

Twentymile Creek NHA



Twentymile Creek is the largest tributary to Lake Erie in Pennsylvania east of the city of Erie. Twentymile Creek is dominated by riffle-run-pool habitat, the bottom of the stream includes shale with vertical, perpendicular fractures, as well as sections of cobble substrate, and several small but relatively remote waterfalls and plunge pools. The Pennsylvania DEP lists the stream as a coldwater fishery. It is stocked annually with steelhead and trout by the Pennsylvania Fish and Boat Commission.



Christopher Tracey, PNHP

A small waterfall along Twentymile Creek.

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name	PNHP Rank ¹		PA Legal		Last Seen	Quality ²
	Global	State	Status ¹			
Scotia sallfly (<i>Alloperla vostoki</i>), a stonefly		G3	S3	N	2010-06-02	E
Torrey's rush (<i>Juncus torreyi</i>)		G5	S3	PT	1997-08-30	E
Sensitive species of concern ³	S	---	---	---	2003	E

1 = Please refer to the PNHP website (<http://www.naturalheritage.state.pa.us/RankStatusDef.aspx>) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

2 = Please refer to the NatureServe website (<http://www.natureserve.org/explorer/eorankguide.htm>) for an explanation of quality ranks.

3 = This species is not named by request of the jurisdictional agency responsible for its protection.

The **Scotia sallfly** (*Alloperla vostoki*) is a globally rare species of stonefly whose nymphs live in the creek. This site also supports a **species of concern** that cannot be named here at the request of the jurisdictional agency overseeing its protection. The species relies on good water quality.

Threats and Stresses

A reduction in water quality is the greatest threat to the Twentymile Creek NHA. It is currently designated a cold water fishery by the DEP. Maintaining suitable aquatic habitat is key to the continued success of the species of concern.

Specific threats and stresses to the elements present within this site include the following:

- Runoff from dirt and gravel roads in close proximity to waterways can contribute to physical degradation of their channels and erosion and sediment pollution in streams and rivers. Stoneflies rely on good water quality, although the tolerances of individual species to different types of pollution are not well-understood. Siltation and contaminants such as heavy metals and pesticides are potential threats to the Scotia sallfly.
- Loss of forest cover within the core areas may also result in increased water temperatures and disruption of natural nutrient cycling linked to the river. If forest cover is substantially reduced within the watersheds, water quality is likely to decline from increased sediment loads. Removal of forest cover on steep slopes is especially problematic because of the potential for increased runoff and erosion following storm events.

- The round goby (*Neogobius melanostomus*), an exotic invasive species, is a potential threat to the aquatic ecosystem of Twentymile Creek. The round goby (*Neogobius melanostomus*) has successfully colonized Lake Erie, where it appears to be out-competing and possibly displacing native fish species. As the round goby moves into the lake's tributary streams it could further jeopardize native species. Phillips *et al.* (2003) found that the goby was feeding exclusively on aquatic insects, and considered the fish a threat to native fish species in Pennsylvania tributary streams. They also noted that the round goby accounted for 30% of the total fish count, but had moved only 0.4 miles (0.7 km) upstream, where a waterfall impeded further passage.

Conservation Recommendations

Most of the Twentymile Creek watershed is in New York State and joint efforts across state lines are necessary in order to effectively address management of the stream.

The following steps are recommended to ensure the persistence of these species at this site:

- Conserve and expand the forested riparian buffers of Twentymile Creek and its tributaries. Streams through forested areas should be considered high priority for conservation. The forested riparian corridor helps to regulate the temperature of the stream and creates streamside conditions that contribute to improved water quality and aquatic habitat. Streams through non-forested areas should be restored with native trees and shrubs appropriate to the habitat. Establish at least a 100 foot (30 meter) buffer of woody vegetation along the creek and its tributaries to help reduce erosion, sedimentation, and pollution.
- Best management practices (BMPs) that focus on limiting the introduction of non-point sources of pollution into surface and groundwater should be applied to the surrounding area (Pyron *et al.* 2004).
- Avoid using pesticides within the boundaries of this site.

Location and Additional Information

Municipalities: *North East Township*

USGS quads: *North East, North East OE N*

1993 Erie CNHI reference: *None*

Associated NHAs: *Twenty Mile Creek Gorge, Twenty Mile Creek Beach*

Overlapping Protected Lands: *North East Township Community Conservation Park*

PNHP Significance Rank: *State*

References

Phillips, E. C., Washek, M. E., Hertel, A. W., and Niebel, B. M. 2003 The Round Goby (*Neogobius melanostomus*) in Pennsylvania Tributary Streams of Lake Erie. *Journal of Great Lakes Research* 29:34-40.

Pyron, Mark, Renea A. Ruffing, and Angela L. Lambert. 2004. Assessment of Fishes of the Presque Isle Bay Watershed, Erie, PA. *Northeastern Naturalist* 11:261-272



Twenty Mile Creek Natural Heritage Area

This forested stretch of Twenty Mile Creek supports populations of three species of concern and includes a River Bluff Seep natural community, critically imperiled in PA.

Significance Rank:
STATE



Pennsylvania Natural Heritage Areas

- Core Habitat
- Other Core Habitat
- Supporting Landscape
- Other Supporting Landscape
- Conservation Lands