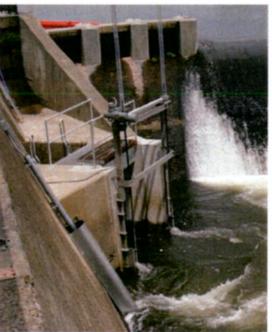


Fairmount Dam Fishway Facility



History

The Schuylkill River is the largest tributary of the Delaware River Basin, and approximately 198 kilometers in length from its start in Pottsville to its entry into the Delaware River in Philadelphia. The Fairmount Dam, a municipally-owned facility, was built in 1820 to help provide safe and potable drinking water to the city of Philadelphia. However, in its over 150-year history, the dam has decreased the population of American shad, as well as other fish of the Schuylkill River that migrate upriver from the sea to breed in fresh water.

In 1979, with funding from the City of Philadelphia, United States Fish and Wildlife Service (USFWS) and the Pennsylvania Fish and Boat Commission, a vertical slot fish passage on the west side of the dam was constructed to aid in revitalizing the underwater ecology of that stretch of the Schuylkill, specifically for American shad and river herring. Even with this new construction, the populations of these fish did not rise as expected. Because of this failure, the fishway began to deteriorate due to lack of active maintenance or monitoring by 1984.

Between 1984 and 2004, there were no fish counts performed at the Fairmount Dam, as the efforts for fishways had moved on to the Lehigh River, another tributary to the Delaware River. In 2004, the Philadelphia Water Department took over responsibility for the monitoring, maintenance and operation of the fishway, having developed a digital video system to observe the species and volume of fish using the passage.

Improvements

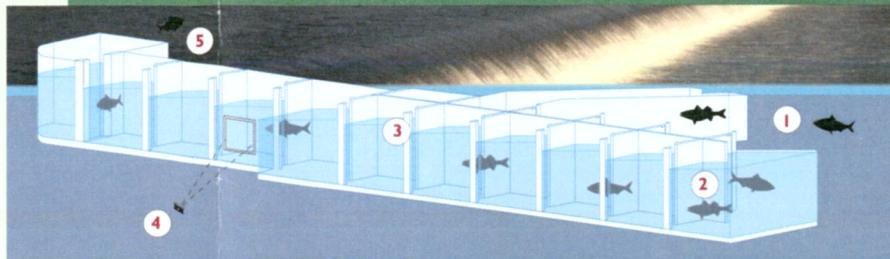
The renovation project, a multi-agency effort led by the U.S. Army Corps of Engineers and PWD, has brought many improvements to the overall condition of the fishway as well as to its performance. Before the project, security fences surrounding the fishway had been damaged, which was not only unsightly but allowed trespassers access to the fishway. Finally, stormwater and regular erosion had flooded an underground storage and viewing room. The electrical power in the room was inoperable, making the real-time camera of the fish passing through the fishway useless.

When the project was finished, the fishway itself was completely renovated, with new chambers, entrances and exits and an attraction flow that

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1. A fish following its instinct to swim upstream in the Schuylkill River encounters the turbulent water of the Fairmount Dam's spillway. A current of water, produced by the fishway, flows into the river from the fishway entrance, serving as a guide for the fish, and attracting them to swim through the entrance into the first chamber.

How the Fishway Works



2. The water, pouring through the slots connecting each chamber, guides the fish through the fishway. The water levels, in each chamber, are slightly higher than the chamber before it, allowing the fish to gradually bypass the dam. Additional chambers were added to the fishway, decreasing the effort required by the fish to swim from one chamber to the next.

3. The slots between adjacent chambers maintain the varied water levels throughout the fishway. The slots were widened to ease the passage of fish through the fishway.

4. Live images are captured by a camera through a window in one chamber of the fishway, which are then transmitted to the web and to the Fairmount Water Works Interpretive Center across the river. The live camera feed can be accessed at www.fairmountwaterworks.org.

5. Fish exit the fishway through the gate and swim into the waters beyond the Fairmount Dam.

steers migrating fish towards the fishway. The fences and surrounding area of the fishway have been cleared, cleaned and made more aesthetically pleasing for visitors.

The underground viewing room has also been renovated, with waterproofing to avoid flooding, and with a direct video feed to the Fairmount Water Works Interpretive Center and the Philadelphia Zoo. The feed will show all of the fish species travelling upstream during peak season. Finally, the Philadelphia Water Department and other agencies and organizations will use the fishway for a greater amount of educational and community outreach opportunities. Included in the renovation is an outdoor amphitheater, where additional PWD educational programs will take place including instruction by trained fishery biologists.

Benefits

The restoration of the Fairmount Dam fishway is important because it is the furthest downstream passage of the Delaware River Basin. This means that the water of this passageway flows most directly into the ocean, allowing any fish that travel upstream to spawn a direct passage to their spawning areas. American shad, the main target of the fishway, are a fish that spawn genetically, meaning that a population of shad will spawn at the same area for numerous generations. Eliminating any impediments to the Schuylkill drainage will benefit the population growth of American shad and any other fish that inhabit the Schuylkill.



PWD's outdoor classroom at the Fairmount Dam Fishway Facility brings students of all ages right next to the river for a variety of educational programs.



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