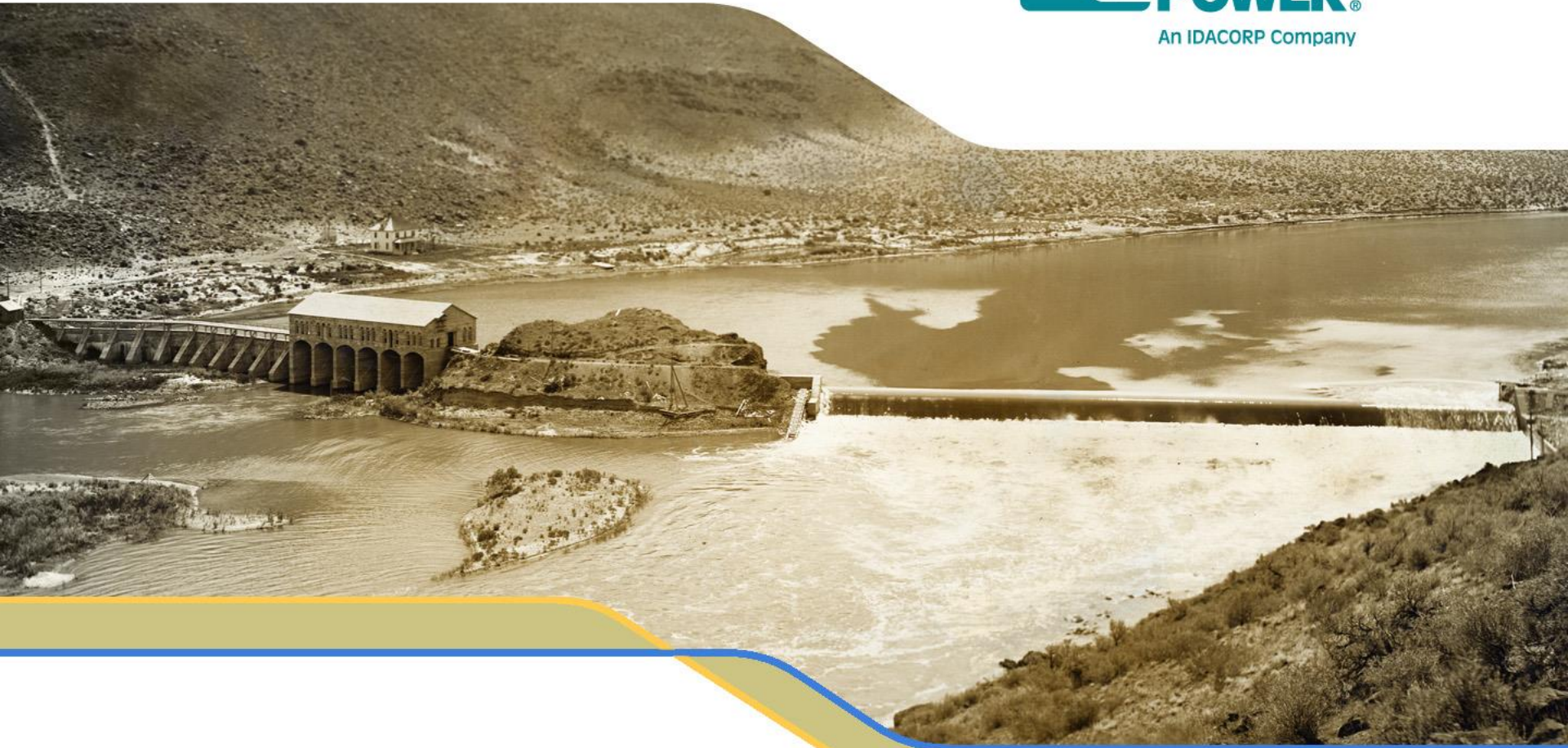




Blocked Basins in the Snake River Basin

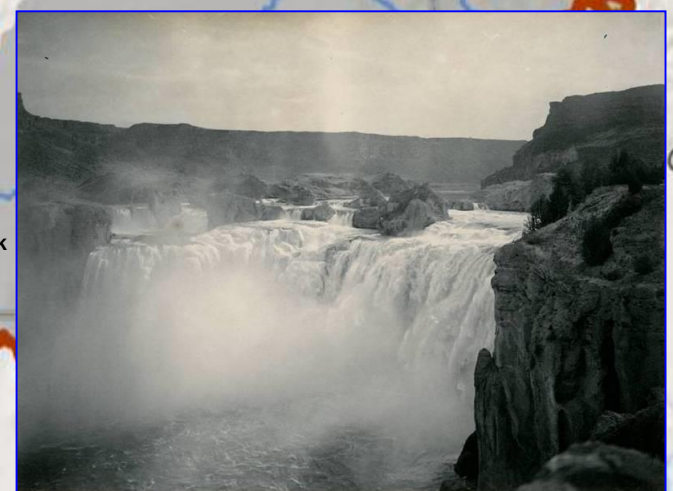
James Chandler
Fish Programs Manager

Some sources of information

Connor, W. P., B. D. Arnsberg, J. A. Chandler, T. D. Cooney, P. A. Groves, J. A. Hesse, G. W. Mendel, D. J. Milks, D. W. Rondorf, S. J. Rosenberger, M. L. Schuck, K. F. Tiffan, R. S. Waples, and W. Young. 2016. A Retrospective (circa 1800–2015) on abundance, spatial distribution, and management of Snake River Basin fall Chinook salmon. Draft 2 Parts I, II, and III. 1. http://www.streamnetlibrary.org/?page_id=1181 (Available May 13, 2016.September 30, 2015).

Chandler, J.A. 2003. Feasibility of reintroduction of anadromous fish above or within the Hells Canyon Complex. Technical Report Appendix E.3.1-2. Chapters 1 through 11. Hells Canyon Complex License Application FERC No. 1971. Idaho Power Company. Boise, Idaho.

Pratt, K.L. 2003. Annotated Bibliographies on the Chronology of Decline of Anadromous Fish in the Snake River Basin above the Hells Canyon Dam. In: Feasibility of reintroduction of anadromous fish above or within the Hells Canyon Complex. Technical Report Appendix E.3.1-2. Hells Canyon Complex License Application FERC No. 1971. Idaho Power Company. Boise, Idaho.







Dworshak Dam

- N.F. Clearwater

MONTANA

Hells Canyon Dam

Mainstem Snake River

- 615 miles
- 476 miles in Idaho
- 368 miles in blocked area

IDAHO

OREGON

OMI

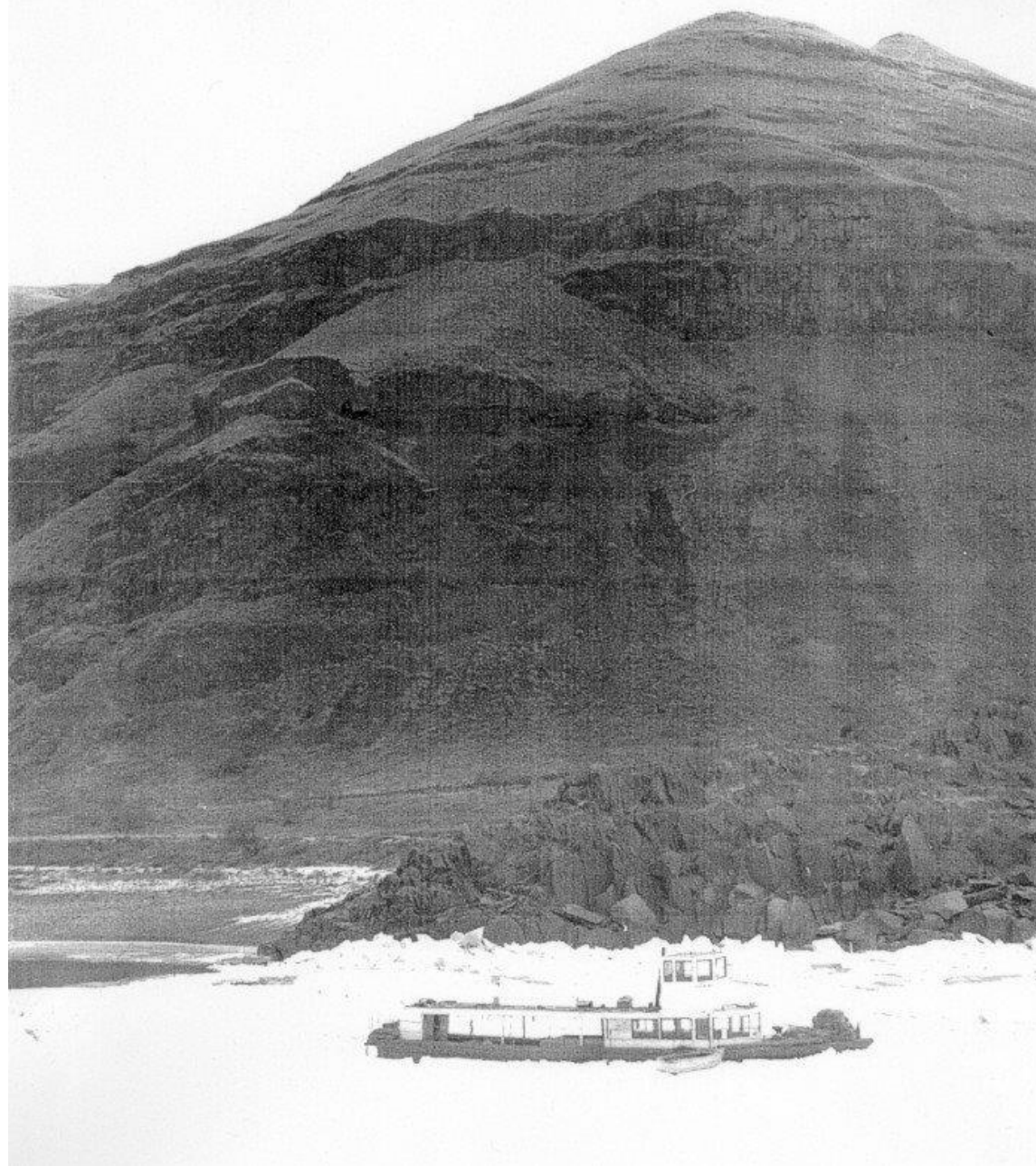
LIFORNIA

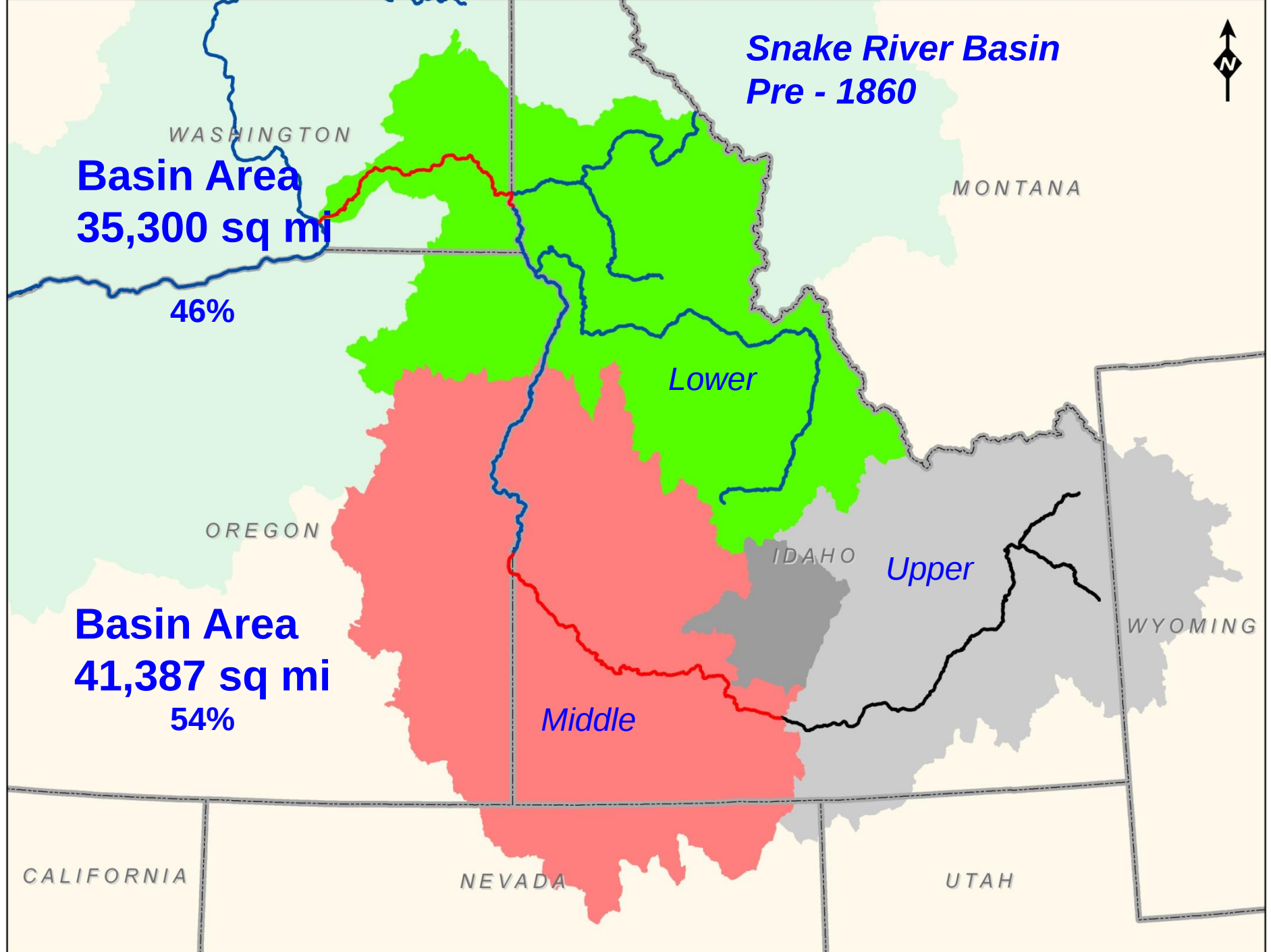
NEVADA

Eastern Snake Plain Aquifer Discharge



Frozen River -
Buffalo Eddy
Snake River





***Snake River Basin
Pre - 1860***



WASHINGTON

**Basin Area
35,300 sq mi**

MONTANA

46%

Lower

OREGON

**Basin Area
41,387 sq mi
54%**

IDAHO

Upper

WYOMING

Middle

CALIFORNIA

NEVADA

UTAH

Westward Expansion



Fur Trade



Commercial Fishing



Gold !

Irrigated Agriculture



Electricity



Railroad



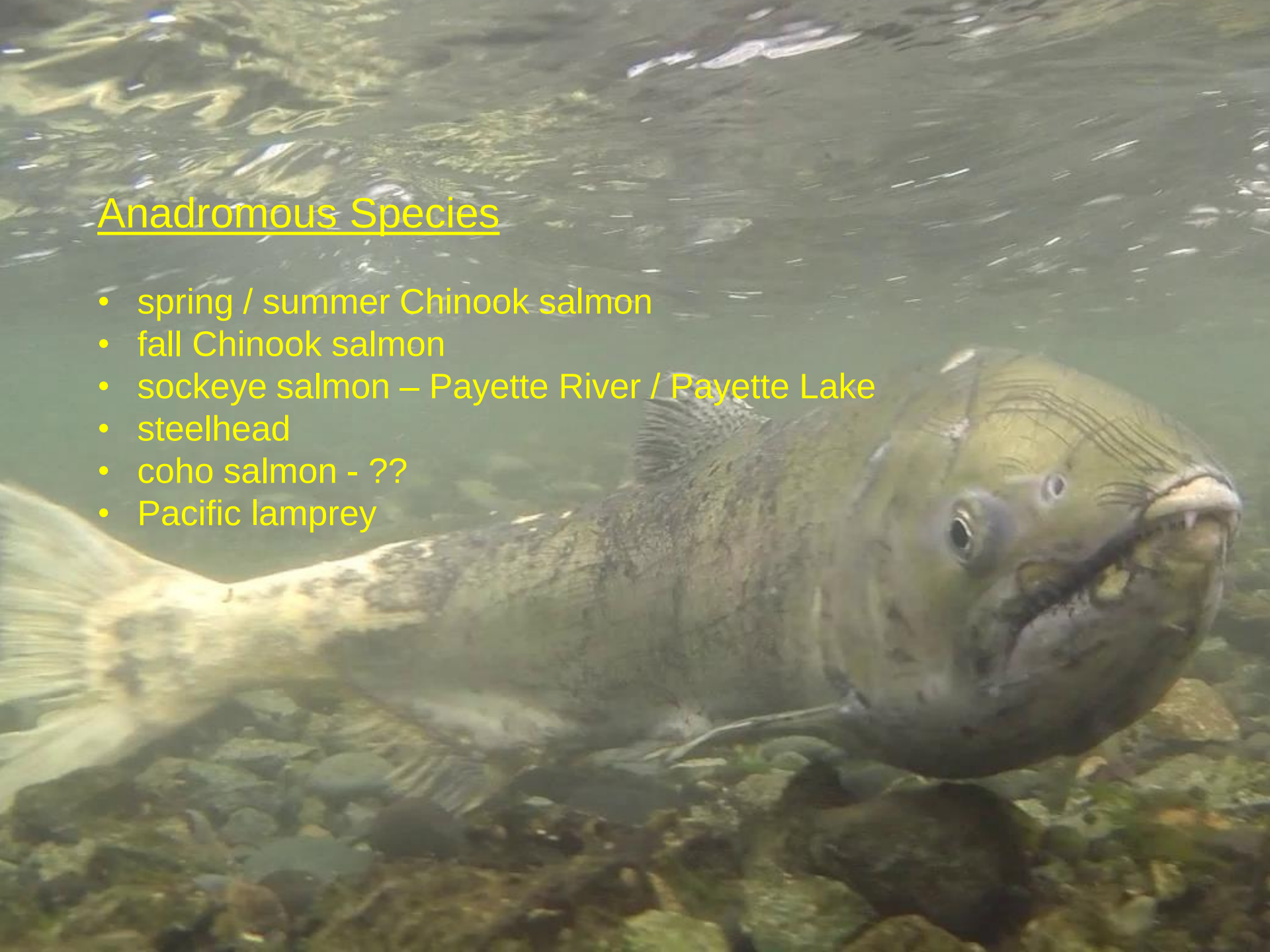
Livestock



Timber

Anadromous Species

- spring / summer Chinook salmon
- fall Chinook salmon
- sockeye salmon – Payette River / Payette Lake
- steelhead
- coho salmon - ??
- Pacific lamprey



Snake River Basin Pre - 1860



WASHINGTON

MONTANA

OREGON

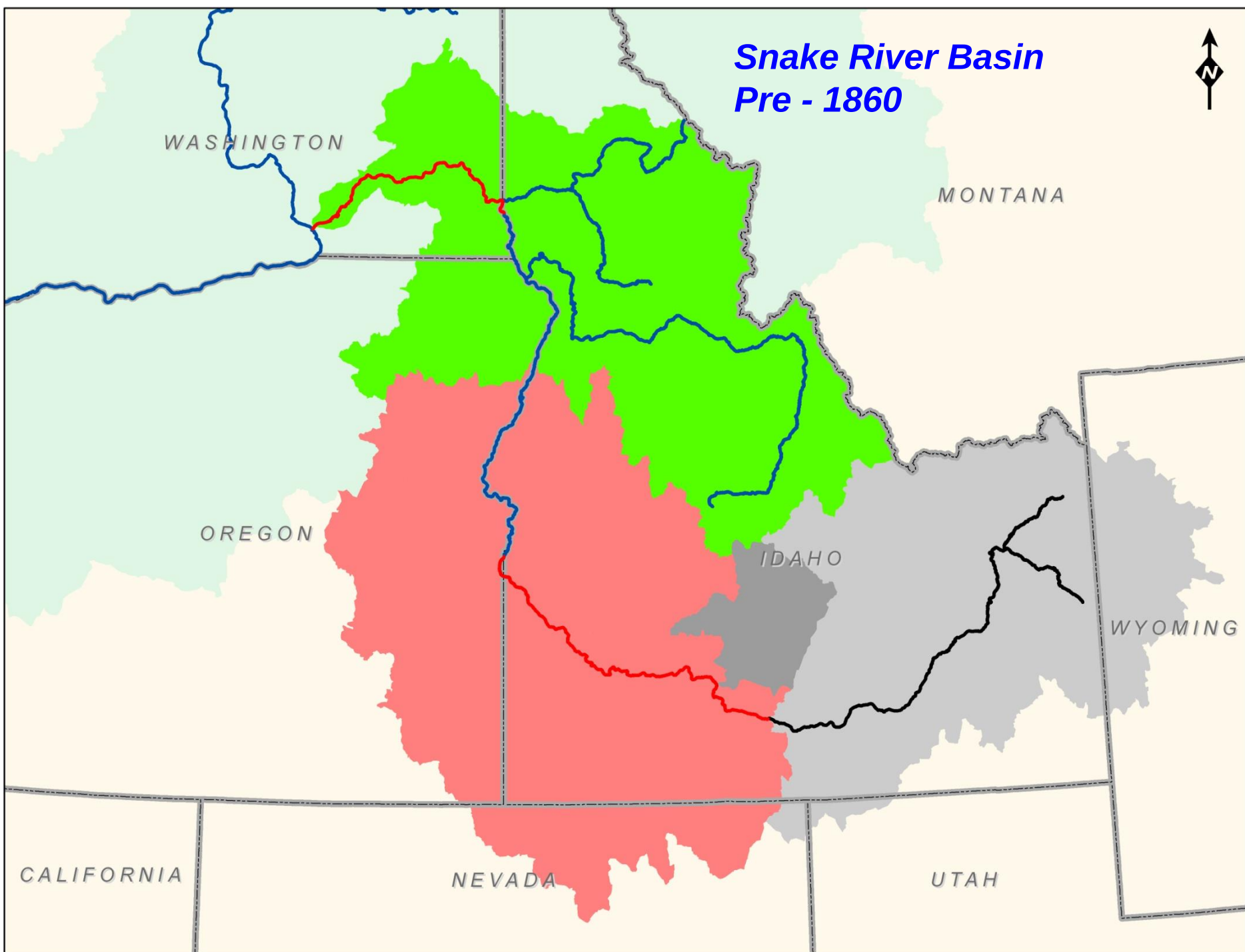
IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH



1890 – Bruneau Dam



WASHINGTON

MONTANA

OREGON

IDAHO

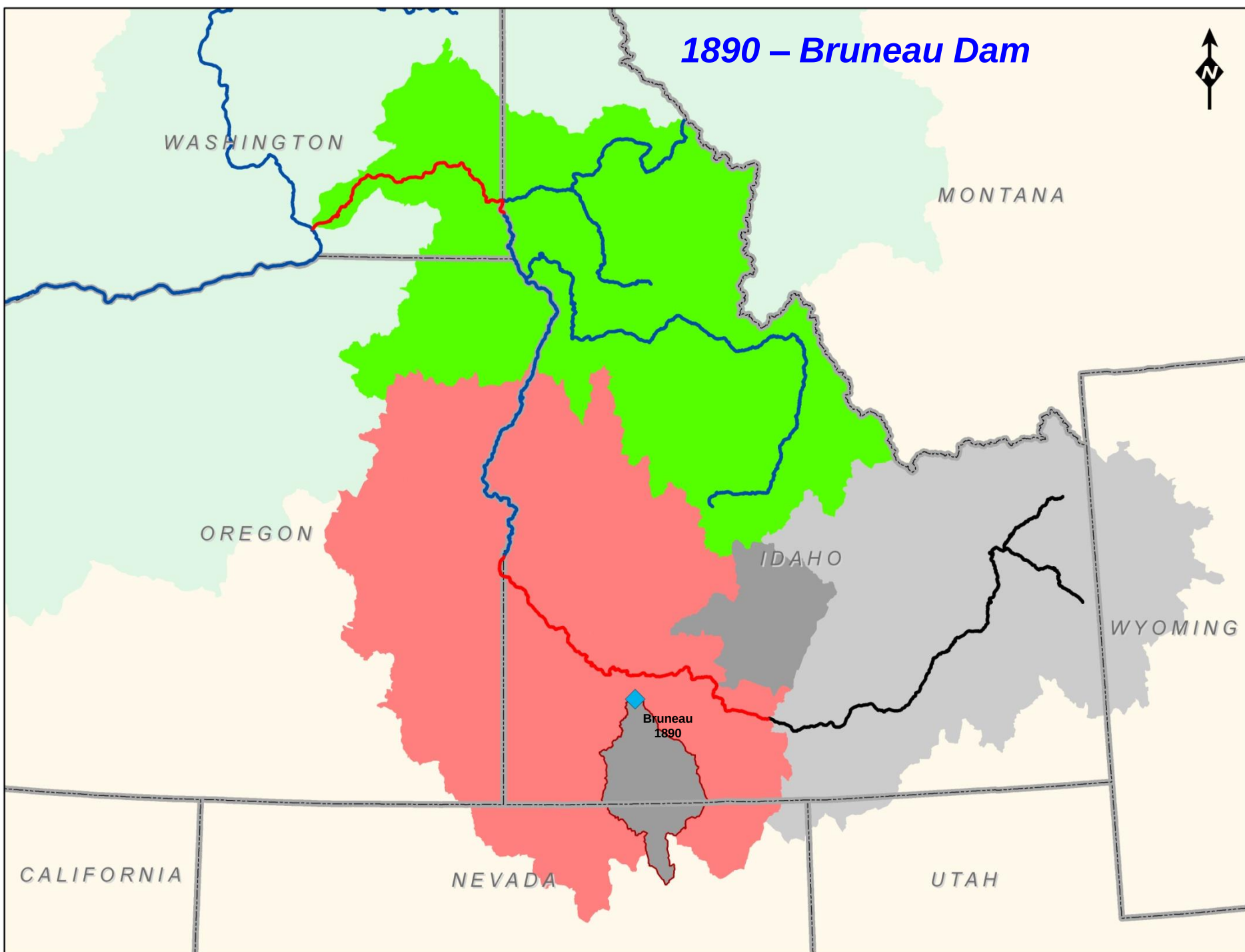
WYOMING

CALIFORNIA

NEVADA

UTAH

Bruneau
1890



1901 – Swan Falls Dam



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

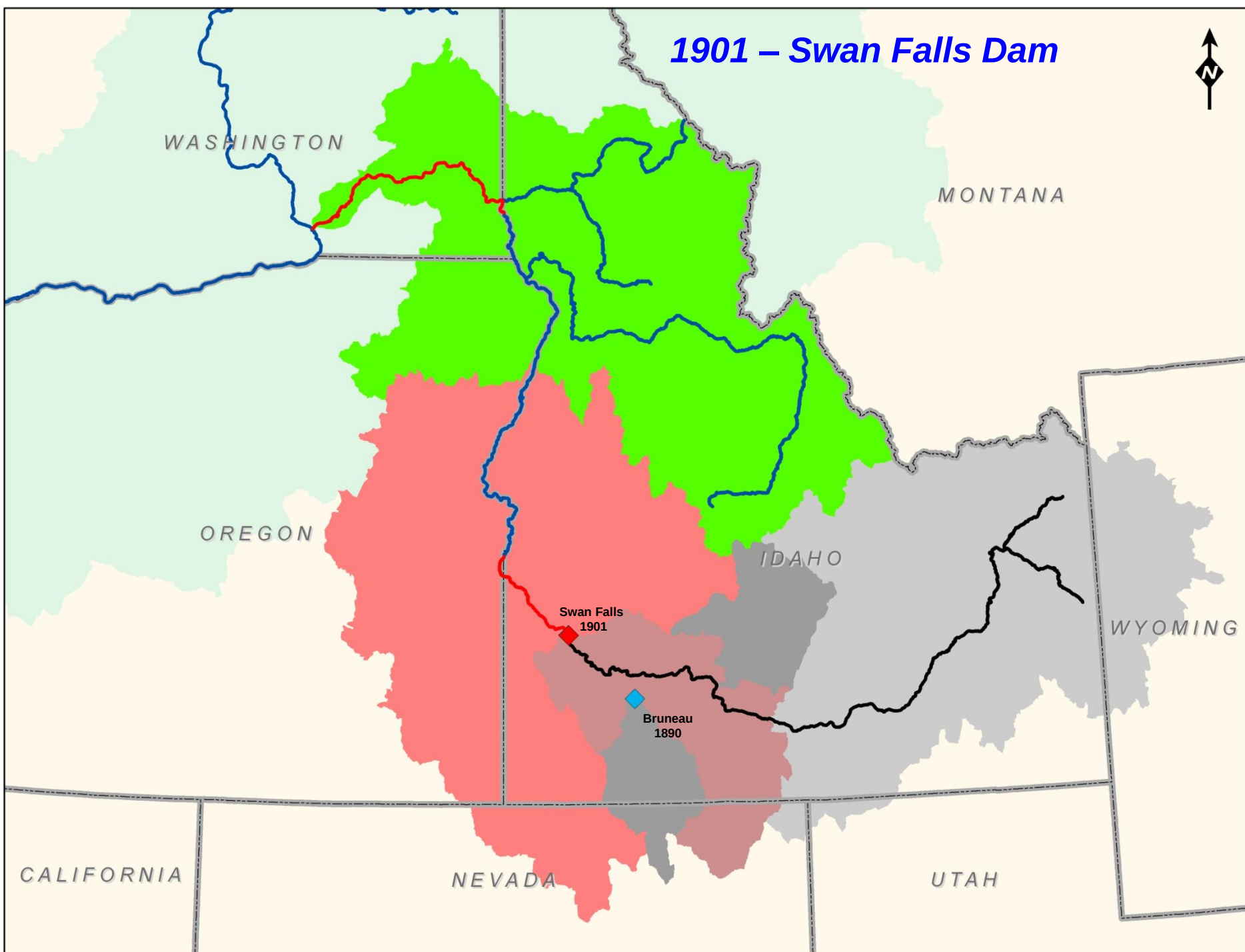
CALIFORNIA

NEVADA

UTAH

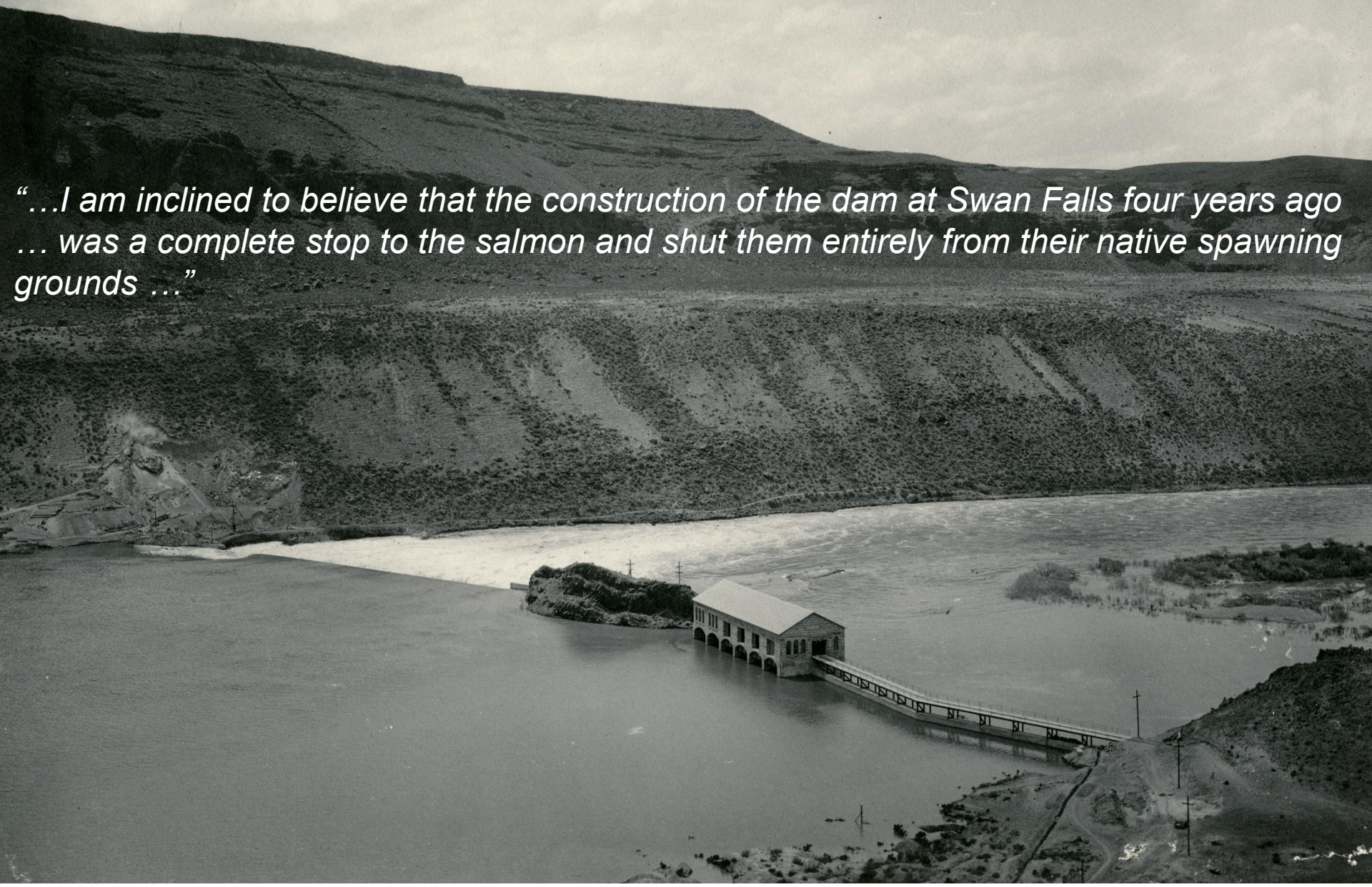
Swan Falls
1901

Bruneau
1890



Frank Brown - Superintendent, Ontario Hatchery, 1904

“...I am inclined to believe that the construction of the dam at Swan Falls four years ago ... was a complete stop to the salmon and shut them entirely from their native spawning grounds ...”



1907 – Lower Salmon Falls Dam



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

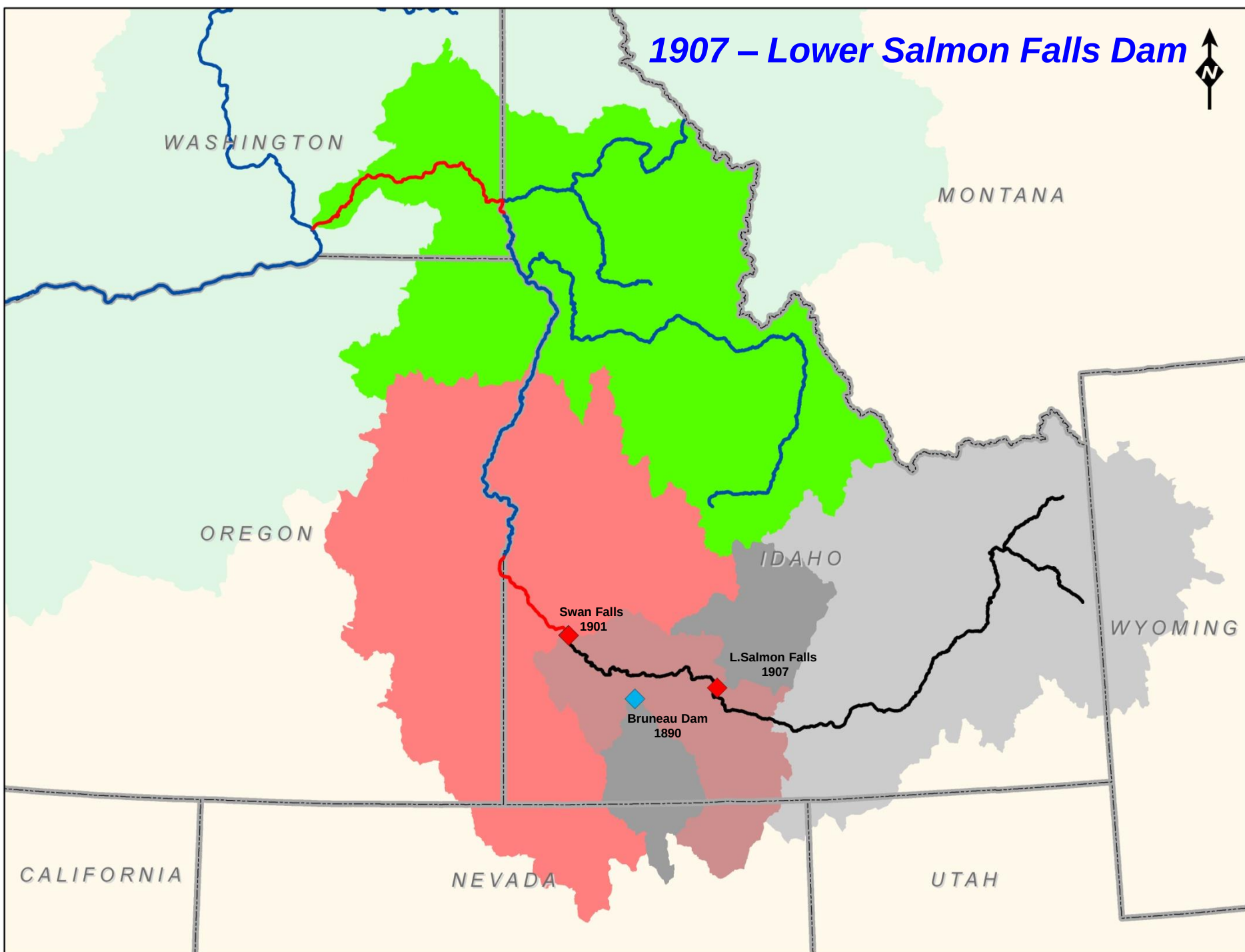
NEVADA

UTAH

Swan Falls
1901

L.Salmon Falls
1907

Bruneau Dam
1890



1910 – Salmon Falls Creek Dam



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

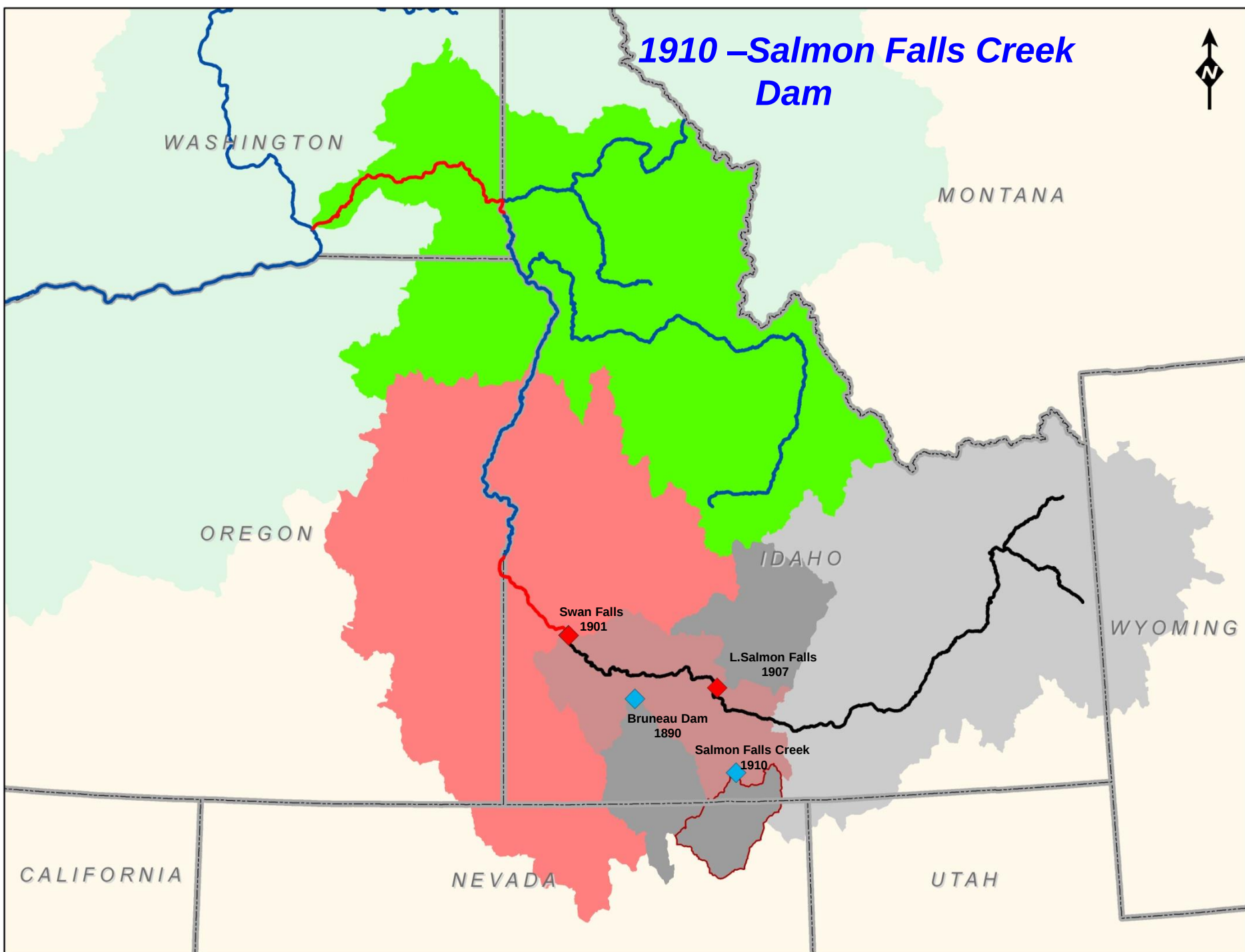
UTAH

Swan Falls
1901

L.Salmon Falls
1907

Bruneau Dam
1890

Salmon Falls Creek
1910



1915 – Arrow Rock Dam Boise River



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

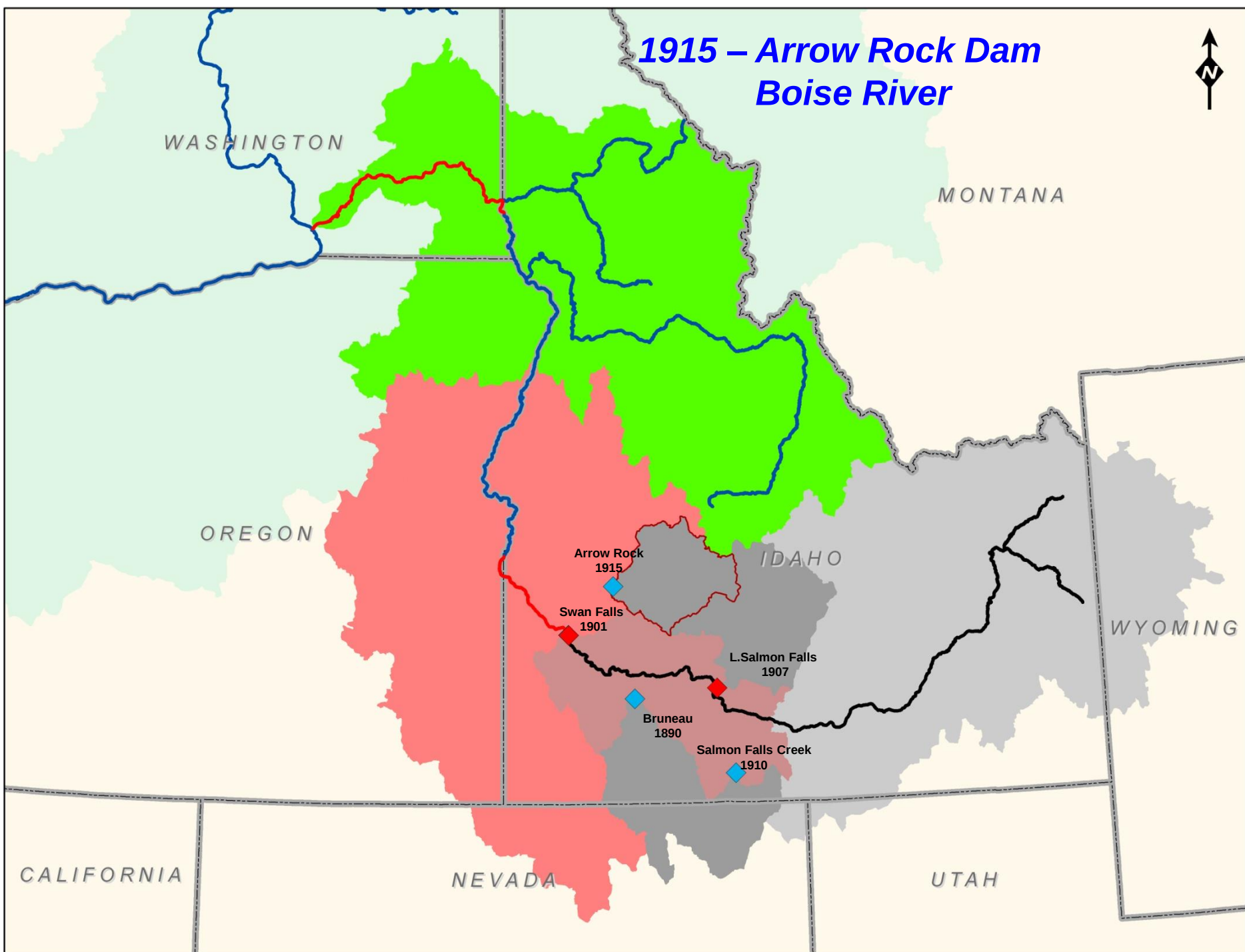
Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

Bruneau
1890

Salmon Falls Creek
1910



1919 – Warm Springs Dam Malheur River



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

Warm Springs
1919

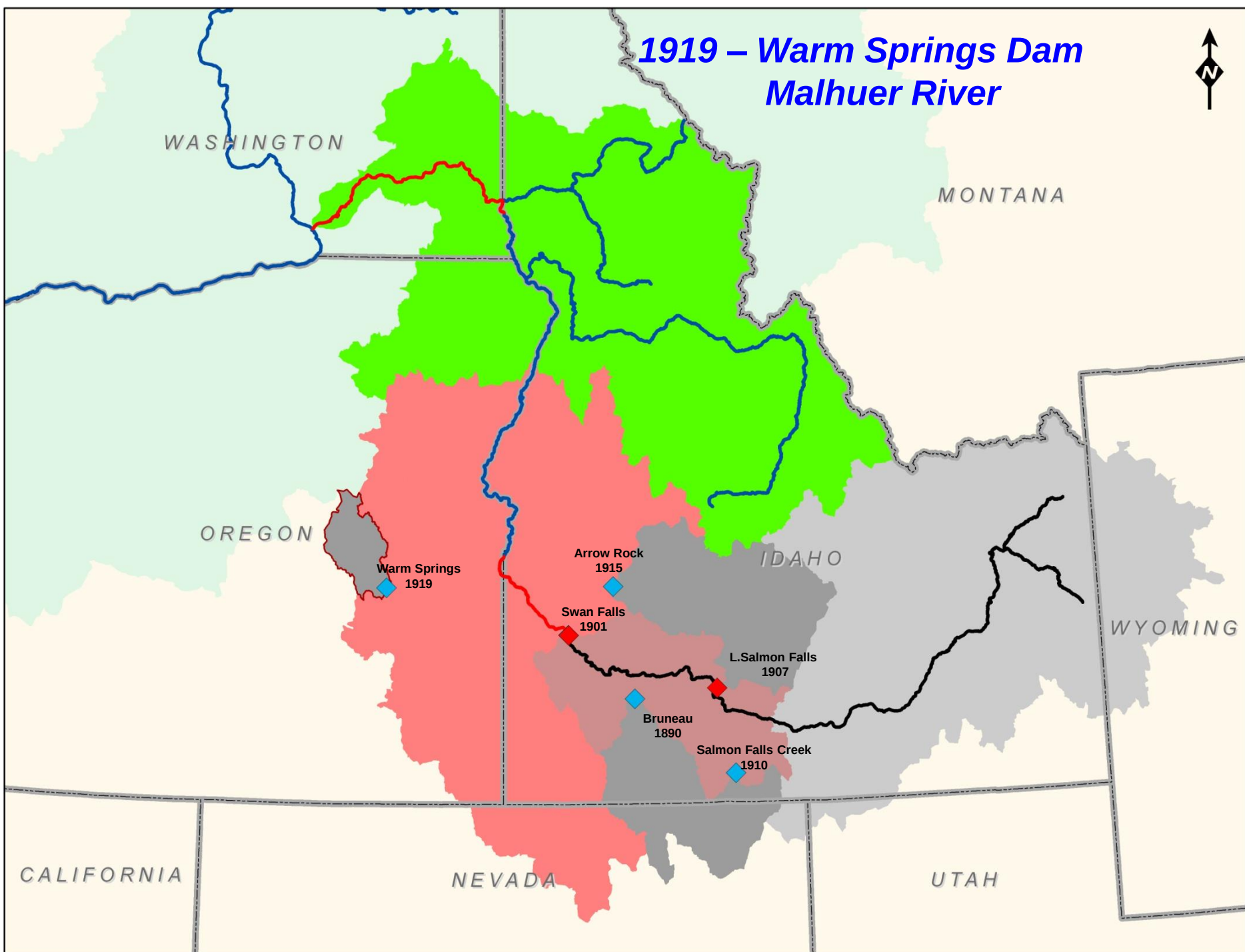
Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

Bruneau
1890

Salmon Falls Creek
1910



1922 – Swan Falls Fish Ladder Rebuilt



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

Warm Springs
1919

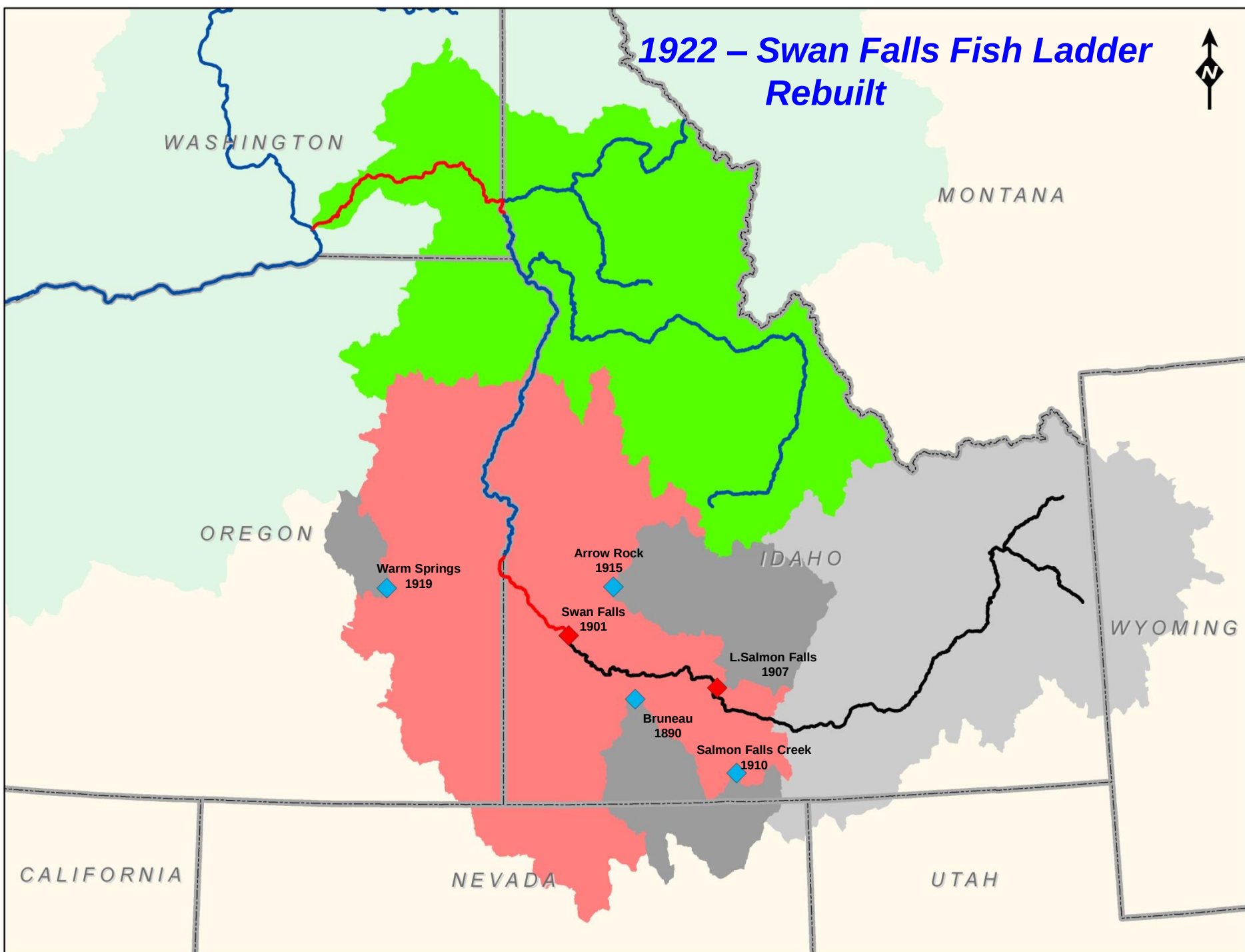
Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

Bruneau
1890

Salmon Falls Creek
1910



1924 – Black Canyon Dam Payette River



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

Warm Springs
1919

Black Canyon
1924

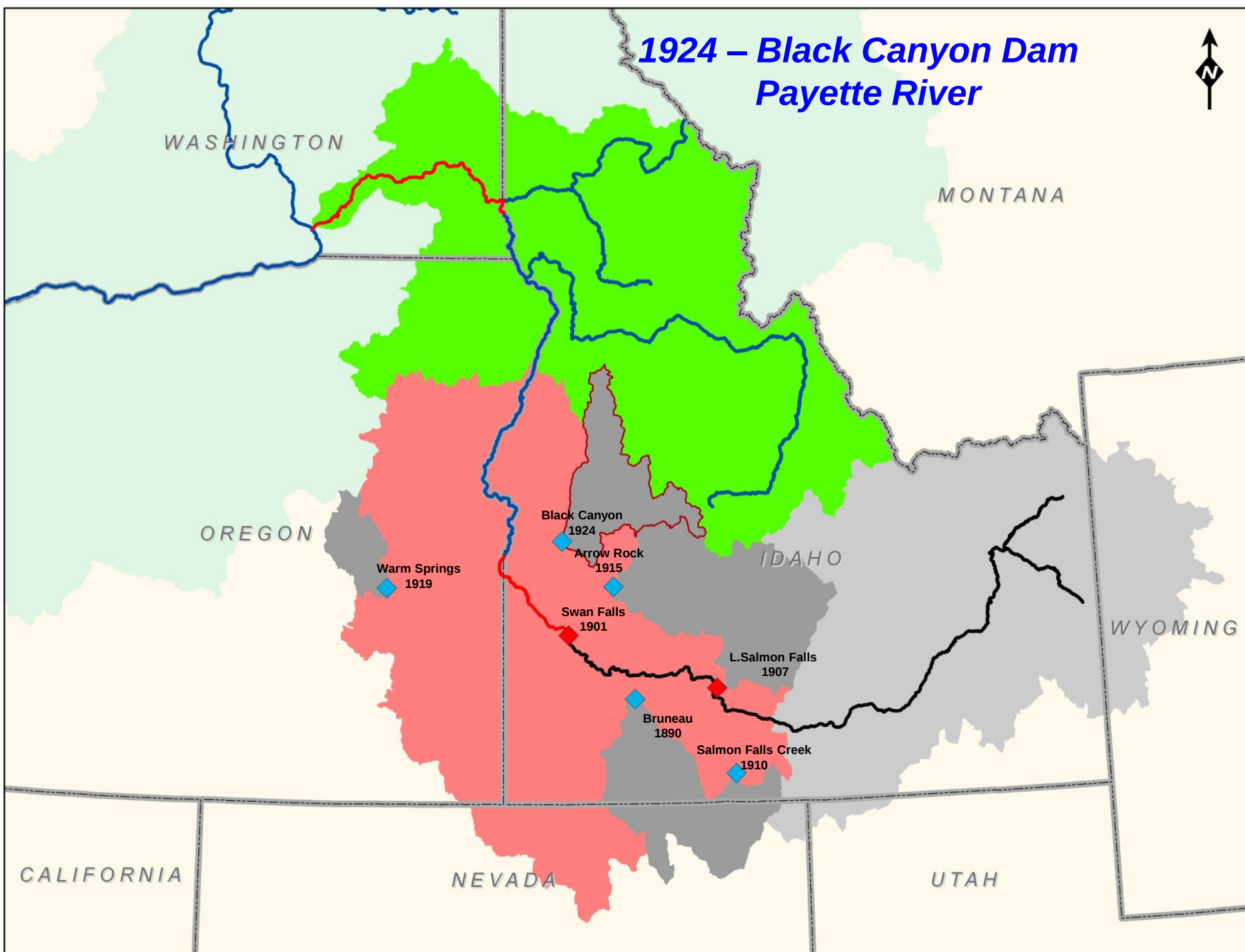
Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

Bruneau
1890

Salmon Falls Creek
1910



1927 – Lewiston Dam Clearwater River



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

Lewiston Dam
1927

Warm Springs
1919

Black Canyon
1924

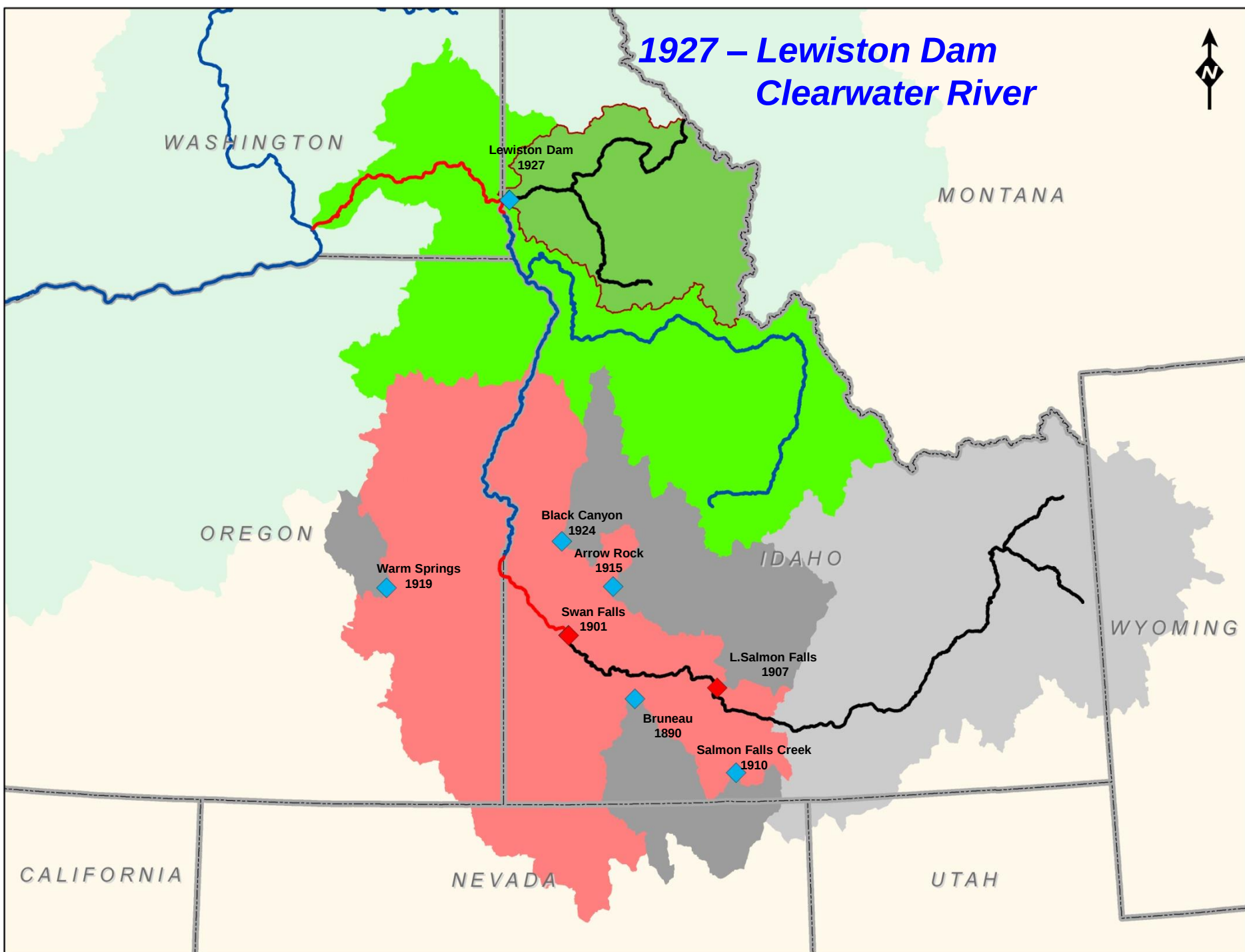
Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

Bruneau
1890

Salmon Falls Creek
1910



1932 – Upper Salmon Falls – Thief Valley Dam Powder River



WASHINGTON

MONTANA

OREGON

IDAHO

WYOMING

CALIFORNIA

NEVADA

UTAH

Lewiston Dam
1927

Thief Valley
1932

Warm Springs
1919

Black Canyon
1924

Arrow Rock
1915

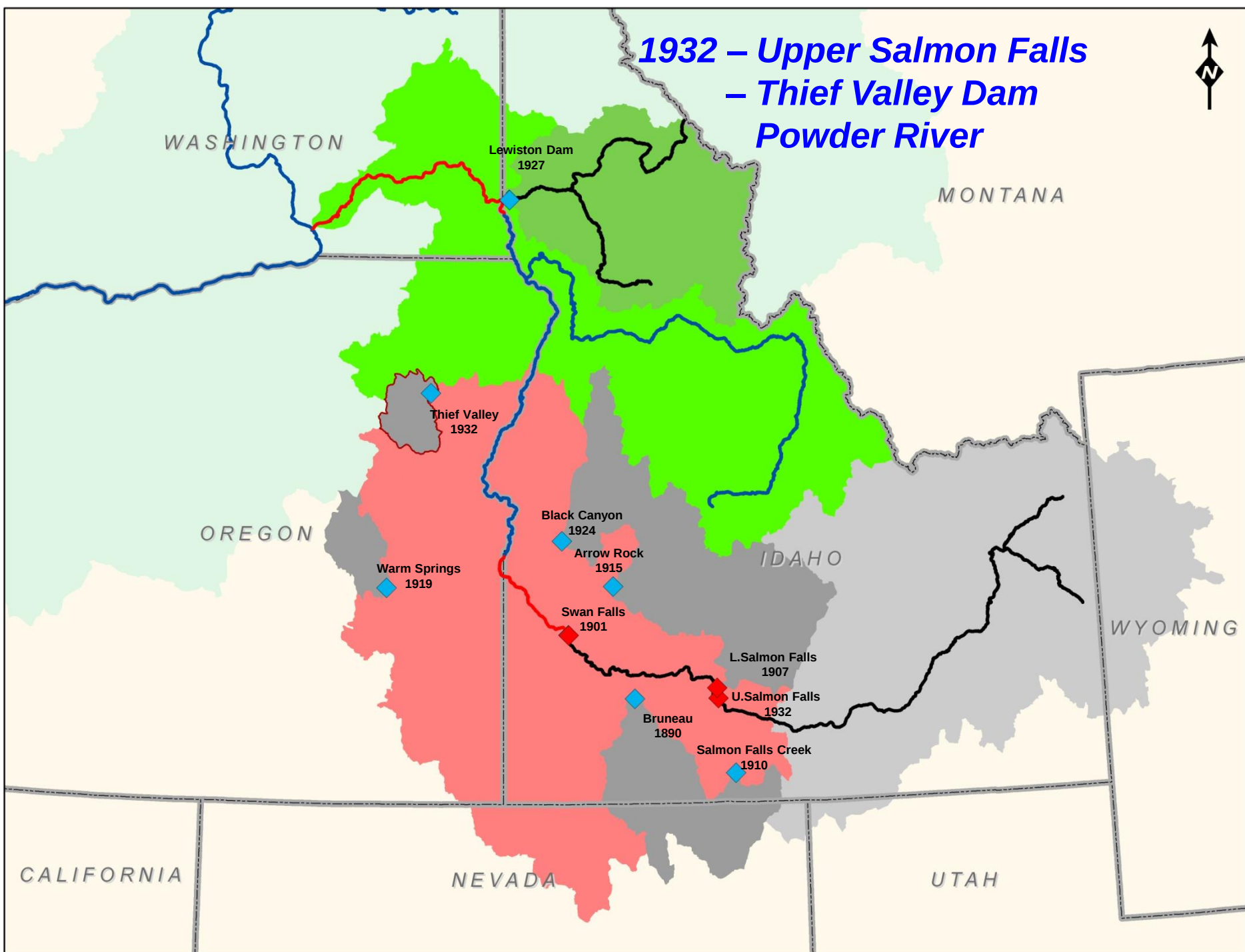
Swan Falls
1901

L.Salmon Falls
1907

U.Salmon Falls
1932

Bruneau
1890

Salmon Falls Creek
1910



1932 – Owyhee Dam Owyhee River



WASHINGTON

Lewiston Dam
1927

MONTANA

OREGON

Thief Valley
1932

Black Canyon
1924

Arrow Rock
1915

IDAHO

WYOMING

Warm Springs
1919

Owyhee
1932

Swan Falls
1901

L.Salmon Falls
1907

U.Salmon Falls
1932

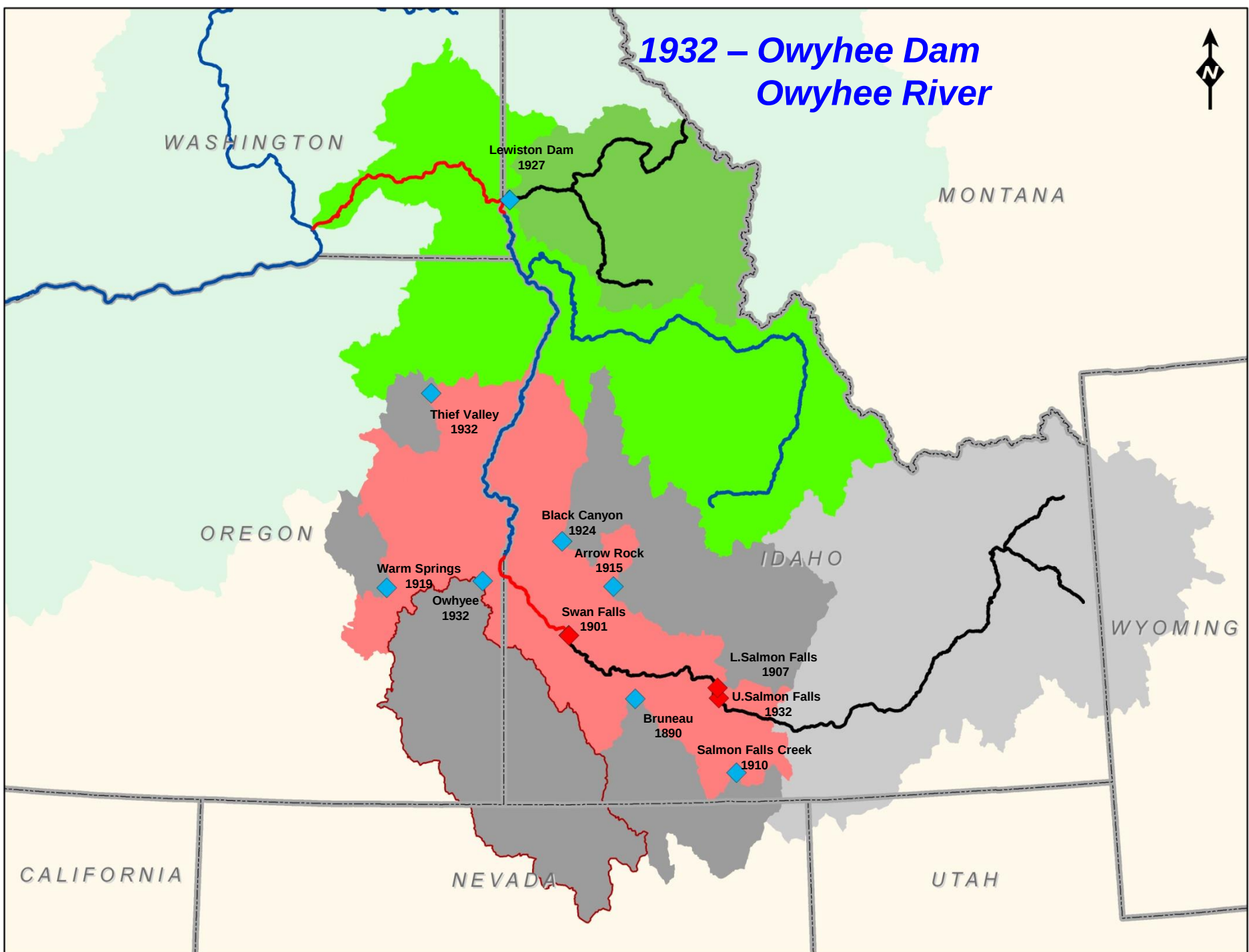
Bruneau
1890

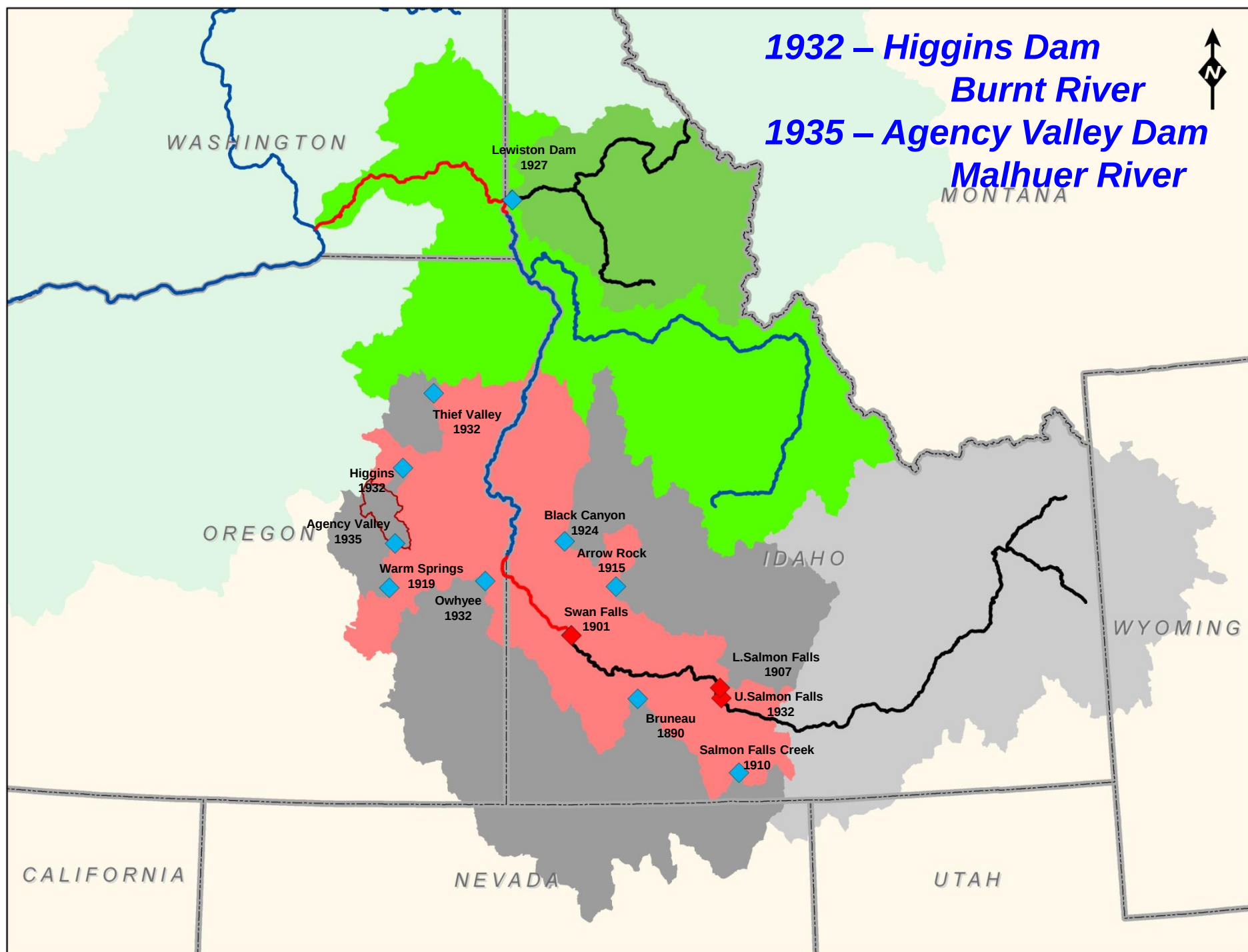
Salmon Falls Creek
1910

CALIFORNIA

NEVADA

UTAH





1938 – Unity Dam Burnt River



WASHINGTON

Lewiston Dam
1927

MONTANA

OREGON

Higgins
1932

Thief Valley
1932
Unity
1938

Agency Valley
1935

Warm Springs
1919

Owhyee
1932

Black Canyon
1924

Arrow Rock
1915

Swan Falls
1901

L.Salmon Falls
1907

U.Salmon Falls
1932

Bruneau
1890

Salmon Falls Creek
1910

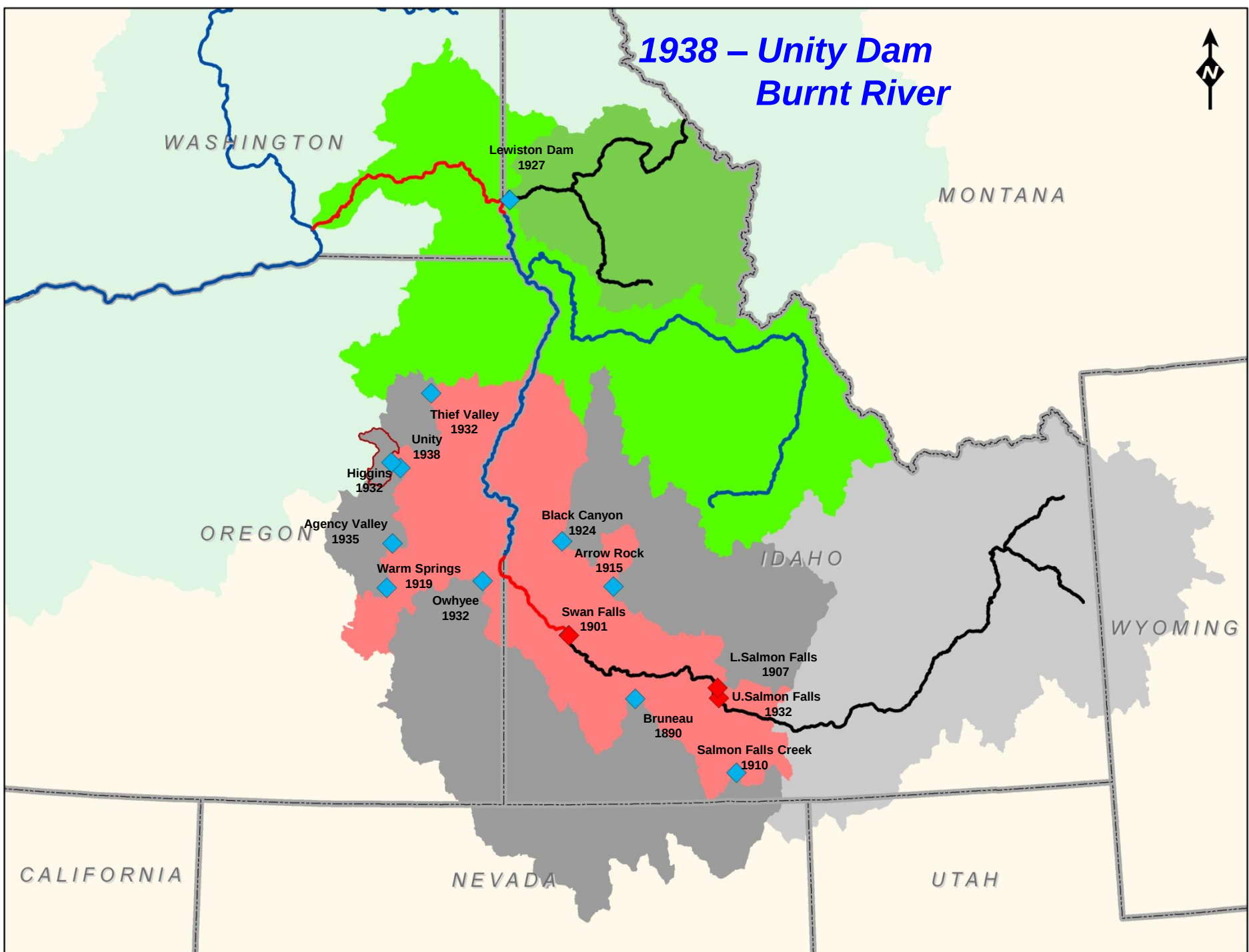
IDAHO

WYOMING

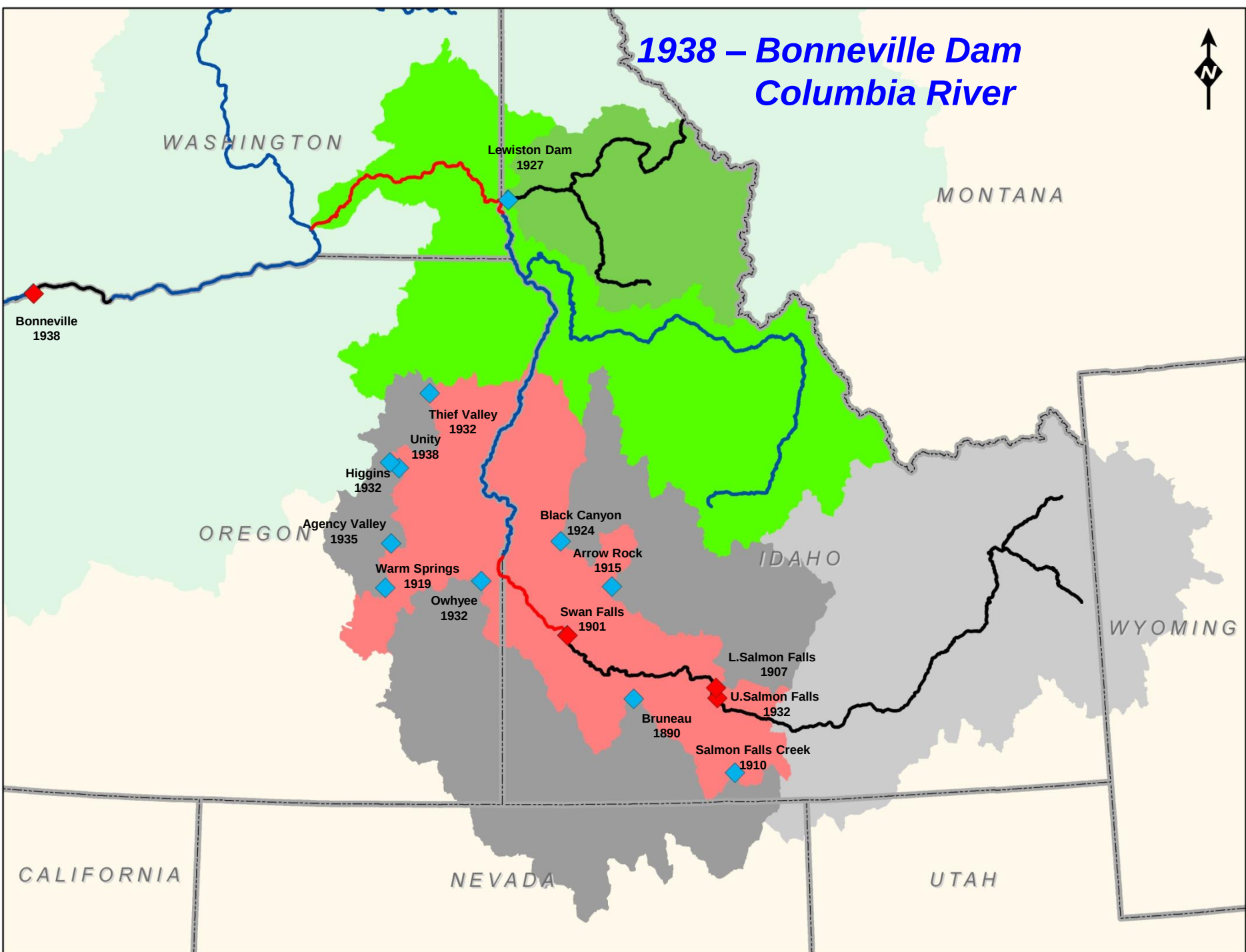
CALIFORNIA

NEVADA

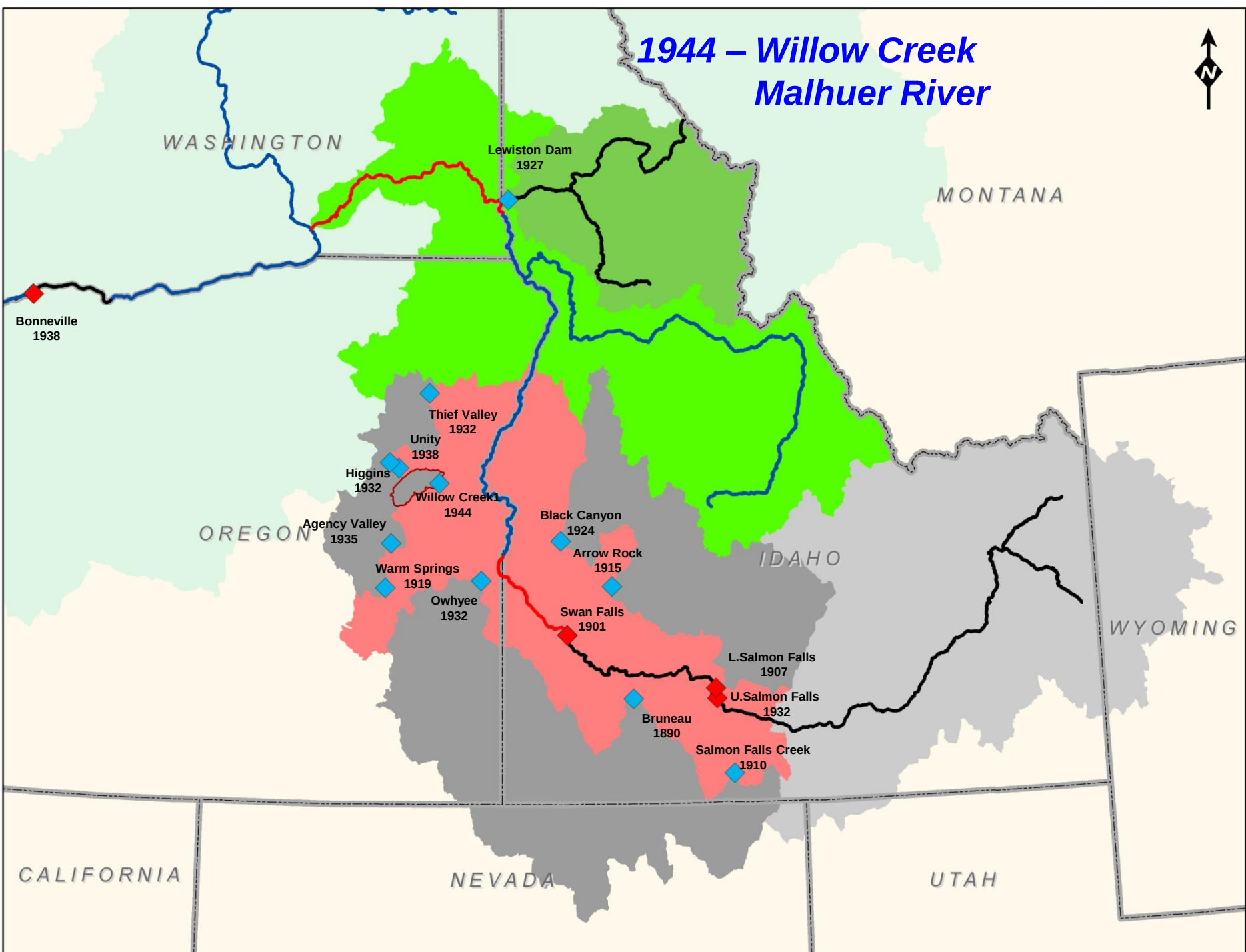
UTAH



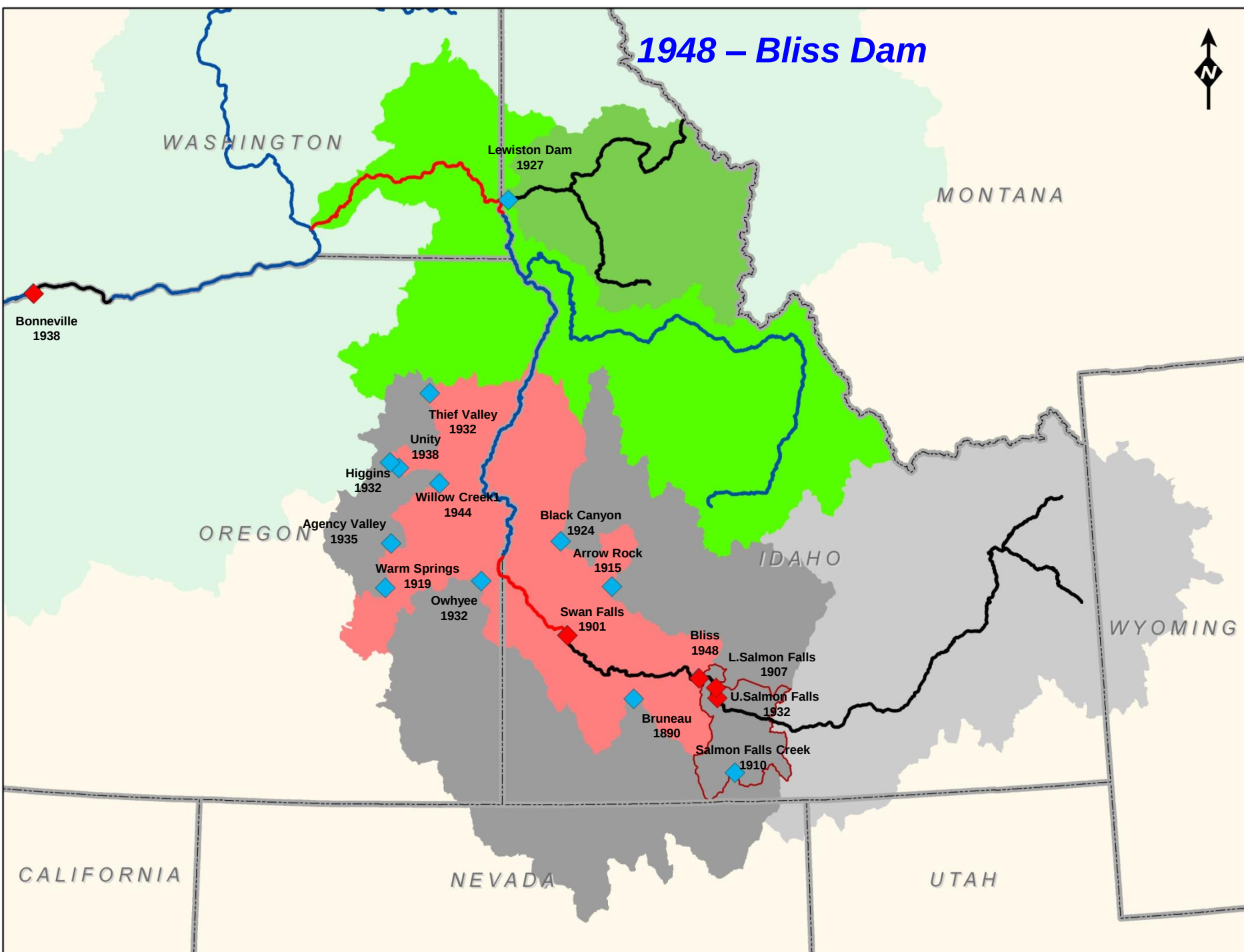
1938 – Bonneville Dam Columbia River



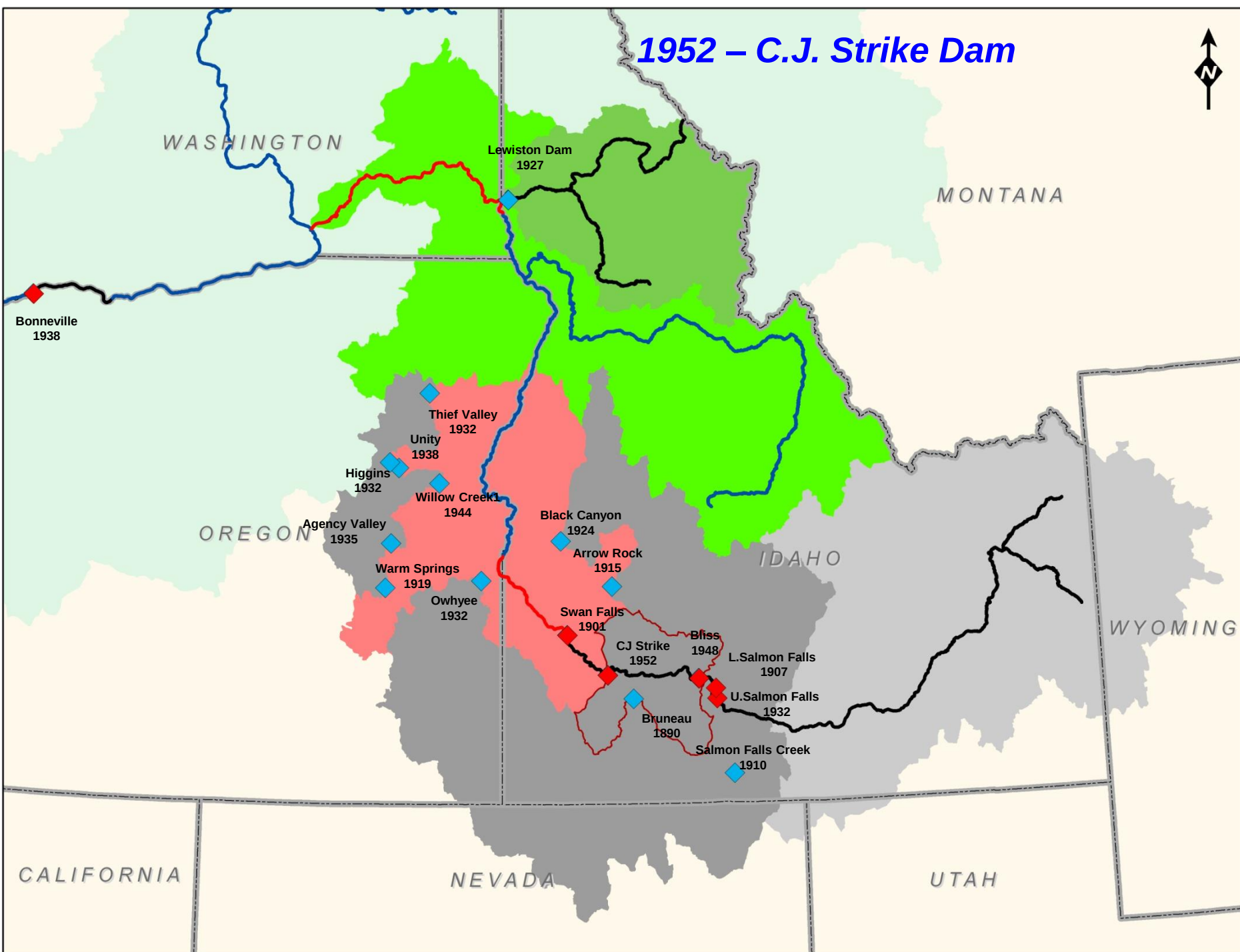
1944 – Willow Creek Malhuer River



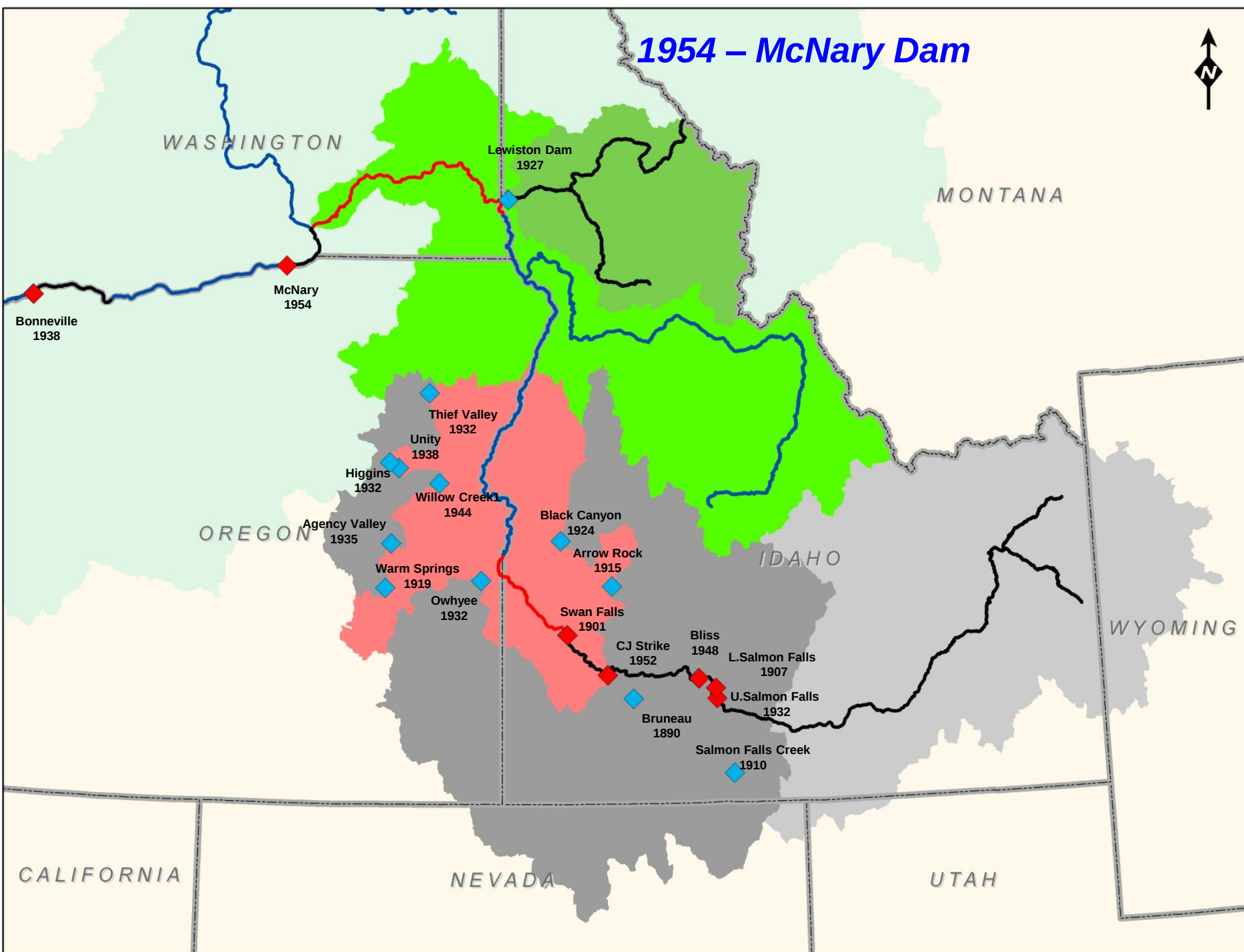
1948 – Bliss Dam



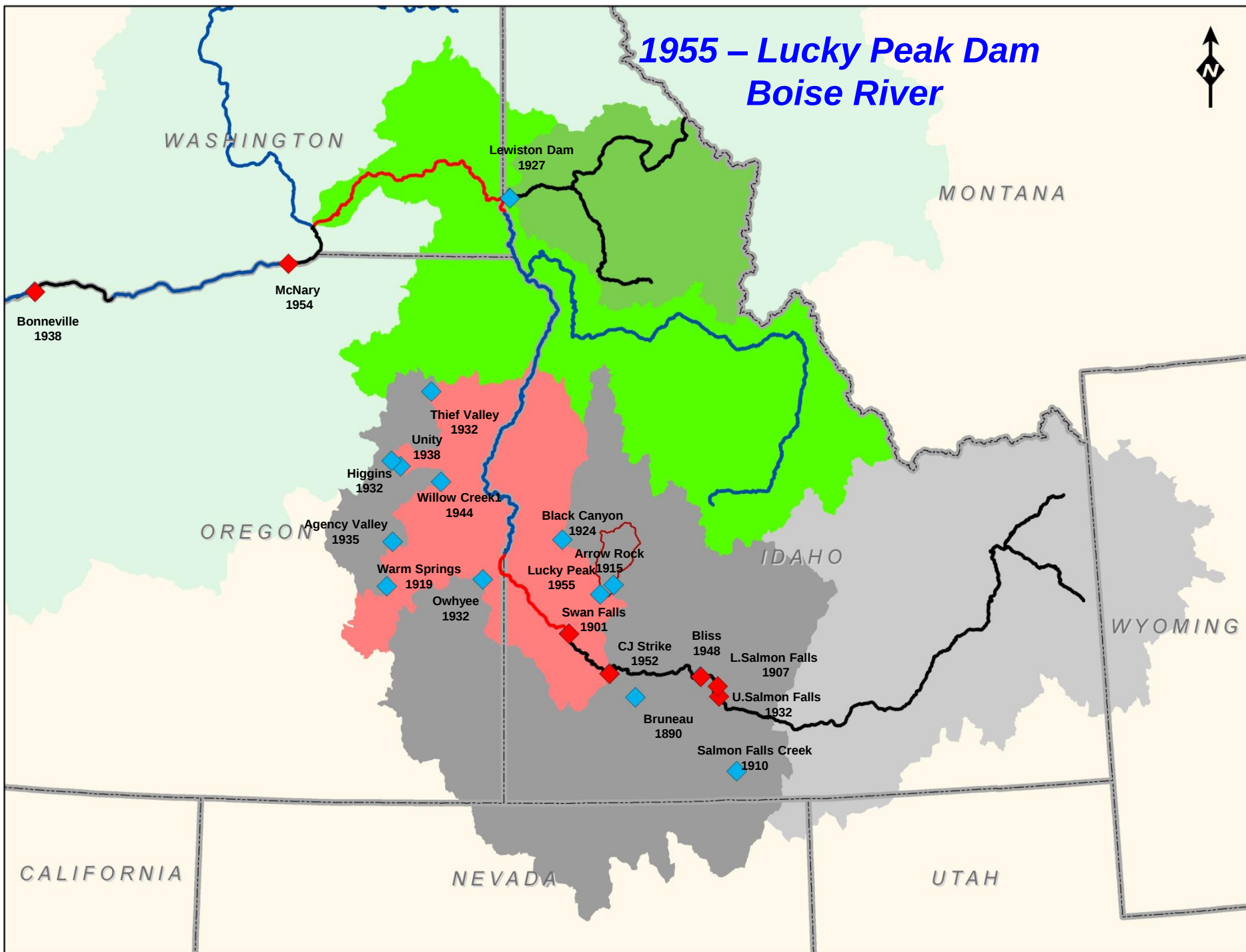
1952 – C.J. Strike Dam



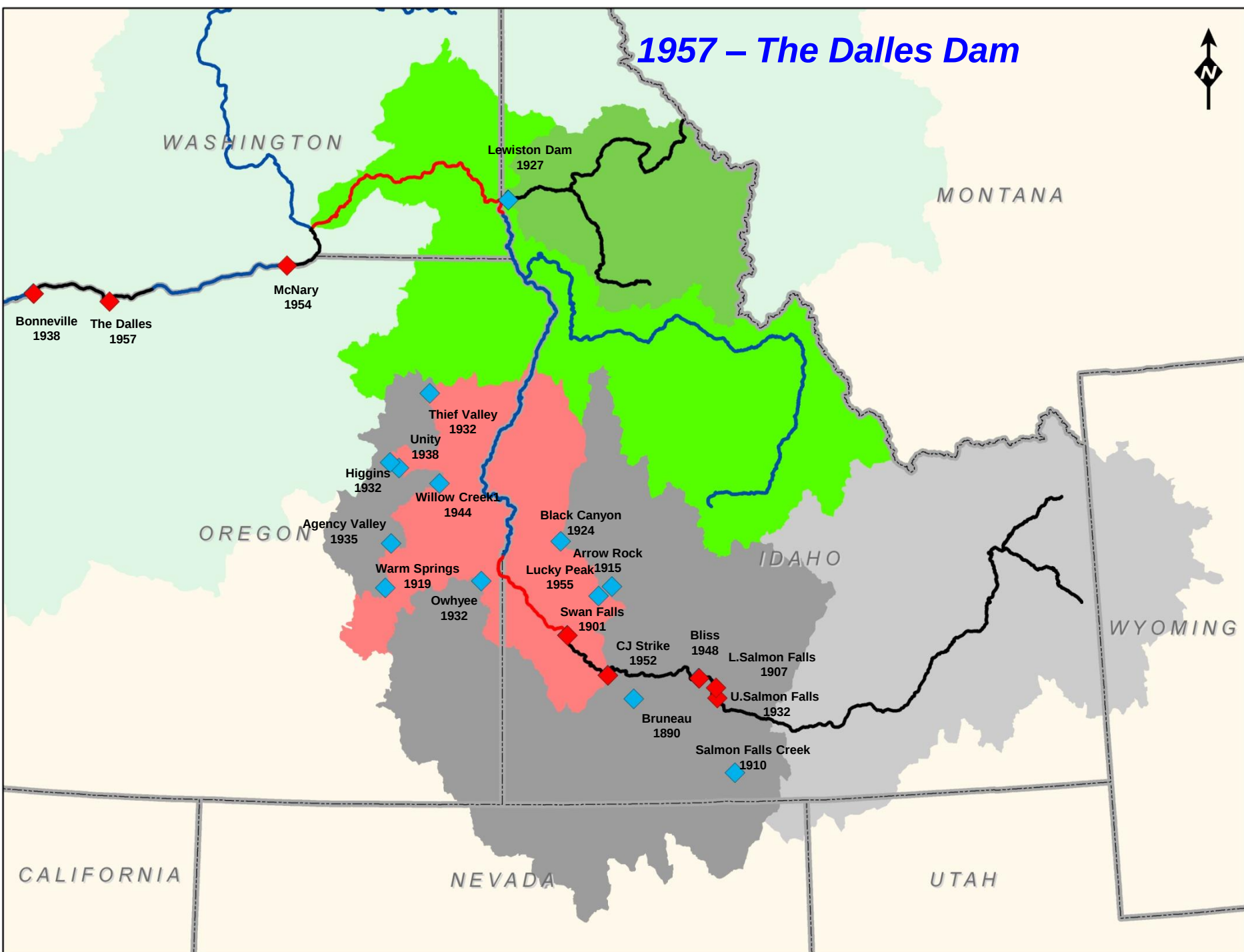
1954 – McNary Dam



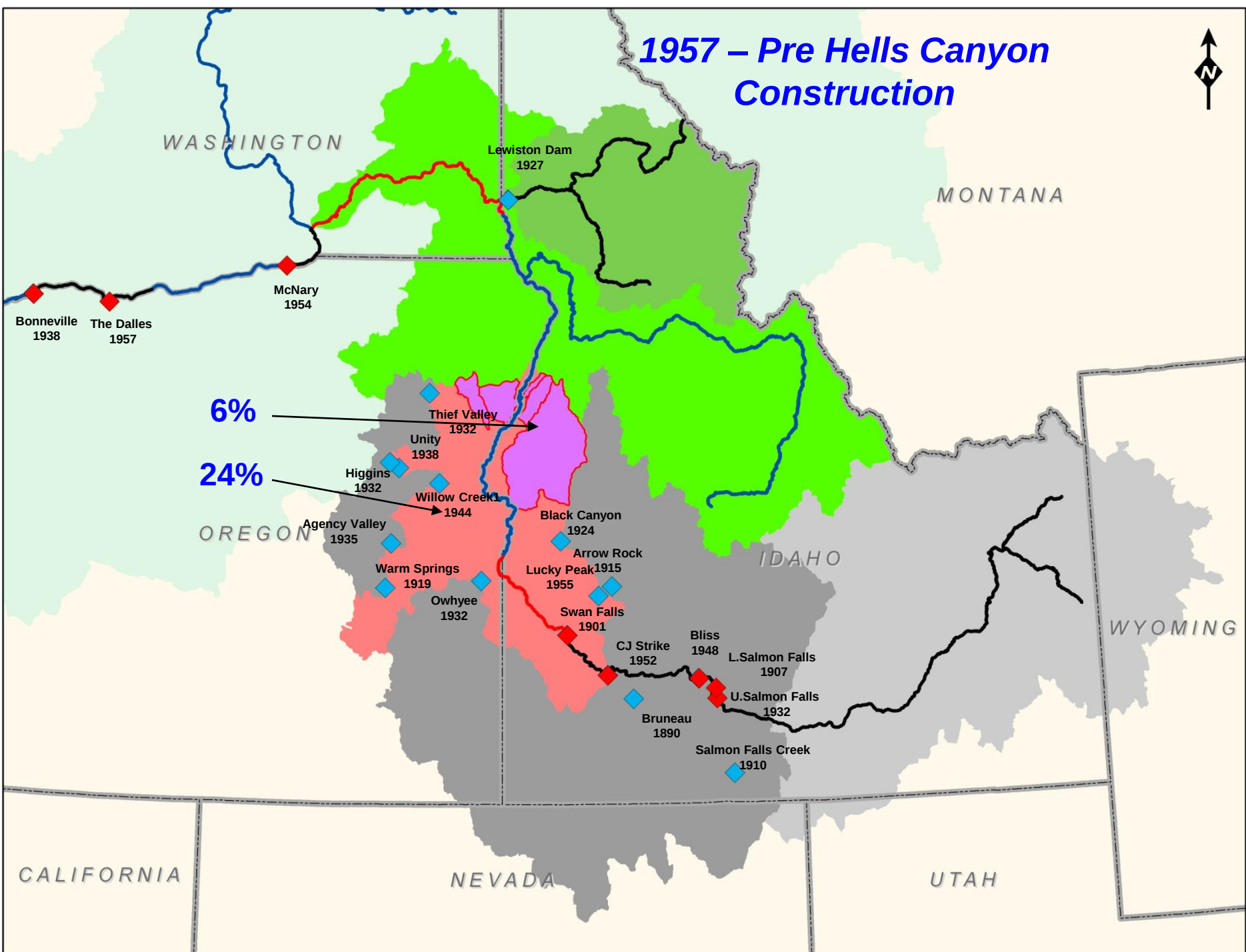
1955 – Lucky Peak Dam Boise River



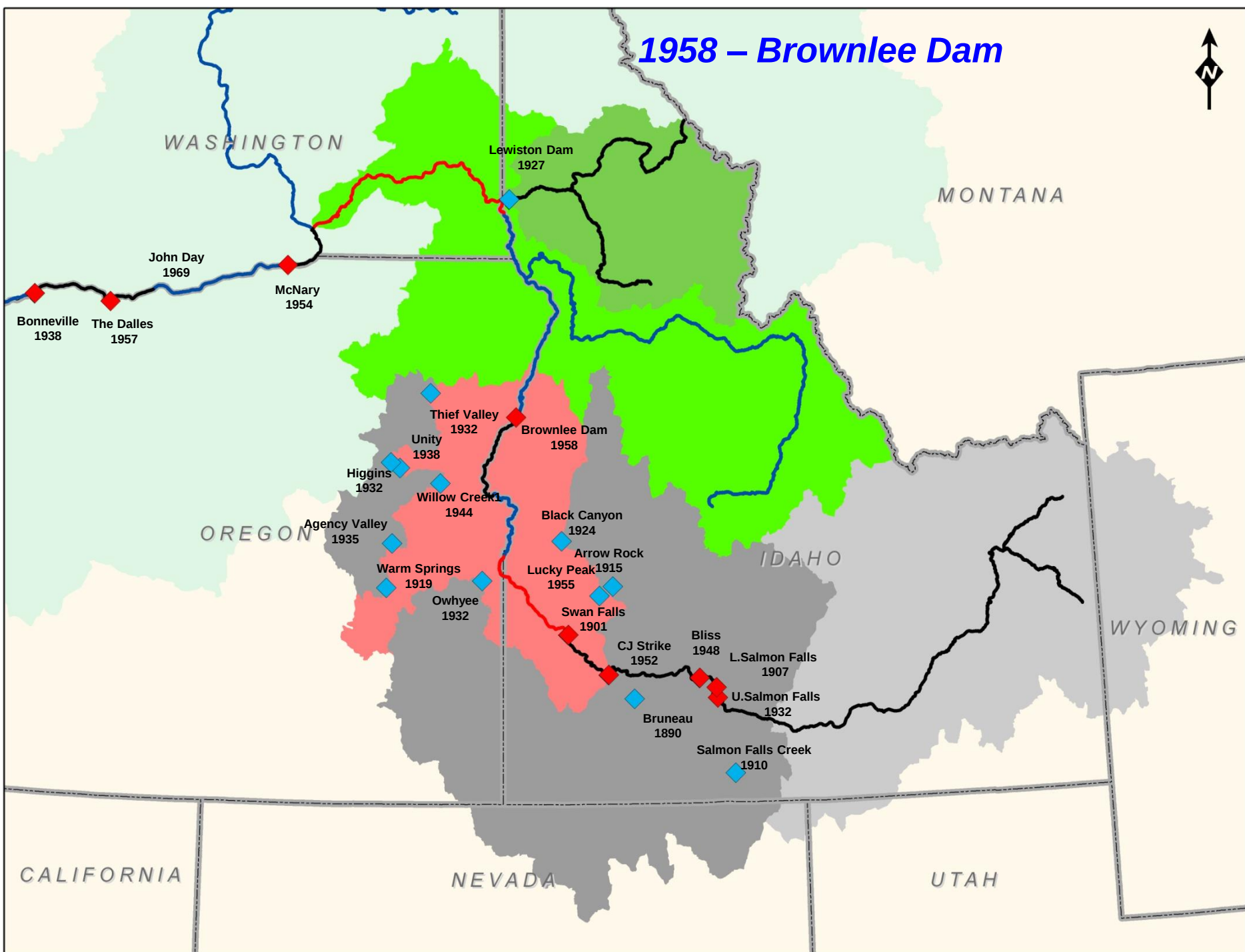
1957 – The Dalles Dam



1957 – Pre Hells Canyon Construction

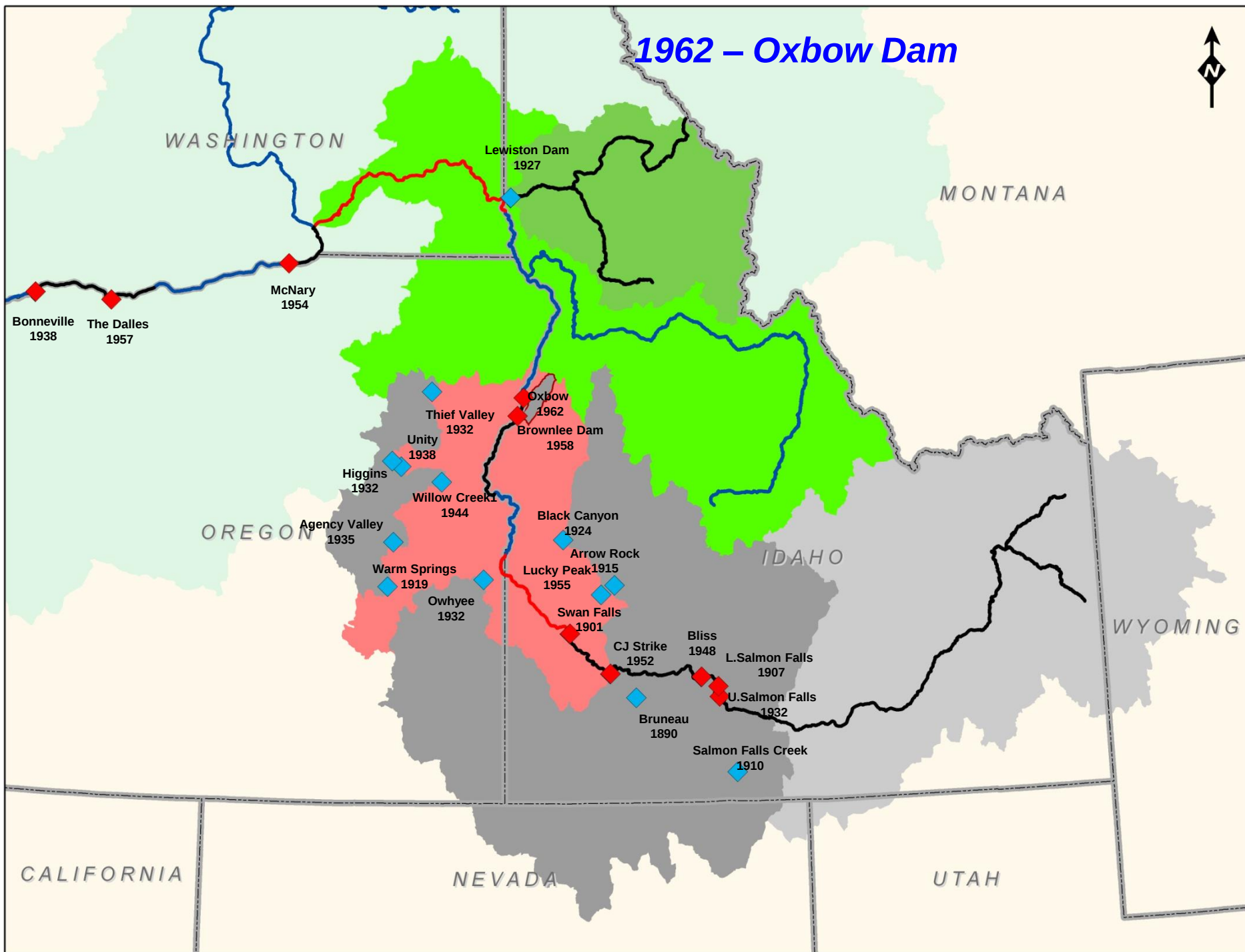


1958 – Brownlee Dam

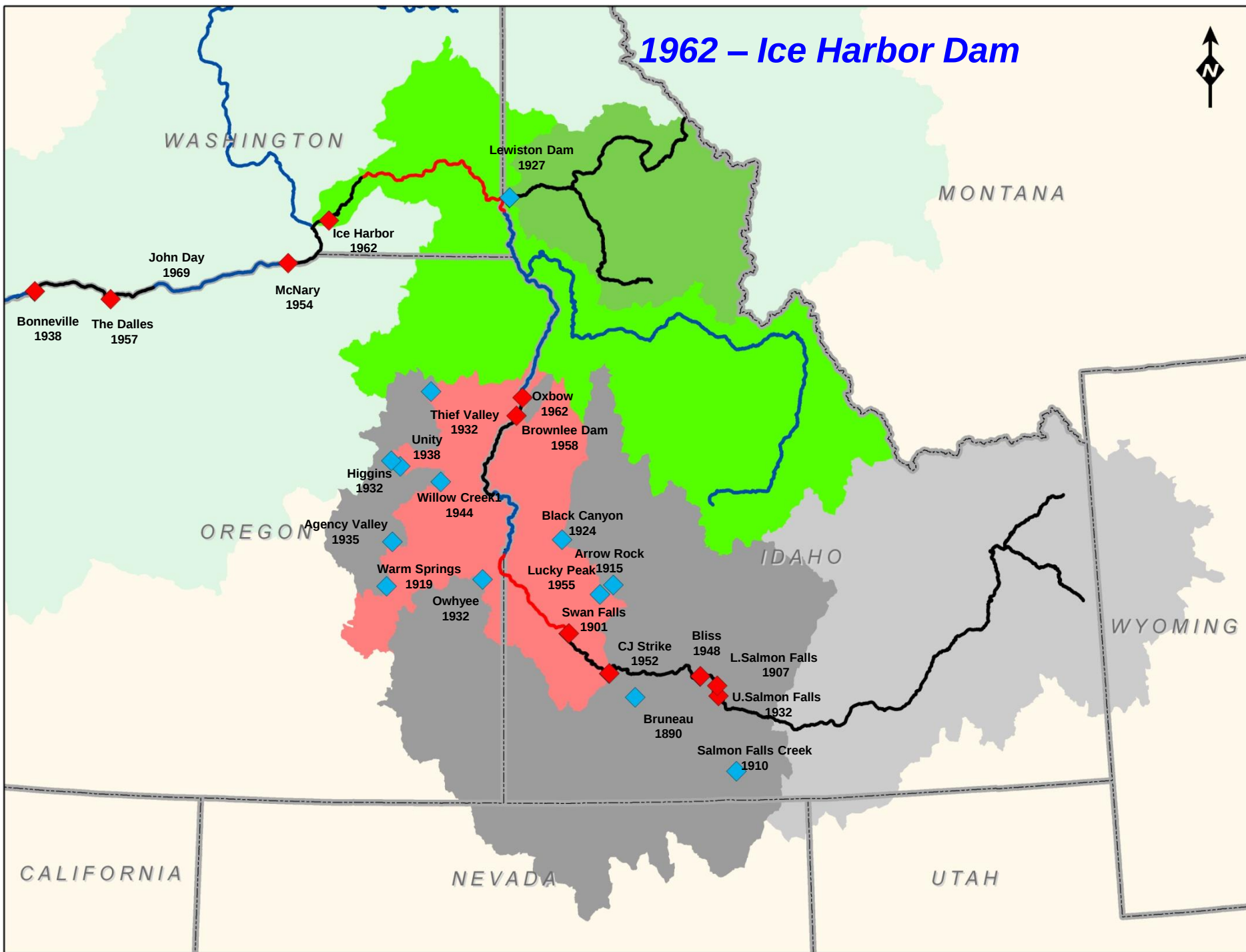




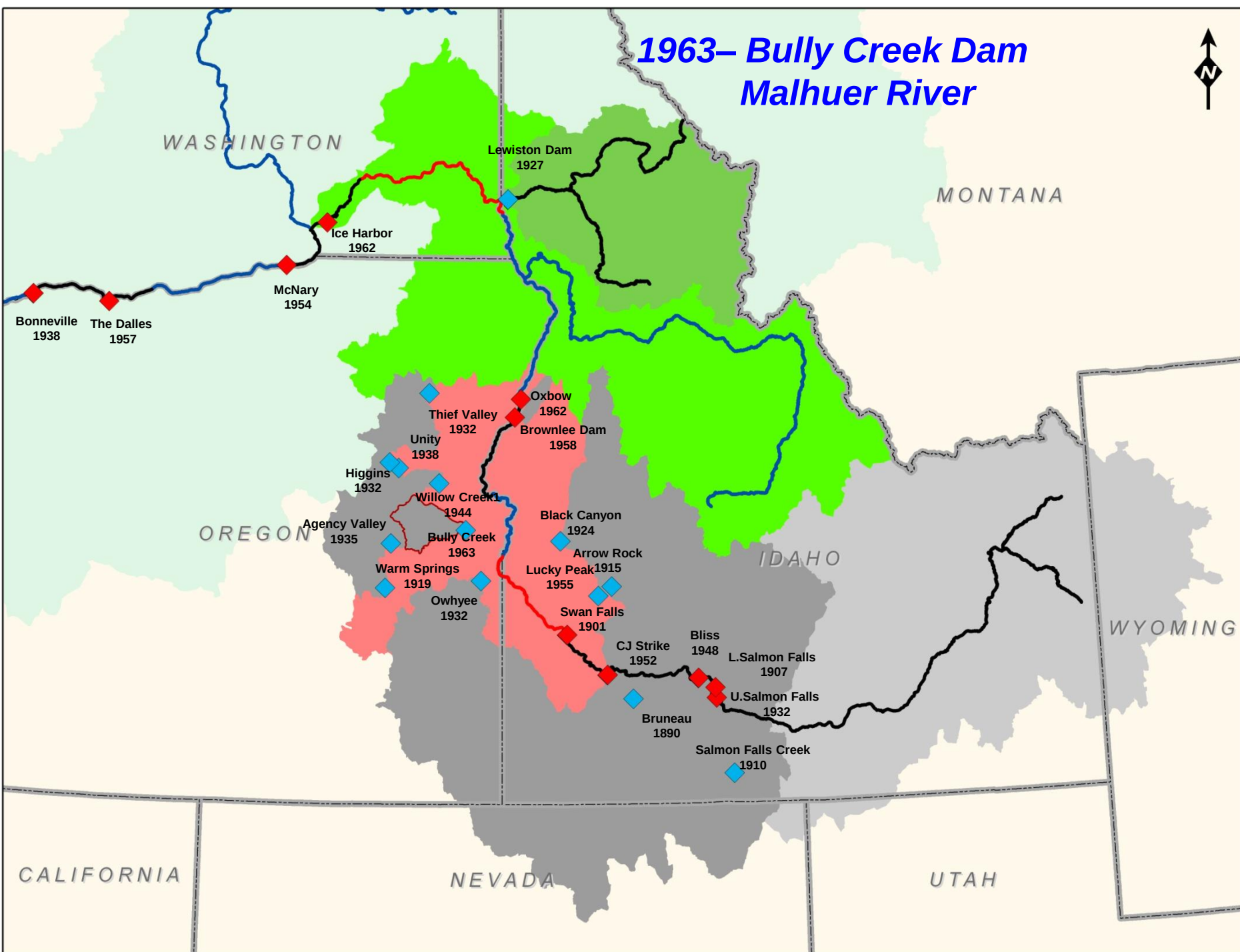
1962 – Oxbow Dam



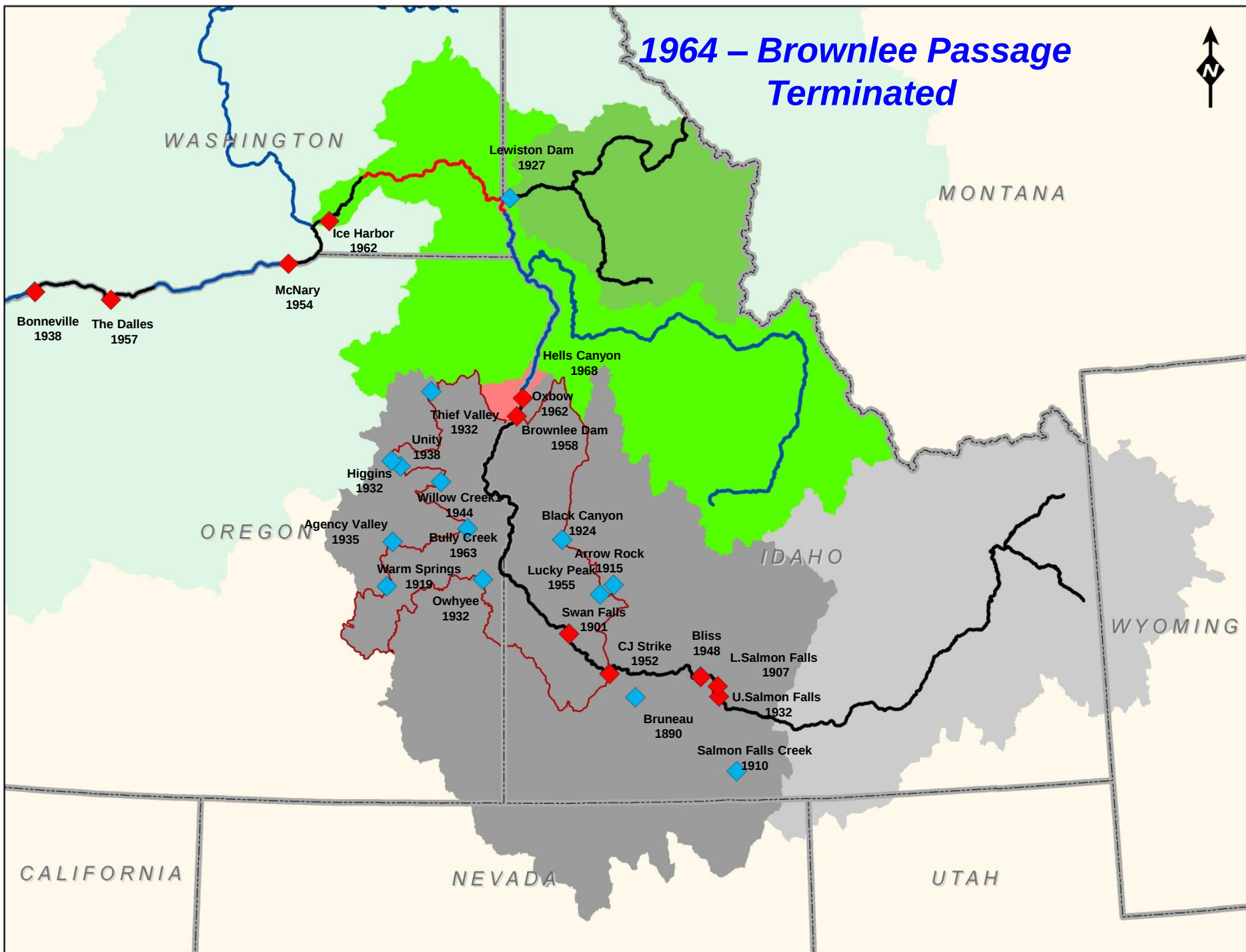
1962 – Ice Harbor Dam



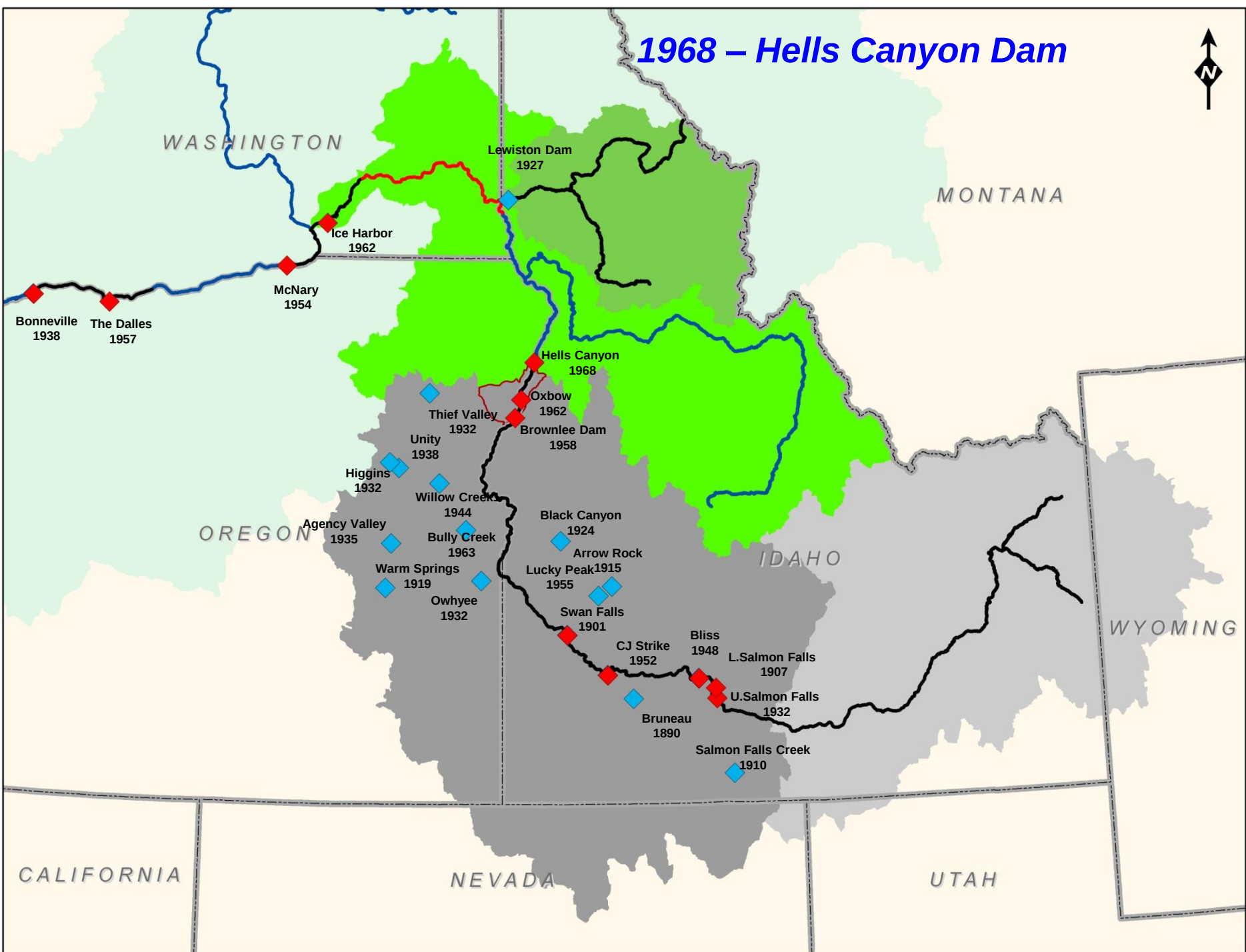
1963– Bully Creek Dam Malhuer River



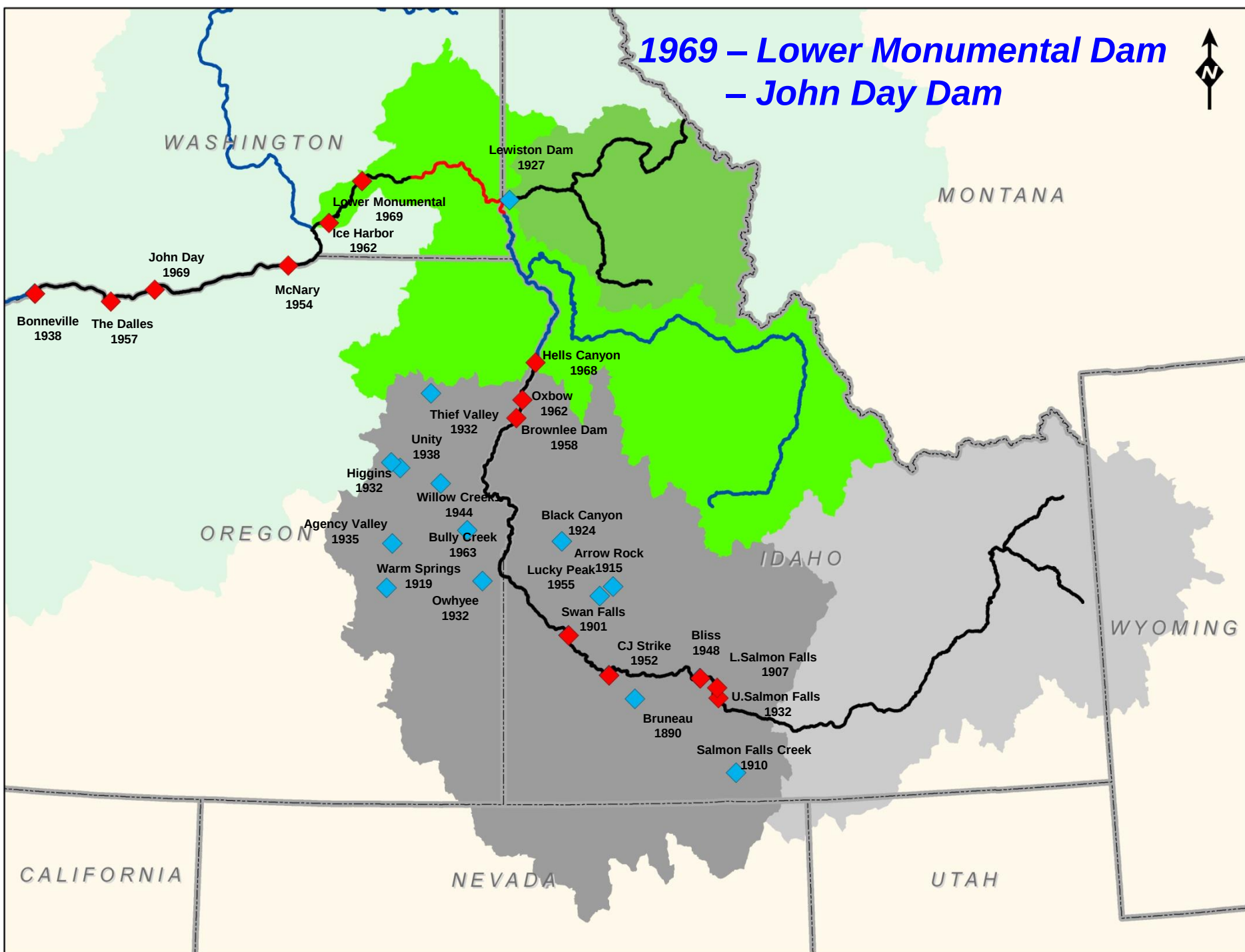
1964 – Brownlee Passage Terminated



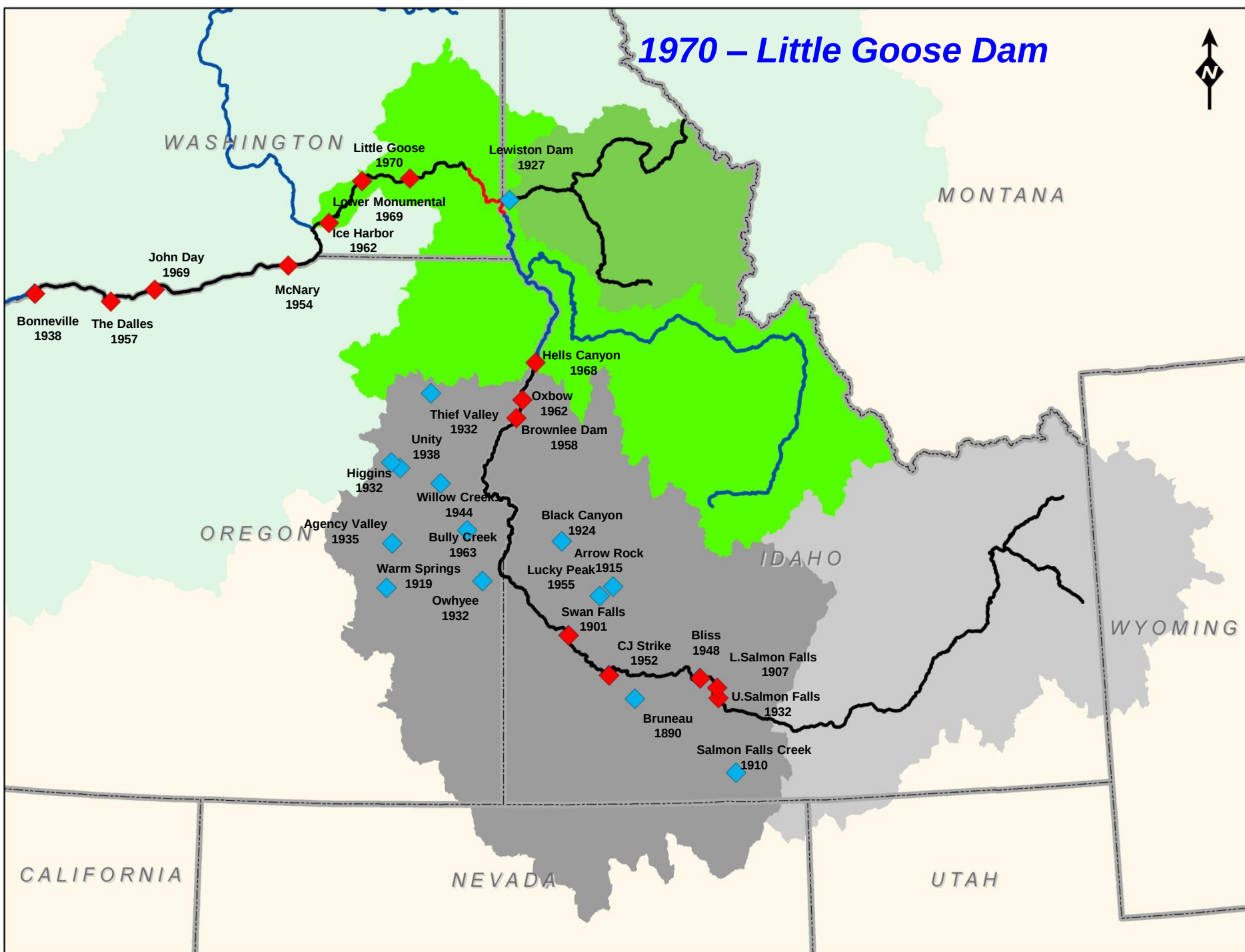
1968 – Hells Canyon Dam



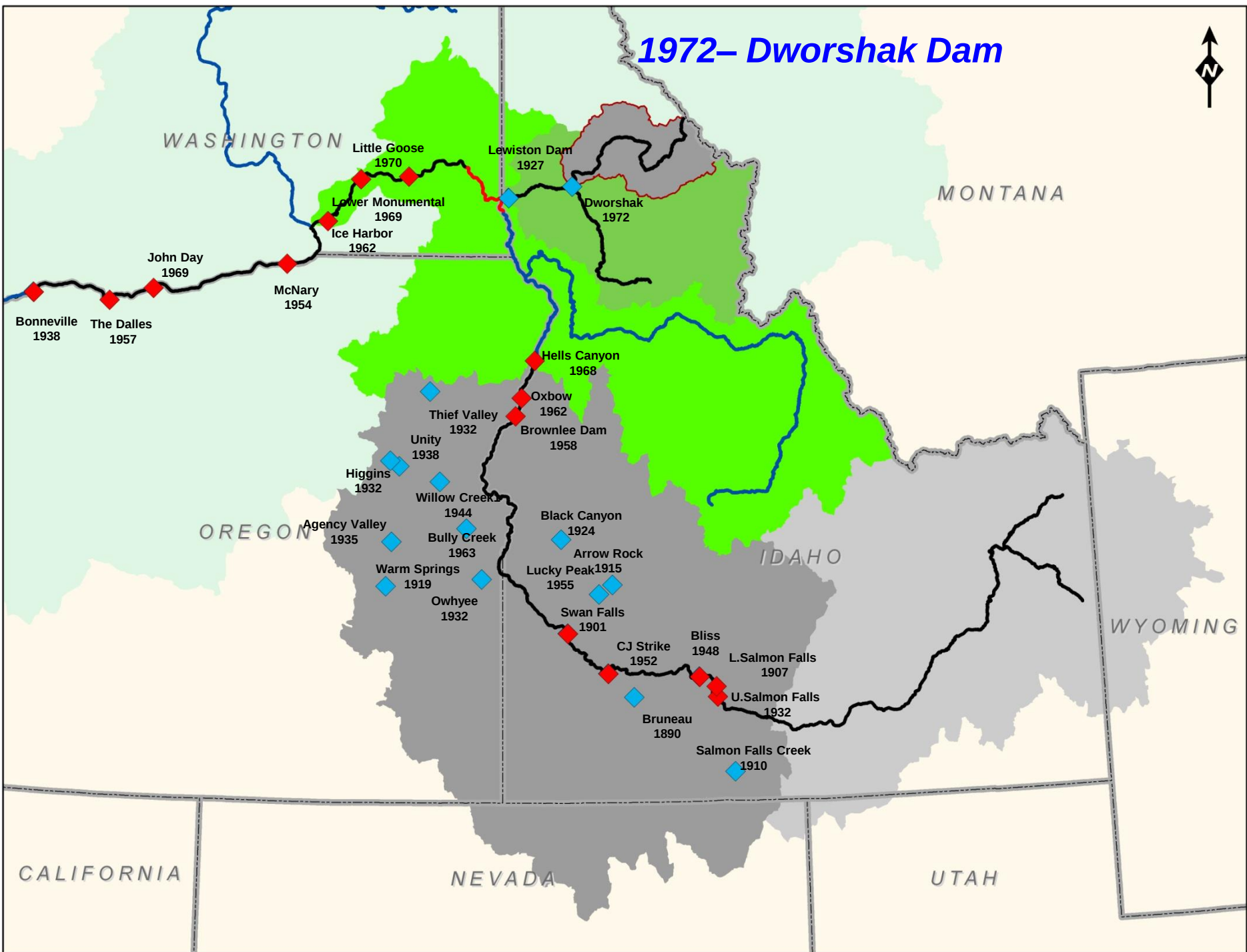
1969 – Lower Monumental Dam – John Day Dam



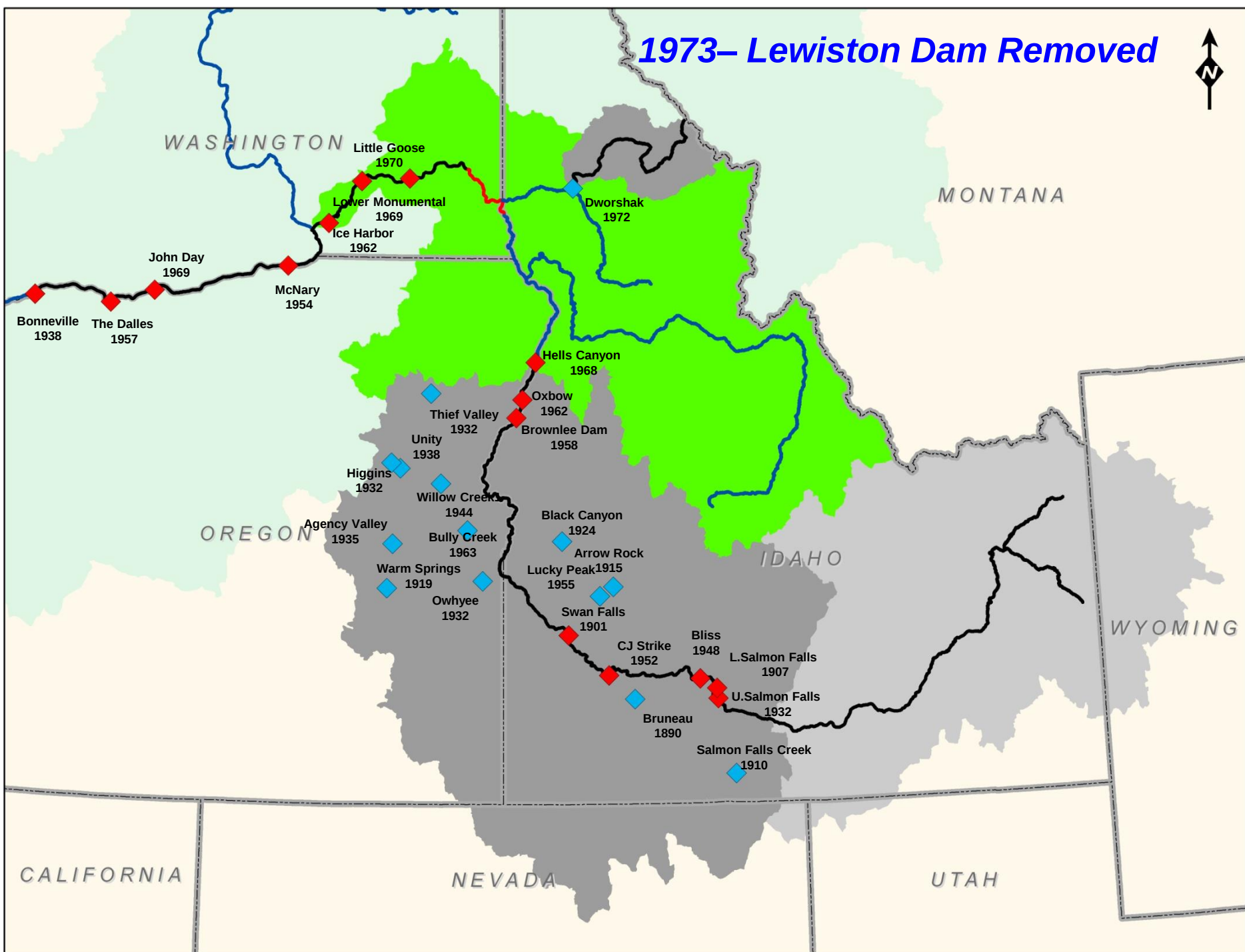
1970 – Little Goose Dam



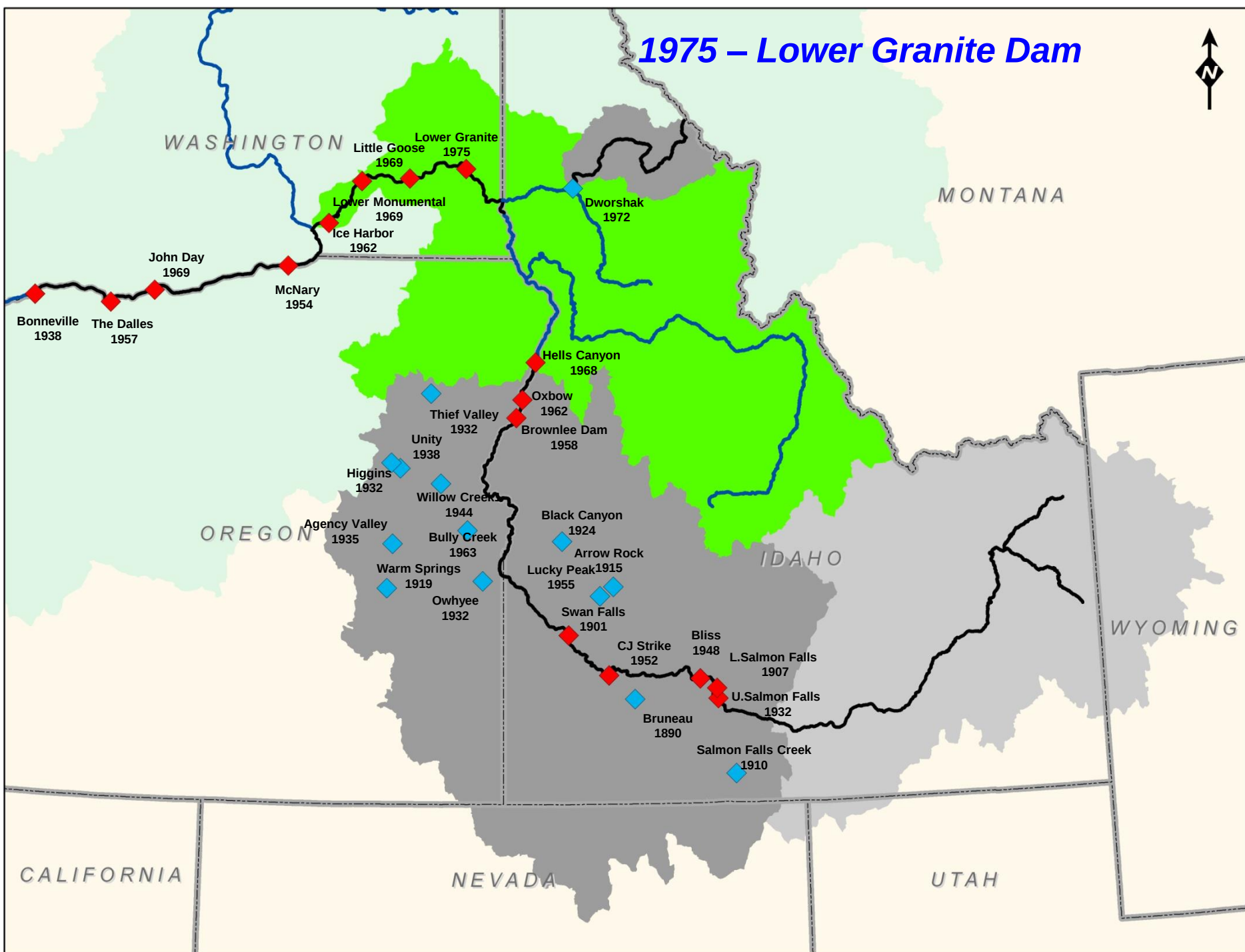
1972– Dworshak Dam



1973– Lewiston Dam Removed



1975 – Lower Granite Dam



Current Anadromous Distribution

