

Classification of Several Streams
Near Seneca, Wisconsin

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Western District Water Resources Management

Streams in the vicinity of Seneca, Crawford County, were last classified by Water Resources Management in 1977. The 1977 effort included one drainage path to Halls Branch and one to South Branch Copper Creek. This report re-evaluates those classifications and includes several additional drainage paths in the Seneca area.

Regional Hydrology:

Based on a review of USGS 7.5 minute topographic maps, the 1977 classification and further on-site examinations on 9-10-91, a map of continuous flowing streams was prepared (attached). Continuously flowing streams are indicated in red. Three alternative POTW sites are also indicated on the map, as are sites where flow measurements were made on 9-10-91.

A review of six POTWs which discharge to dry runs at high elevations in the unglaciated portions of La Crosse and Vernon counties found seepage to groundwater to range between 0.001-0.038 mgd per 1000 linear feet of drainageway. Based on this data, it was estimated that a discharge of 0.021 mgd to a dry run in the vicinity of Seneca would completely seep to groundwater within one mile. This means a discharge would have to be within one mile of a continuously flowing surface water to have a direct effect on it. This one mile "influence zone" is indicated in blue on the attached map.

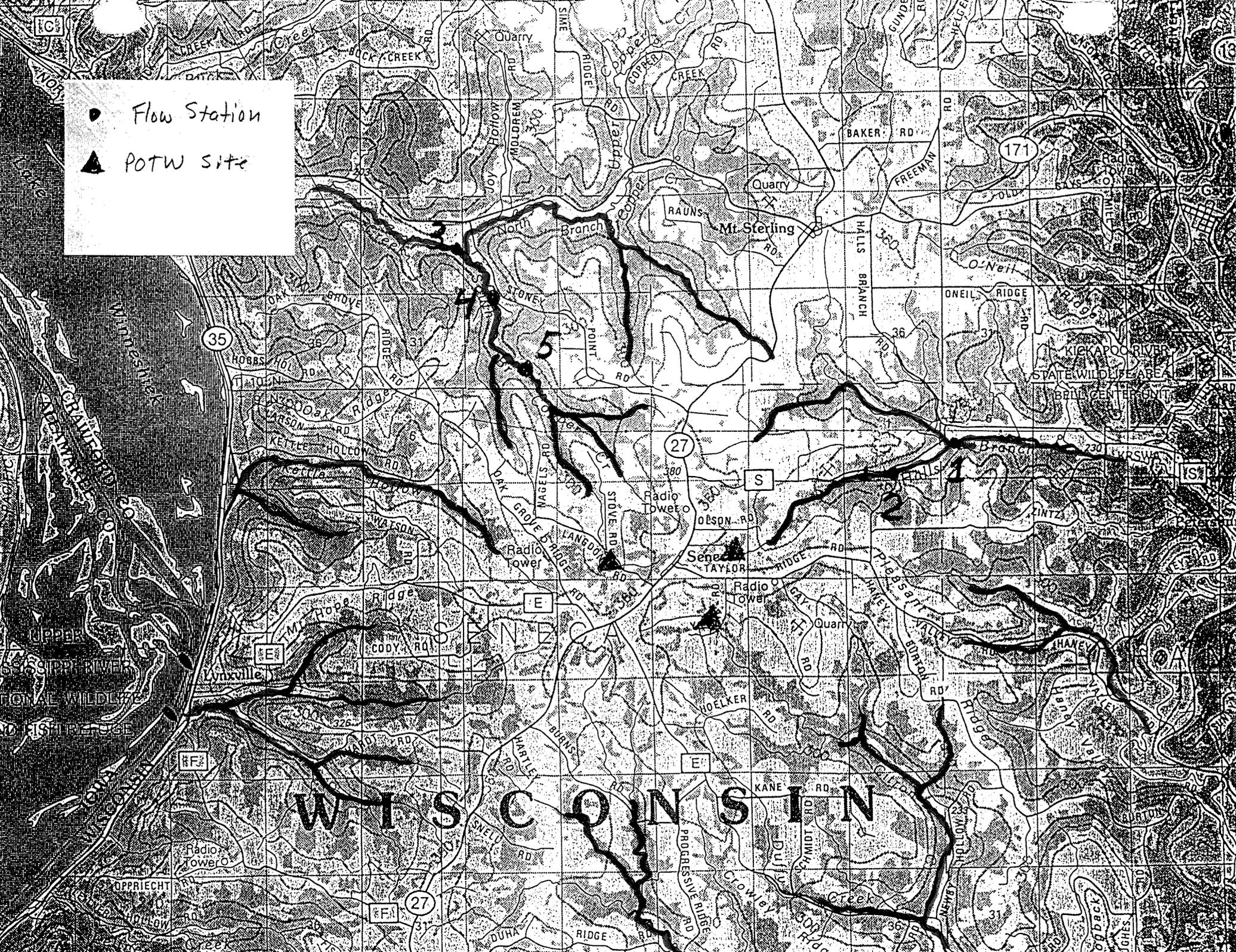
Observed Conditions:

The September 1991 field examination concentrated on the South Branch Copper Creek, Halls Branch, and a headwater tributary (Creek 6-10) to Halls Branch. The previous WRM stream classification, the 1980 DNR trout book, and the 1972 DNR Surface Water Inventory of Crawford County, are all in agreement that Halls Branch is a Class II trout stream and Creek 6-10 is a forage fishery.

On 9-10-91, the flow in Halls Branch just below its confluence with Creek 6-10 was 2.43 cfs. Halls Branch had approximately 45 percent of the channel covered with heavy growth of filamentous algae, smartweed, watercress, and Potamogeton sp. Heavy deposits of silt were present on the vegetation and the gravel substrate.

Creek 6-10 had a flow of 0.11 cfs one-half mile above its mouth. The creek was braided through limestone rubble and boulders. Very little sedimentation had occurred, even in the small pools present. Filamentous algae, watercress, and duckweeds covered most of the stream. Minnows were in the stream, as well as horses. Pasturing is a common riparian land use.

● Flow Station
▲ POTW site



SENECA, CRAWFORD COUNTY

WASTEWATER RECEIVING STREAM CLASSIFICATION

Receiving stream

Alternate 1 - proposed discharge to Seneca tributary (Creek 6-10) of Halls Branch Creek.

Alternate 2 - proposed discharge to Seneca tributary of South Branch Copper Creek.

Alternate I

The headwaters of the Seneca tributary (Creek 6-10) to Halls Branch Creek is located in the middle of SE 1/4 of section 10, T9N, R5W. Flow from the headwaters is east through sections 11, 2, 1 and 6 in that order. Creek 6-10 joins Halls Branch Creek in SW 1/4 of section 6.

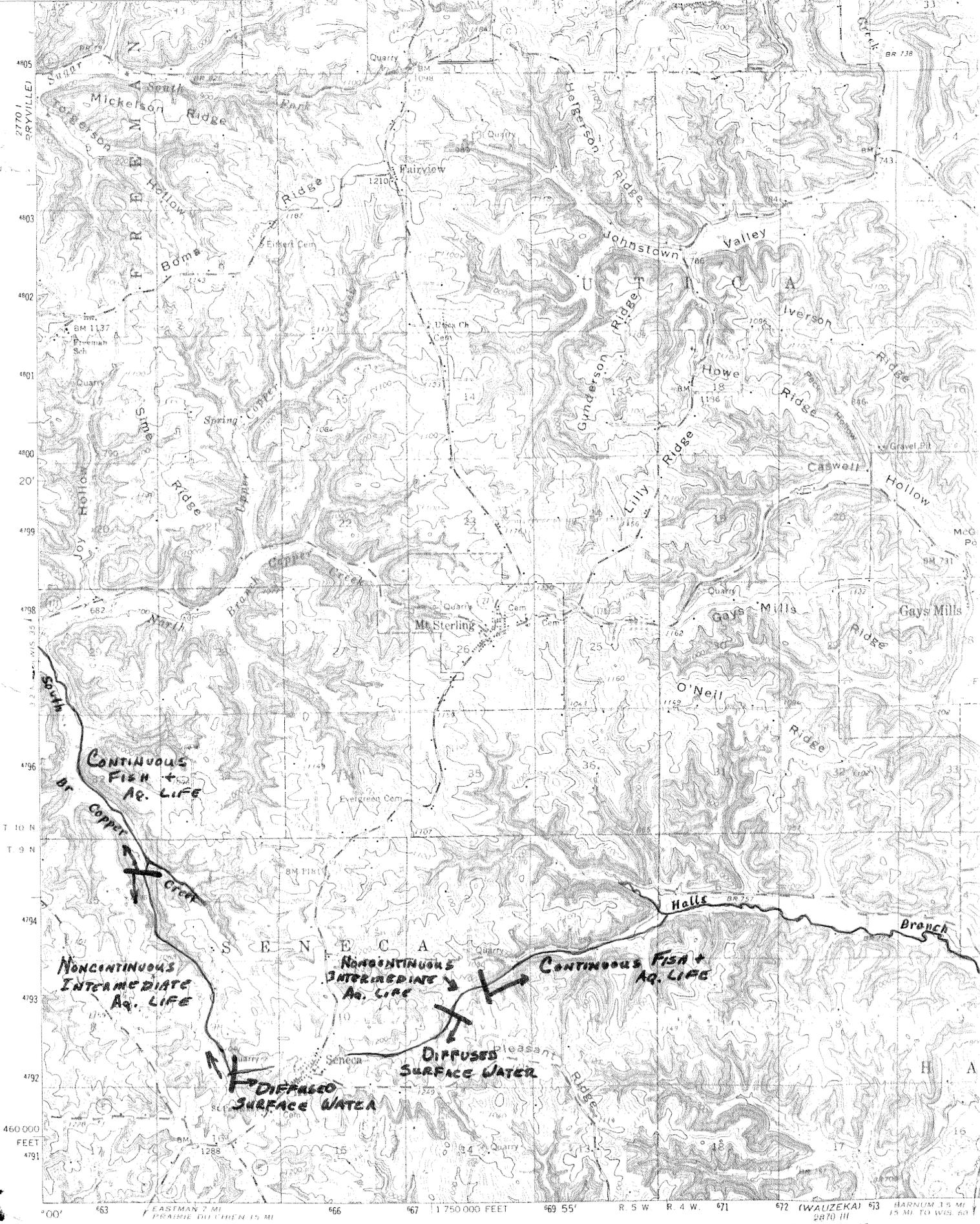
Land use at the headwaters and downstream 1/2 mile into section 11 is wooded along steeper grades and agricultural on low grade contours. From contour 970 downstream to contour 920 in section 11 flow is intermittent. Stream banks here are lightly pastured the main vegetation being natural with grasses, shrubs, and trees. Downstream beyond contour 920 flow becomes continuous. Flow increases from approximately 0.1 CFS below contour 920 to about 1.0 CFS at the confluence with Halls Branch Creek. Biota along this stretch include caddis fly larvae, mayfly nymphs, midge larvae, simuliid larvae, leeches, planaria, snails, minnows (2-3 inch) and algae.

Halls Branch Creek is currently classified a Class II trout stream whereas Creek 6-10 is a forage species stream.

Alternate II

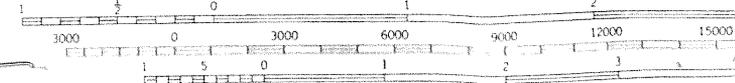
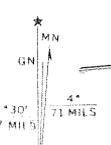
Seneca could also discharge to a tributary stream of South Branch Copper Creek. The headwaters area of the tributary is located in N 1/2 of section 16, T9N, R5W. Flow is north through sections 9, 4 and 5 in that order. The confluence with South Branch Copper Creek is in NE 1/4, NE 1/4, section 5.

Seneca tributary to South Branch Copper Creek in S 1/2, SE 1/4, section 9 includes forested and cropland drainage area flowing west to a town road. From the town road drainage is northward and intermittent to the 800 foot contour in SE 1/4, NE 1/4, section 5 where flow has increased to about 0.1 CFS. The stream maintains a well defined bank and bed throughout this area. Adjacent land is wooded along steep grades with grass and shrubs along lower gradients. Beyond contour 800 stream flow is continuous.



Mapped, edited, and published by the Geological Survey in cooperation with the Wisconsin Highway Commission and Wisconsin Geological and Natural History Survey
 Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1965. Field checked 1966
 Supersedes map dated 1924



CONTOUR INTERVAL 20 FEET
 DATUM IS MEAN SEA LEVEL

U. CHIEN

All of South Branch Copper Creek and tributaries thereof have been designated Class II trout streams. The area fish manager regards waters of the Copper Creek drainage basin as being of higher quality than those of Halls Branch Creek.



Confluence Seneca tributary with Halls Branch Creek, Section 6, looking west



Seneca tributary at middle of west $\frac{1}{2}$ Section 11 looking ENE



Seneca tributary overlooking drainage area in Section 11, looking south

Seneca tributary to Copper Creek
looking south (upstream) Sec. 9

Diffused surface water drainage area
tributary to Seneca tributary of
Copper Creek looking east from
town road, Section 9



Recommendations:

Creek 6-10 from the headwaters area east of Seneca downstream about one mile to the 970 foot contour in section 11 shall be classified diffused surface water. From that point downstream approximately 1/3 mile to contour 920 in section 11 shall be classified noncontinuous, intermediate aquatic life. Classification from contour 920 to Halls Branch Creek shall be continuous, fish and aquatic life. Halls Branch Creek is a Class II trout stream.

The tributary stream to South Branch Copper Creek shall be classified diffused surface water from its headwater in S 1/2, SE 1/4, section 9 downstream 1/2 mile to the town road in section 9. From that point the classification becomes noncontinuous, intermediate aquatic life downstream two miles to the 800 foot contour in SE 1/4, NE 1/4, section 5. The classification beyond that point shall be continuous, fish and aquatic life. South Branch Copper Creek and tributaries thereof are Class II trout streams.

Evaluation Date: September 7, 1977.

Personnel:

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