wildlife, recreation, geologic or scenic values, and which might include some man-made development within the waterway or within the riparian area of the waterway.

Relicensing - the administrative proceeding in which FERC, in consultation with other Federal and State agencies, decides whether and on what terms to issue a new license for an existing hydroelectric project at the expiration of the original license.

Riparian - living on or adjacent to a water supply such as a riverbank, lake, or pond; that area within 100 feet of the mean highwater mark of a waterway.

River basin - the total drainage or catchment area of a stream (i.e., the watershed).

River corridor - the area along each side of the river that is being studied.

Riparian vegetation - vegetation that is associated with aquatic (streams, rivers, lakes) habitats.

Secondary systems - pressurized lawn and garden irrigation systems using untreated water for irrigation of lawns, gardens, and publicly owned open areas.

Trust water - refers to Idaho Power water rights subordinated to certain upstream uses as a result of the Swan Falls settlement.

Turbidity - a measure of the extent to which light passing through water is reduced due to suspended materials. Excessive turbidity may interfere with light penetration and minimize photosynthesis, thereby causing a decrease in primary productivity. It may alter water temperature and interfere with essential physiological functions of fish and other aquatic organisms.

Vested rights - those rights that are fixed and not contingent upon any future actions. For example, a protected river designation cannot interfere with vested property rights made prior to the designation.

Water table - the highest part of the soil or underlying rock material that is wholly saturated with water. On some places an upper, or perched water table may be separated from a lower one by a dry zone.

Waterway - a river, stream, creek, lake or spring, or a portion thereof.

Wetlands - lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have the following three attributes: (1) at least periodically, the land supports predominately hydrophytes; (2) the

substrate is predominately undrained hydric soil; and (3) the substrate is on soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

References

B&C Energy Inc., 1992. Revised Application for License - Star Falls Hydroelectric Project - FERC No. 5797, Volumes XVII-XVIII.

Barnum, Doug, 1992. Shoshone District, Bureau of Land Management. Personal communication.

Boggs, Bill, 1992. Outdoor Recreation Planner, Burley District, Bureau of Land Management. Personal communication.

Brockway, C.E., and C.W. Robison, 1992. *Middle Snake River Water Quality Study Phase I: Final Report.* Moscow, ID: University of Idaho Water Resources Research Institute.

Carson, Gary, 1993. Jarbidge Resource Area, Boise District Bureau of Land Management. Personal communication.

Carter, D.L., J.A. Bondurant, and C. W. Robbins, 1971. Water-soluble NO_3 - Nitrogen, PO_4 - Phosphorus, and Total Salt Balances on a Large Irrigation Tract. *Soil Sci. Soc. Amer. Proc.* 35:331-335.

Conservation Monitor, 1992. "Education and Training," April 1992, p. 14.

Cordell, K.H., J.C. Bergstrom, L.A. Hartmann, and D.B.K. English, 1990. *An Analysis of the Outdoor Recreation and Wilderness Situation in the United States 1989-2040.* U. S. Department of Agriculture, Rocky Mountains Forest and Range Experiment Station, General Technical Report RM-189, Fort Collins, CO.

Cordell, Robert, 1992. Bennett Hills Resource Area Manager, Shoshone District Bureau of Land Management. Personal communication.

Don Chapman Consultants, Inc., 1992. Application for License for the Kanaka Rapids Hydroelectric Project (No. 10930), Empire Rapids Hydroelectric Project (No. 10849), and Boulder Rapids Hydroelectric Project (No. 10772).

Duke, Steve, 1992. U.S. Fish and Wildlife Service. Personal communication.

Elmore County, 1992. Draft Elmore County Comprehensive Plan.

FERC [Federal Energy Regulatory Commission], 1990. *Final Environmental Impact Statement - Milner, Twin Falls, Auger Falls and Star Falls Hydroelectric Projects.*

Fuhrman, Roger, 1992. Idaho Power Company. Presentation to Middle Snake Advisory Group, May 21, 1992 at Hagerman, Idaho, and personal communications.

Gillerman, Virginia, 1992. Idaho Geological Survey. Personal communication.

Golus, Ron, 1992. Presentation to Water Planning Coordination Committee, September 28, 1992, at Boise, ID.

Goodell, S.A., 1988. *Water Use on the Snake River Plain, Idaho and Eastern Oregon.* U.S.G.S. Professional Paper 1408-E.

Gooding County, 1985a. *Flood Insurance Study.*

_____, 1985b. *Comprehensive Plan.*

Gore, B., 1992. *Idaho Currents*, September 1992, p. 3. Boise, ID: Idaho Department of Water Resources.

Green, Tom, 1992. State Archaeologist, Idaho State Historical Society. Personal communications.

Heider, Darrell, 1992. Twin Falls County Solid Waste and Parks and Recreation Department. Personal communications.

Hill, Mark, 1991. Don Chapman Consultants, Inc. Presentation for the Middle Snake Study Group, November 26, 1991, at Twin Falls, ID.

Idaho Bureau of Mines and Geology, 1964. *Mineral and Water Resources in Idaho.* Special Report No. 1.

IDFG [Idaho Department of Fish & Game], 1991. Fisheries Management Plan: 1991-1995. Boise, ID.

IDWR [Idaho Department of Water Resources], 1978. *A Program to Promote Irrigation Conservation in Idaho.*

IPC [Idaho Power Company], 1984. Application for License, Milner Project No. 2899-002 Exhibit E.

_____, 1989. *Resource Management Report*, March 1989. Boise, ID.

_____, 1991a. *Resource Management Report: Least Cost Plan.* March 1991. Boise, ID.

_____, 1991b. *Conservation Forecast*, January 1991. Boise, ID.

IPUC [Idaho Public Utilities Commission], 1991. *Annual Report of the Idaho Public Utilities Commission.* Boise, ID.

_____, 1992. Utility Division Report to Legislature.

Idaho Transportation Department and U. S. Department of Transportation, 1988. *Environmental Assessment for Project RS-2709(6) Clear Lakes Grade, Gooding County, Idaho.*

IWRB [Idaho Water Resource Board], 1968. *Idaho Water Resources Inventory.* Moscow, ID.

Jenks, Frank, 1992. Outdoor Recreation Planner, Bruneau Resource Area, Boise District Bureau of Land Management. Personal communication.

Jerome County, 1990. *A Comprehensive Plan for Jerome County.* Jerome, Idaho.

Karl T.R., L.K. Metcalf, M.L. Nicodemus, and R.G. Quayle, 1983. *Statewide Average Climatic History.* Asheville, NC: National Climatic Data Center.

Kestie, Howard, 1992. Area Supervisor, Idaho Department of Lands. Personal communication.

King, Neil, 1992. Manager, Hagerman Fossil Beds National Monument, National Park Service. Personal communication.

Kjelstrom, L.C., 1986. *Flow Characteristics of the Snake River and Water Budget for the Snake River Plain, Idaho and Eastern Oregon.* U.S. Geological Survey Hydrologic Investigations Atlas HA-680.

_____, 1992. *Assessment of Spring Discharge to the Snake River, Milner Dam to King Hill, Idaho.* Open-File Report 92-147.

Klontz, G.W., and J.G. King, 1975. *Aquaculture in Idaho and Nationwide.* Boise, ID: Idaho Department of Water Resources.

Mitchell, J.C., L.L. Johnson, and J.E. Anderson, 1980. *Geothermal Investigations in Idaho Part 9: Potential for Direct Heat Application of Geothermal Resources.* Water Information Bulletin No. 30, June 1980. Boise, ID: Idaho Department of Water Resources.

Moseley, R. and C. Groves, 1992. *Rare, Threatened and Endangered Plants and Animals of Idaho.* Boise, ID: Idaho Department of Fish and Game, Conservation Data Center.

Myers Engineering Company, P.A., 1992a. Application for License for Boulder Rapids Hydroelectric Project. Boise, ID.

_____, 1992b. Application for License for Empire Hydroelectric Project. Boise, ID.

_____, 1992c. Application for License for Kanaka Rapids Hydroelectric Project. Boise, ID.

NEN [*Northwest Energy News*], 1991. "Shorts," November/December 1991, p. 37.

_____, 1992a. "Regional Round-Up," March/April 1992, p. 36.

_____, 1992b. "Breaking with Tradition," January/February 1992, p. 11.

NPPC [Northwest Power Planning Council], 1988. Protected Rivers Designations.

_____, 1991. *1991 Northwest Conservation and Electric Power Plan*. Portland, OR.

Partridge, Fred, 1992. Regional Fisheries Manager, Idaho Department of Fish and Game, Jerome, Idaho. Personal communications.

PNRBC [Pacific Northwest River Basins Commission], 1971. *Columbia-North Pacific Region Comprehensive Framework Study. Appendix IX - Irrigation.*

Power, Thomas, 1988. *The Economic Pursuit of Quality*. Armonk, NY: M.E. Sharpe, Inc.

Ramsey, Jack, 1992. Buhl Economic Development Council. Personal communication.

Ridenhour, Larry, 1992. Outdoor Recreation Planner, Shoshone District, Bureau of Land Management. Personal communications.

Sharp, Marty, 1992. Outdoor Recreation Planner, Shoshone District, Bureau of Land Management. Personal communications.

Smith, Randall, 1992. Wildlife Biologist, Region IV, Idaho Department of Fish and Game. Personal communication.

Stiehl, Gary, 1992. Manager, King Hill Irrigation District. Presentation to Middle Snake Advisory Group, May 21, 1992, at Hagerman, Idaho.

Thomas, Loren, 1992. Shoshone District, Idaho Department of Transportation. Personal communication.

Twin Falls Chamber of Commerce, 1992. Personal communication with Kent Just.

Twin Falls County, 1978. *Comprehensive Plan.*

_____, 1984. *Flood Insurance Study.*

U.S. BLM [Bureau of Land Management], 1986. *Visual Resource Management Inventory and Contrast Rating Manuals - 8400 Series.*

U.S. BLM [Bureau of Land Management], Shoshone District, 1992. Shoshone District Involvement in the Evaluation of the Middle Snake River for Inclusion in the Wild and Scenic Rivers System. Unpublished report.

USBR [U.S. Bureau of Reclamation], 1991. *Hydropower 2002: Reclamation's Energy Initiative.* Technical Document.

U.S. Bureau of Mines, 1991. *Principle Deposits of Industrial Minerals in Idaho; 1991.*

U.S. CoE [Army Corps of Engineers], 1961. *Upper Snake River Basin. Vol II: Land-Water-Flood Factors.* Walla Walla, WA.

USDA, [U.S. Department of Agriculture], 1991. *Aquaculture Situation and Outlook Report.*

USGS [U.S. Geological Survey], 1990. *National Water Summary 1987.*

U.S. SCS [Soil Conservation Service], 1977. *Snake River Basin Idaho and Wyoming Cooperative Study. Irrigation Water Distribution and Use. Upper Snake River Basin - Idaho.* Portland, OR.

Wilton, Neil, 1992. Engineer, Soil Conservation Service, Boise, Idaho. Personal communication.

Wojchik, Bruce, 1992. Metal's Research Corporation, Kimberly, Idaho. Personal communication.

Yankey, Rich, 1992. Soil Conservation Service, Twin Falls. Personal communication.