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“Special Report – Upper Snake River Basin
(Above Powder River) – Irrigation And
Associated Developments,” by the U.S.
Department of the Interior, Bureau of
Reclamation, Regional Office, Boise
(Feb. 1955)

12-55
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UPPER SNAKE RIVER BASIN

(Above Powder River)

RETURN TO
COMMUNICATIONS AND RECORDS SECTION

SPECIAL REPORT

IRRIGATION AND ASSOCIATED DEVELOPMENTS

UNITED STATES
DEPARTMENT OF THE INTERIOR

DOUGLAS MCKAY, *Secretary*

BUREAU OF RECLAMATION

WILBUR A. DEXHEIMER, *Commissioner*

REGION 1

H. T. NELSON, *Regional Director*

Return to Communications and
Records Section

BOISE, IDAHO

FEBRUARY 1955

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS MCKAY, Secretary

BUREAU OF RECLAMATION
WILBUR A. DEXHEIMER, Commissioner

REGION 1
HAROLD T. NELSON, Regional Director

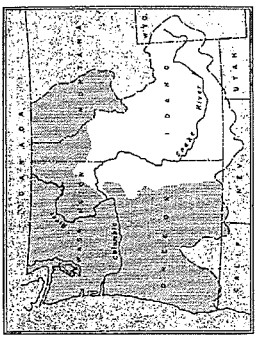
SPECIAL REPORT

UPPER SNAKE RIVER BASIN
(Above Powder River)

IRRIGATION AND ASSOCIATED DEVELOPMENTS

Regional Office
Boise, Idaho
February 1955

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LOCATION MAP

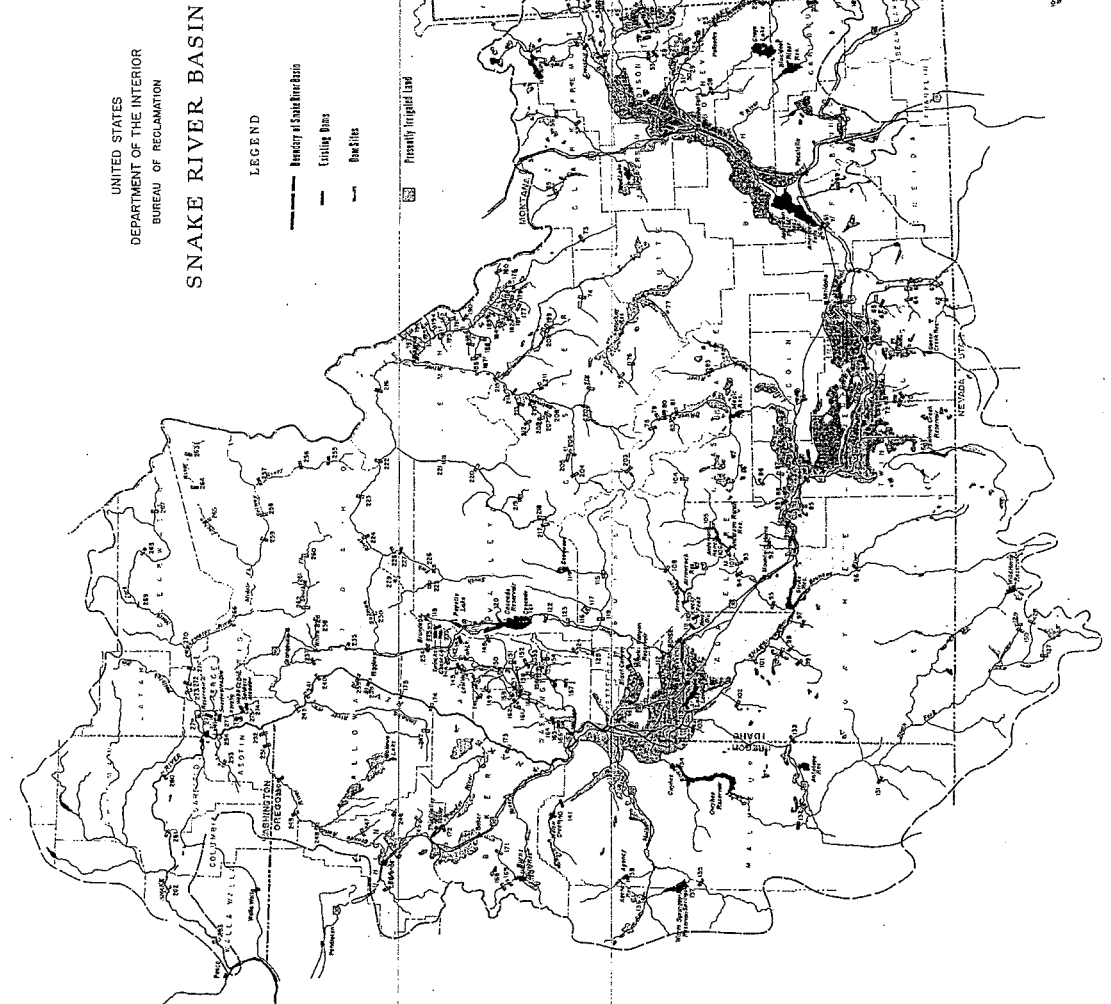


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Main Stem

Palisades Reregulating Reservoir

Reregulation of releases from the Palisades Powerplant would be necessary to allow full use of the powerplant capacity for peaking purposes without undesirable large daily fluctuations in the river below. Uncontrolled fluctuations during the irrigation season impose operation problems at downstream irrigation diversion facilities. In winter rapid rise and fall in the river would promote the formation of ice jams which act as temporary dams to spread water beyond the river banks. This condition would be of particular concern in the Heise-Roberts area where the river slope is quite flat and the surrounding lands are only a few feet above the normal water surface. The Snake River below Palisades is an important stream for fishing and boating, and the elimination of wide daily fluctuations would be essential to full use of this stretch of the river for these purposes.

There are several sites below Palisades that might serve for a reregulation reservoir. From preliminary studies a reservoir of from 65,000 acre-feet to 200,000 acre-feet capacity could be built. This would provide more than ample capacity to control the fluctuations from the Palisades plant under a peaking operation. It would also provide a head of from 100 to 140 feet for the generation of power.

In addition to eliminating undesirable fluctuations, a reregulating reservoir might provide storage which could be used for the same purposes as outlined for the storage reservoir above Palisades.

Storage in Underground Basin, Snake River Plain

The Snake River plain north of the river from Roberts and Camas Creek on the east to Big Wood River on the west, is largely undeveloped. This extensive, fairly level area is underlain by the products of volcanic activity which generally have suitable aquifer characteristics. In scattered locations on this plain, ground-water withdrawals have been successful. In other places inverted drainage wells have given satisfactory service. There are indications of ground-water movements on a fairly large scale.

These and other factors such as the sustained spring flows in Hagerman Valley point to the possibility of using the lavas under this plain as a ground-water storage reservoir which would outlet into the Snake River.

EXTENSION AND CONSERVATION OF BASIN WATER SUPPLIES

Large scale irrigation of new lands or providing supplemental supplies in the upper portion of Snake Basin would depend upon development of a water supply in the river above Milner Dam.

Holdover storage on the main stem and tributaries would be one means. Pumping from ground water in the areas where the ground water is non-tributary to the Snake River above Milner might provide another reliable source of water supply which could be made available to new lands through exchange. The conservation of waters otherwise escaping from the upper basin through the deep ground-water route under the Snake River plain might be accomplished by reducing seepage losses, by substituting closed, controlled pipe systems for municipal and domestic use in lieu of continuous free-flowing streams, and by careful irrigation practices and water-use management on the part of the individual irrigators and districts. Another possibility would be to import water from the Salmon River drainage. Also, water now held for exclusive power purposes could be reassigned to irrigation.

Drainage problems would be greatly reduced and a substantial quantity of water would become available if the conservative use of water which is practiced in areas of short supply were extended to other irrigated areas in the basin which now use the full amount provided under a liberal right.

Storage opportunities are presented under the individual area and project discussions. The importation possibility and the main water saving opportunities are individually presented as follows:

Snake River Water Conservation

Ground water on the south side Twin Falls District, which is the area on the south of the Snake River from Buhl on the west to Hansen on the east, is unsuited as a source of domestic and stock water. Most farm operators and the two largest towns of Buhl and Twin Falls, are dependent on the flow in the irrigation canals for water for these purposes. Piping water from Milner Reservoir, or from Murtaugh Lake, or from Crockett Reservoir (Rock Creek) supplemented by Murtaugh storage are three means to supply the domestic and stock water needs of the area through a closed-pipe system that includes water treatment facilities. To do so would save 152,000 acre-feet annually in Snake River. This saving would be an improvement to the Snake River Main Stem water supply above Milner.

Shutting off all the canals below American Falls, which includes Minidoka, North Side Twin Falls and South Side Twin Falls, during the nonirrigation season, would result in a net saving of about 300,000 acre-feet of water annually. The estimated water savings are based on average recorded winter diversions since 1936, allowing for, (a) the