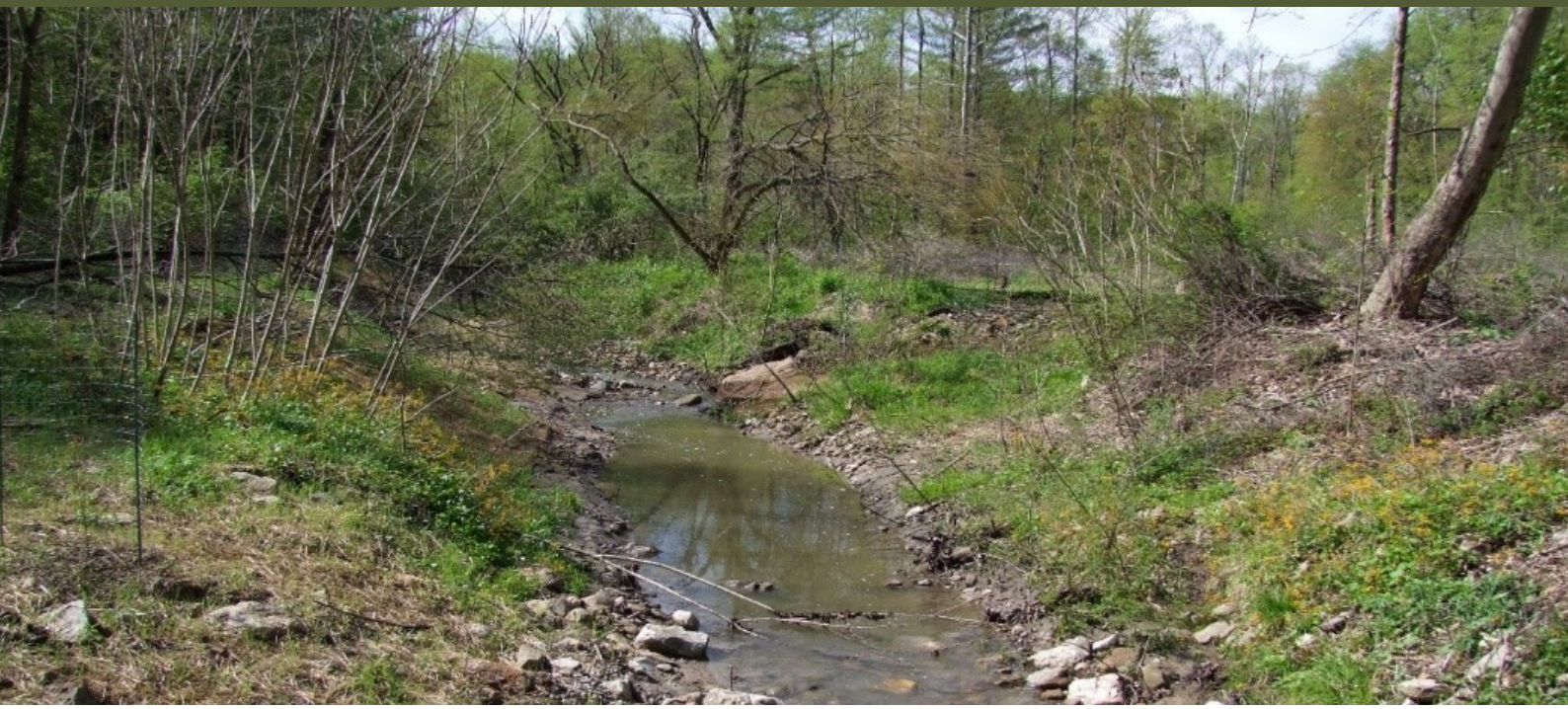
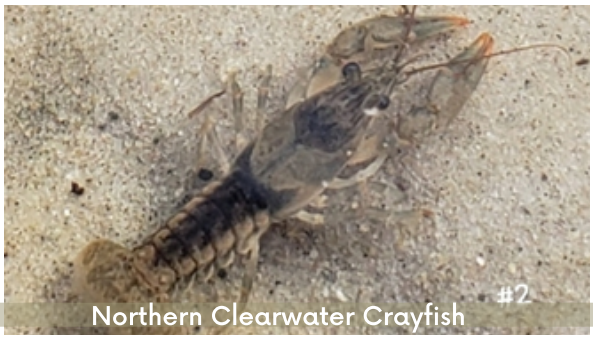
12474 HEATH RD, CHESTERLAND, OH 44026



Southern Red Belly Dace



Northern Clearwater Crayfish

Redside Dace

SUNNYBROOK PRESERVE

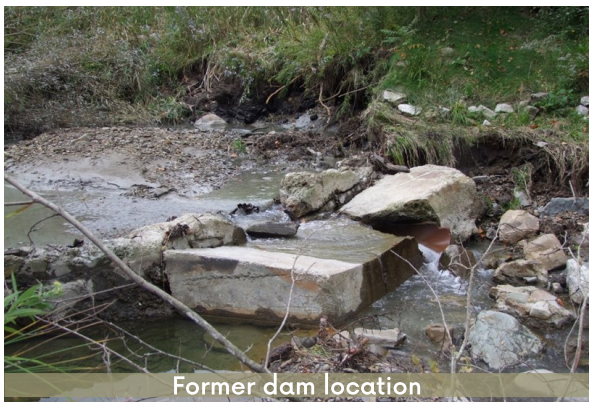
STREAMBANK STABILIZATION AND RIPARIAN RESTORATION

In 2019, Chagrin River Watershed Partners (CRWP) assisted Geauga Park District with successfully applying for a $120,000 Ohio EPA 319 grant to partially fund this restoration project. Geauga Park District hired the design-build team of EnviroScience, GPD Group, and River Reach Construction to improve the habitat at this site. CRWP helped with grant administration and project outreach and education.

The restoration approach combined enhancement of aquatic habitat, treatment of invasive plants, revegetation, and streambank stabilization using woody vegetation, branch layering, regrading to a gentler slope, and stacked rock. Five hundred linear feet of stream was improved through this effort. Two acres of wetland and riparian forest were enhanced by planting native vegetation and removing invasive species. The design-build team used a raise-grade approach to build up the riffles to reattach the stream to its floodplain. In some areas, excavation was used to create a new floodplain bench. Buried rock vanes were used to guard against future channel incision or migration around riffles. Good floodplain connection dissipates energy and provides flood storage, which helps to decrease downstream flooding and erosion. Restoration work occurred fall 2020 through spring 2021.

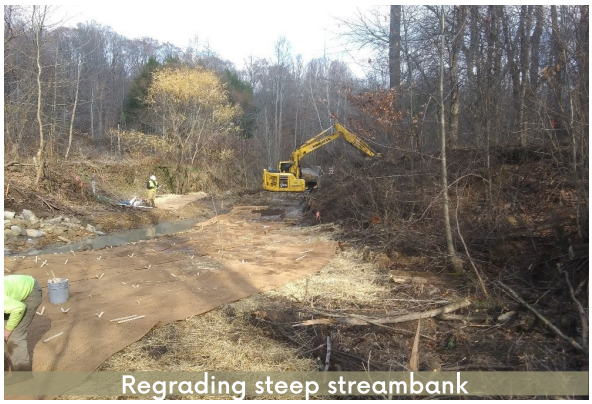
This project was financed in part or totally through a grant from the State of Ohio Environmental Protection Agency and the United States Environmental Protection Agency, under the provisions of Section 319(h) of the Clean Water Act.

Eroding streambanks have been stabilized and in-stream habitat has been improved



Former dam location

Eroding streambank pre-restoration



Regrading steep streambank

Need for Restoration: During the early twentieth century, a log dam was installed at Sunnybrook within the restoration area to form a swimming hole. In 1934 the log dam was replaced with a concrete dam. The concrete dam was soon undermined and the pond disappeared overnight in late the 1930s. Remnants of the dam remained in 2020, and the stream suffered from erosion and siltation. Before restoration, riparian wetlands were infested with the nonnative invasive plant species of common reed (*Phragamites australis*), reed canary grass (*Phalaris arundinacea*), and European black alder (*Alnus glutinosa*). If unaddressed, invasive nonnative plant communities outcompete native plants and decrease biodiversity.

About Sunnybrook: Sunnybrook is a coldwater stream in the headwaters of the East Branch of the Chagrin River watershed. Sensitive fish species such as redside dace (*Clinostomus elongatus*) and southern redbelly dace (*Chrosomus erythrogaster*) and rare species such as the northern clearwater crayfish (*Faxonius propinquus*) inhabit Sunnybrook. Coldwater streams are fed by cold groundwater. The shade from streamside trees helps keep the water cold. Letting rainwater soak in close to where it lands using downspout disconnection, rain gardens, or permeable pavement also helps to recharge groundwater and protect coldwater habitat streams.

GEAUGA PARK DISTRICT

CHAGRIN RIVER WATERSHED PARTNERS

Ohio Environmental Protection Agency

EPA United States Environmental Protection Agency

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