Ryerson Station State Park

Stream and Floodplain Restoration

Challenge

North Fork Dunkard Fork (NFDF) is a stream that flows approximately 9,200 feet through Ryerson Station State Park and is designated as a trout stocked fishery. This stream was inundated under the 62-acre Duke Lake until the dam was lowered in 2005. Following the lowering of the dam, the NFDF stream channel became highly unstable as a result of years of accumulated sediment in the former lake bottom. Portions of the park and stream system have also been compromised by subsidence of the ground surface due to underground longwall mining which has caused landslides and severe erosion. To date, banks of 5 to 6 feet in height and bank failures are common along the channel and tributaries of NFDF. Because of this channel instability, large accumulations of fine sediment and excessive nutrients (i.e. nitrogen and phosphorus) contained within the soil are introduced into the stream channel, which lowers water quality, destroys aquatic habitat within the park and downstream, and hinders recreation.

Solution

LandStudies, partnered with Murphy and Dittenhafer, Inc. and YSM Landscape Architects, LLC, completed a feasibility study, evaluation of alternatives and conceptual design to restore and stabilize the stream, floodplain and riparian ecology. This restoration planning was integrated into a re-visioning of the circulation system and recreational offerings to enable the park to best achieve its overall goals and objectives. The next phase of the project involves preliminary design, engineering and hydraulic modelling for review by DCNR and other stakeholders to enable further refinements before finalizing the design and commencing construction.

Services

Feasibility Study | Design | Engineering

Overview of former Duke Lake after the dam was lowered

Streambank Assessment

Client:	PA DCNR
Location:	Greene County, PA

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