Environmental Compliance at Bonneville Power Administration

Final Internship Report Executive Summary
Professional Science Master's in Environmental Science
Oregon State University

By: Lindsey Arotin
June 10, 2021

As we continue to experience the impacts of climate change around the world, reducing greenhouse gas emissions has become paramount. In the United States, the largest source of the most abundant greenhouse gas, carbon dioxide, is generated from energy production. This is why clean renewable energy has become a priority as we shift towards a sustainable future and reduce our global footprint. Of the renewable energy sources, hydroelectric power has been one of the oldest, most reliable, and abundant sources of energy—particularly in the PNW. Hydroelectric power is the foundation of the PNW's power system, providing nearly 50% of the region's energy annually (NPCC, 2019).

The Northwest's biggest hydroelectric power supplier is the Bonneville Power Administration (BPA), a nonprofit self-funded federal agency that operates under the U.S. Department of Energy. BPA is headquartered in Portland, Oregon with a service area that reaches through Idaho, Oregon, Washington, and parts of Montana, California, Nevada, Utah, and Wyoming. BPA provides about one-third of the PNW's electric energy and operates three-fourths of the region's high voltage transmission services (Bpa.gov, n.d.). The primary source of power is generated from hydroelectric dams operated on the Federal Columbia River Power System (FCRPS). Figure 1 below illustrates the Columbia River Basin boundaries, BPA's

service area and transmission line system, and a list of the federal-operated hydroelectric dams, the rivers they are located on, the dates they were built, and map locations (GIS Data, 2021).

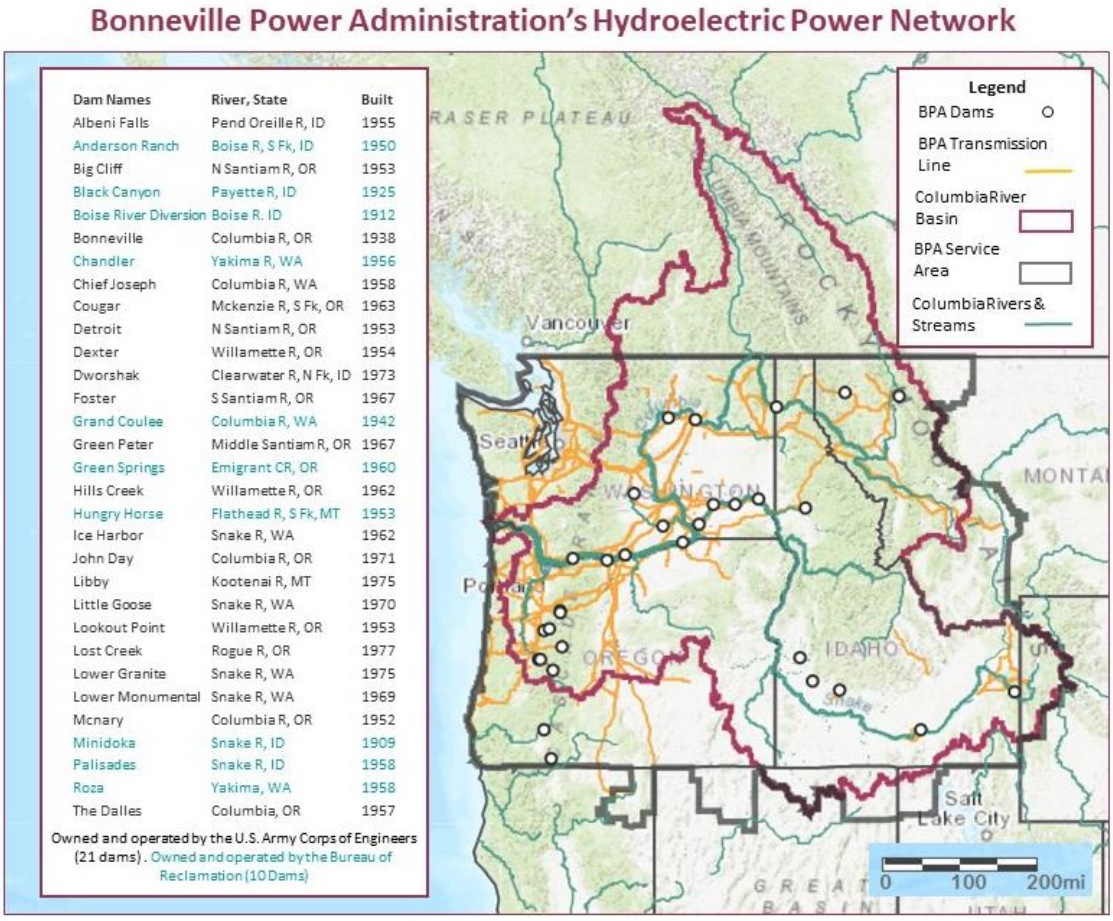

Figure 1: BPA Hydroelectric Power System Map (GIS Data, 2021); Created: May 2021 by: L. Arotin

As part of BPA's legal obligation the Northwest Power Act of 1980, BPA manages and funds the Columbia Basin Fish and Wildlife Program to protect and restore fish and wildlife populations and habitats affected by hydroelectric electric development. The program is carried out by BPA's Environment, Fish and Wildlife organization that is responsible for contracting, coordination, decision making, and environmental compliance. For my final internship report I outlined the process of environmental compliance within BPA's Fish and Wildlife organization and presented a case study of the compliance process (BPA, 2019).

In the final report, I cover many aspects of the Bonneville Power Administration's background, functions, and operations as well as my position as an Environmental Compliance Specialist. To provide context, I recount a brief historical summary of the establishment of BPA, the region, and environmental policy, and I explain the BPA's Environment, Fish, and Wildlife organization, how it functions, and the statutes that structure its operations (BPA, 2019). I provide an overview of BPA's environmental compliance workflow along with a case study of one of my assigned fish and wildlife restoration projects. In the results, I outline the proposed outcome of the case study project and provide a summary of all of the projects I have been assigned during my time with BPA. The complete report includes sections on my internship, BPA as a government organization, to include marketing strategies, finances, and strategic goals. I provide breakdowns of BPA's total revenues and expenses as well as the cost breakdown of the Environment, Fish and Wildlife Program.

As an Environmental Compliance Specialist for BPA's Environment, Fish and Wildlife Program my primary contribution has been to BPA's public service mission and its core values to protect the environment and serve as a steward of the Columbia Basin. Providing accurate analysis and adequate environmental compliance for federal undertakings is crucial to BPA's business operations and prevents losses associated with NEPA violations and lawsuits (BPA, 2019). However, I feel that the specific financial benefit mu position provides is difficult to measure as the benefits of restoring ecological functions of the waterways, protecting endangered fish and wildlife populations, habitat enhancement, and preservation of cultural resources have intangible value. In addition, the indirect impacts of mitigation and environmental restoration efforts are wide-ranging and benefit the quality of life for both humans and the environment, benefits include: improving air and water quality, reducing wildfires,

improving local economies, and preserving culture and natural environment for future generations to experience.

In conclusion, my path towards my master's degree has been less than direct and I have worked full-time throughout. My position at BPA is a full-time permanent position I was selected for towards the end of fulfilling my degree requirements in March 2020. Over the past year with BPA, I have learned more than I could have imagined and I have grown professionally and as a person. I have truly benefited from the PMS Environmental Science program, my time with BPA, and the internship process, and I am fortunate for these opportunities to challenge myself and grow.

Sources

Bpa.gov. (n.d.). *Bpa.gov About Us*. About Us. https://www.bpa.gov/news/AboutUs/Pages/default.aspx#:~:text=BPA%20markets%20wholesale%20electrical%20power,and%20the%20Bureau%20of%20Reclamation.

Bonneville Power Administration—Environment, Fish, and Wildlife. (2019). *FY20-21 Program Plan: Environment, Fish, and Wildlife.* Bpa.gov https://portal.bud.bpa.gov/orgs/BTO/Strategy/FY20ProgPlans/FY20ProgPlans/PgP%20-%20EFW_FY20-21.pdf

GIS Data: Esri, HERE, Garmin, FAO, NOAA, USGS, EPA USDA-NRCS, Pacific Northwest Hydropower Database and Analysis System (Various dates). *BPA Hydroelectric Power System Map.* Osugisci.maps.arcgis.com

Northwest Power and Conservation Council. (2019, January). *Pacific Northwest Hydropower for the 21st Century Power Grid*. Northwest Power and Conservation Council. https://www.nwcouncil.org/energy/energy-topics/hydropower#:~:text=Hydropower%20is%20the%20foundation%20of,meeting%20periods%20of%20peak%20loads).