

Swift No. 1 Dam and Reservoir

The Swift No. 1 Hydroelectric Project is a 240 MW plant owned and operated by PacifiCorp. The project is the furthestmost upstream hydroelectric facility on the North Fork Lewis River, lying directly upstream of the Swift No. 2 Hydroelectric Project, or approximately 45 miles northeast of Portland. Construction of the Swift No. 1 Project began in 1956 and was completed in 1958. The project consists of a main embankment dam, saddle dam, reservoir, penstocks, powerhouse, and transmission line. It is operated in coordination with the other three hydroelectric facilities on the North Fork Lewis River.

Swift Dam is located on the North Fork Lewis River approximately 40 miles upstream from the confluence with the Columbia River and 10.5 miles upstream of Yale Dam. Swift Dam is a an earthen fill embankment type dam with a crest length of 2,100 feet and a height of 512 feet above its lowest foundation point. At the time of its construction, Swift dam was the tallest earthen fill dam in the world. Its overflow spillway, located in the left abutment, has a capacity of 120,000 cfs by utilizing two 50 foot by 51 foot taintor gates with the reservoir at elevation 1,000 ft msl. The elevation at the top of the taintor gates is 1,001.6-ft msl.

The reservoir formed by Swift Dam is approximately 11.5 miles long with a surface area of approximately 4,680 acres at elevation 1,000-ft msl (full pool). At maximum pool, the reservoir has a gross storage capacity of approximately 755,000 acre-ft. At the minimum pool elevation of 878-ft msl, the reservoir has a capacity of approximately 447,000 acre-ft.

Swift No. 2 Hydroelectric Project

The Swift No. 2 Hydroelectric Project is a 70 MW plant owned by Cowlitz PUD and, under contract, is operated and maintained by PacifiCorp. The project lies between the Swift No. 1 and Yale hydroelectric projects. The Swift No. 2 Powerhouse is located 3.2 miles downstream of the Swift No. 1 Powerhouse. Construction of the Swift No. 2 Project began in 1956 and was completed in 1958. The project consists of a power canal, penstocks, powerhouse, and transmission line. It is operated in coordination with the other three hydroelectric facilities on the North Fork Lewis River.

7.2 Terrestrial Resources

Basin lands provide winter range for deer and elk; mink and beaver are

common in wetlands. Large numbers of amphibians have been observed in the basin, primarily in wetland and riparian/riverine habitats. Over 100 species of birds have also been observed, including waterfowl, raptors, and numerous species of passerines. More information regarding terrestrial resources may be found in the supporting BA (Attachment A) and BO (Attachment C).

Affected Environment

Terrestrial resources associated with the four Lewis River Projects include wildlife comprised of plant communities, unique land forms, and a compliment of mammals, birds, amphibians, and reptiles.

Vegetation

Vegetation cover in the Lewis River basin is predominantly managed second-growth Douglas-fir forests and mixed conifer-hardwood forests typical of the Cascade region of Washington (Franklin and Dyrness 1988). Forest resource inventories conducted on PacifiCorp-owned lands for the Yale and Merwin projects identified 7,340 acres of upland forest and provided information on associated species, volume, site class, and overstory crown closure (Hildreth 1995). The upland forests consist of conifer, mixed conifer/hardwood forest, and hardwood forest. A unique lodgepole pine community occurs in the old lava flow in the Mount St. Helens area. Non-forest cover types include meadows, wetlands, transmission line right-of-way (ROW) and other project facilities, shrub-dominated communities, and a small portion of the lava flow area. Detailed maps of vegetation cover types were produced for relicensing the Yale Project; these are included in the license application and Terrestrial Resource FTR (PacifiCorp 1999). Wetlands in the project area occur in the vicinity of the Yale Project, Frazier Creek, the upper end of Lake Merwin and Yale Dam and along the transmission line ROW (PacifiCorp 1996b). Wetlands have been identified around Swift Dam (EDAW 2000).

Other sensitive habitats include caves, oak woodlands, old-growth forest stands, riparian areas, snag-rich forest stands, cliff/talus, meadows, and deer/elk winter range are present in the project vicinity (WDFW 1998). Functional riparian habitat in the project vicinity is present only at the upper end of Swift Reservoir, along the Swift bypass reach, and Lake Merwin. Other riparian habitat is primarily associated with the Lewis River downstream of Merwin Dam and with

tributary streams, including Drift, Siouxon, Speelyai, Cougar, Canyon, Cresap, Rock, and Buncomb Hollow creeks.

A number of threatened, endangered, and sensitive (TES) plant species potentially occur in the vicinity of the projects. Only one TES plant, the green-fruited sedge, was identified in surveys conducted for the Yale Project (PacifiCorp 1999).

Wildlife

Wildlife species in the Lewis River basin are representative of southwest Washington and include a number of TES and state priority species (WDFW 1991) including nesting osprey and wintering and nesting bald eagles along the Lewis River and project reservoirs and northern spotted owls on Washington Department of Natural Resources (DNR) lands within 0.5 mile of the Lewis River Projects. No spotted owl nests have been documented in the old-growth conifer habitat on PacifiCorp lands.

Environmental Impacts

Improving watershed conditions by purchasing conservation easements will provide direct and substantial benefits for wildlife and terrestrial species. Riparian areas are very productive biological areas for such species, providing important areas of food production, as well as cover areas for resting, watering, and feeding wildlife (Knutson and Naef 1997). Conservation easements also provide undisturbed areas where sensitive plant species may colonize and proliferate. Improving aquatic habitat conditions as proposed will also provide indirect benefits for various bird species including bald eagles, osprey, and other birds of prey that rely on aquatic species for food sources. Further, the Proposed Action will require compliance with the BO (Attachment C), and its associated incidental take statement, issued by NMFS and USFWS designed to protect and enhance TES and their associated habitats resulting in improvements in terrestrial resources relative to the No Action alternative.

7.3 Aquatic Resources

More information regarding aquatic resources may be found in the supporting BA (Attachment A) and BO (Attachment C).

Affected Environment

The Lewis River supports a variety of aquatic organisms. Merwin Dam, located approximately 21 miles upriver from the mouth of the Lewis River, is a barrier to upstream migration. The river