

# **The Powell Map**

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23 July 2024

John Wesley Powell had a profound understanding of the western territories of the United States (US) and he made a strong effort to influence the geographical boundaries of territories and states that were formed in the 19<sup>th</sup> century. Had he been successful with those efforts, our state lines would more closely follow watershed boundaries and the nature of the negotiations for water in the west would be significantly different.

Powell was born in Mount Morris, New York in 1834. Powell's family moved to Ohio then Wisconsin before settling in Illinois in 1851. From an early age he was always interested in history, literature, botany, zoology, and a broad range of natural sciences. In 1852 he became a teacher and attended several colleges but never did receive a degree.

When the Civil War broke out in 1861, Powell enlisted in the Union Army at 27 years old, serving as a first lieutenant topographer, cartographer, and military engineer. On 6 April 1862 at the Battle of Shiloh in Tennessee, Powell was hit with a minié ball in his right arm, and it was amputated by field surgeons at the elbow. After recuperation, he returned to service and was promoted to the rank of Major before the end of the war (Ross, 2018 and Cope, 2019).

After the war, Powell directed much of his interested and energies to the open territories in the western U.S. The one-armed war veteran organized his first expedition to explore the Green and Colorado Rivers that began on 24 May 1869. The expedition was completed on 30 August 1869 when Powell and five other men climbed out of the canyon. Powell's second expedition on the Colorado River extended from 22 May 1871 to 7 September 1872. The second trip offered Powell and his team an opportunity to focus on the collection of scientific data and information that included photographs, detailed maps, and observations that were later used for the development of scientific publications.

He became the second director of the United States Geological Survey (USGS) from 1881 to 1894 (Figure 1). His experiences in the west had huge influences on Powell and he became an ardent advocate for strict water resource conservation policies for the American West's river systems. He saw this as particularly important at the time since most American policy makers in Washington and in the western territories did not want to accept the basic facts regarding the aridity of the west and the limitations of development due to water.

In 1869 at the Montana Constitutional Convention, Powell stated that "All the great values of this territory have ultimately to be measured to you in acre feet.", which was not fully comprehended or incorporated into water policy. Another good example of Powell's prophetic opinions on the management of western water was offered in Los Angeles at the 1893 Irrigation Congress where he stated, "I tell you, gentlemen, you are piling up a heritage of conflict and litigation over water rights, for there is not sufficient water to supply these lands." and that advice was also generally ignored.

In 1891 the USGS published its 11<sup>th</sup> Annual Report (USGS, 1891) that contained several excellent maps. Perhaps the most famous map from that publication is a map of the arid region of the U.S. (Figure 2) and it is commonly referred to as the John Wesley Powell Map. This map defined the arid region of the U.S. extending west of the 100<sup>th</sup> meridian to the Pacific Coast Range. Working in the west today, that line is still a good demarcation opening the arid lands of the western U.S.

He resigned from his duties as the USGS Director in 1894 due to the resistance and heavy opposition to his water resource conservation efforts from western politicians. Dealing with the water resource challenges that we have in the west today, particularly in the Colorado River basin, we can recognize the wisdom and good advice that Powell offered. We can also see the consistency of political operators tending to ignore natural resource facts and limitations. Some things do not change.

Now we are primarily dealing with conflicts regarding Colorado River allocations between the upper and lower basins, consisting of states defined by political boundaries and straight survey lines. We are dealing now with many of the problems that John Wesley Powell was trying to warn people about and possibly prevent or reduce the levels of conflict.

Thus, it is interesting to consider the Powell Map versus the state maps that we have and what those implications might have been. We can at least appreciate his capacity to look ahead and the importance of our being able to do so today.

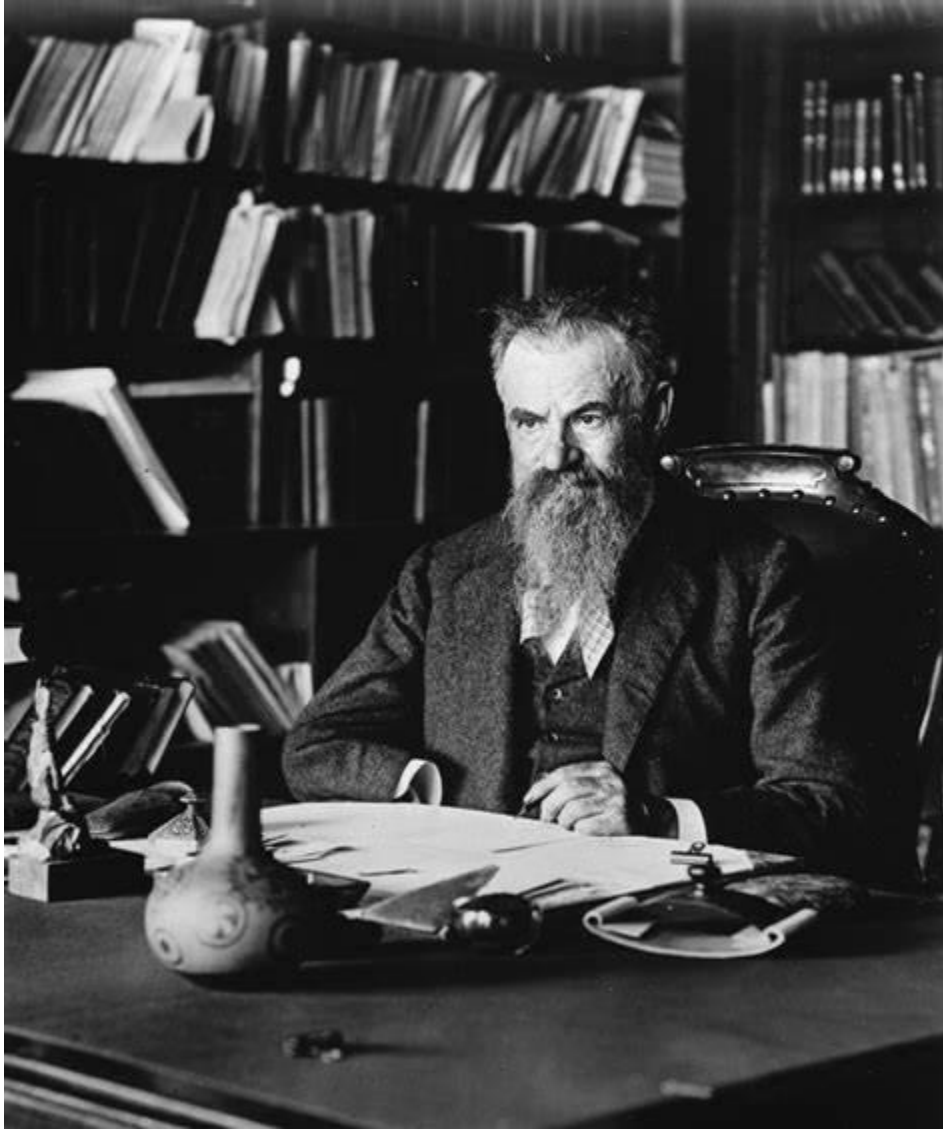


Figure 1. John Wesley Powell at his desk in the USGS office, ca. 1891.

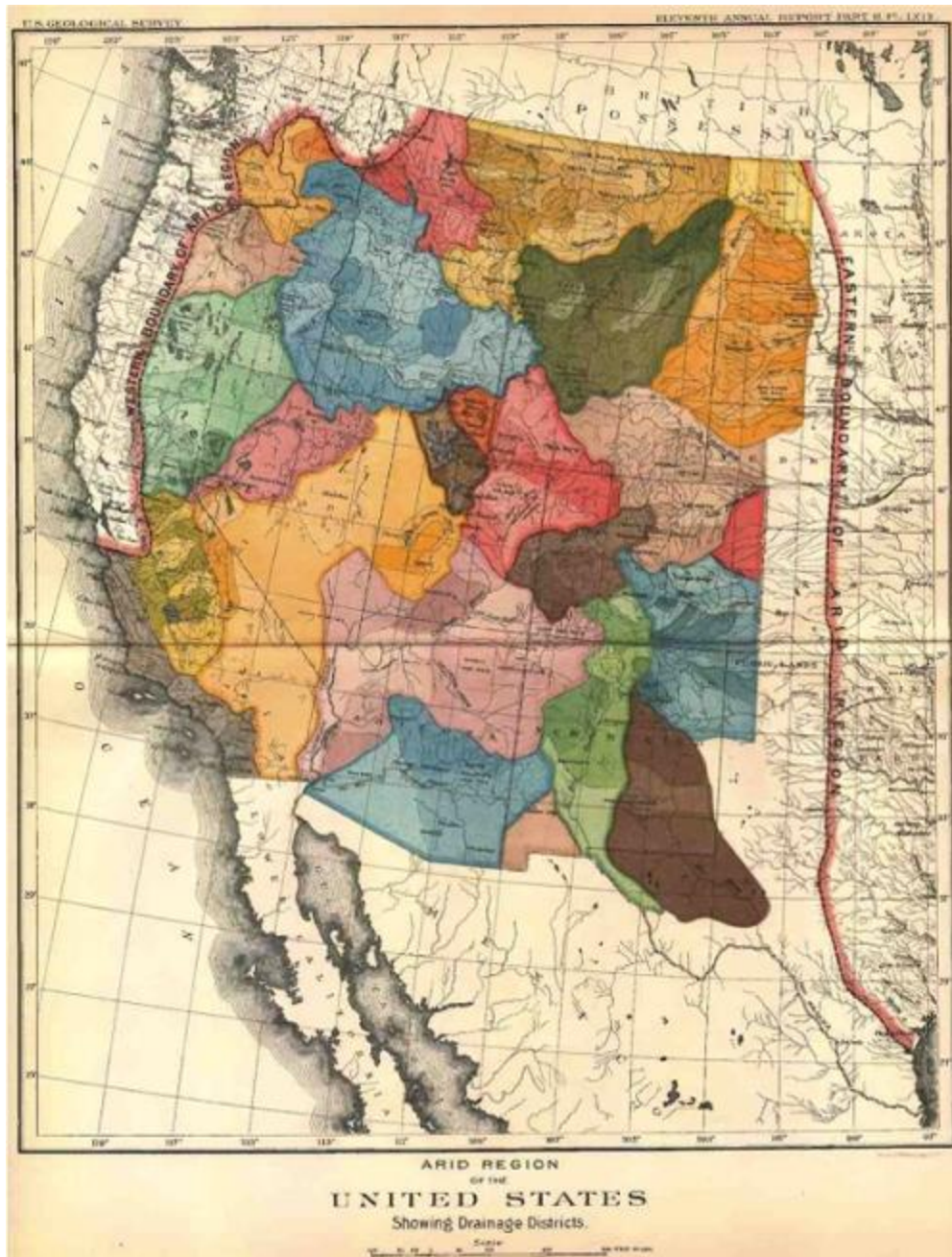


Figure 2. John Wesley Powell's Map of the Arid Region of the United States, published in the Eleventh Ann. USGS Report, Part II, PL LXIX, 1891.

## References

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