= Nescopeck Creek =

Nescopeck Creek is a 37 @.@ 5 @-@ mile @-@ long ( 60 @.@ 4 km ) tributary of the Susquehanna River in Luzerne County , Pennsylvania , in the United States . The creek is in the Coal Region of Pennsylvania . The meaning of the creek 's name is " deep black waters " . The waters of Nescopeck Creek have difficulty ratings between Class I and Class III . However , during parts of the year , Nescopeck Creek is impossible to navigate due to rapids , flooding , and tight bends . Nescopeck Creek is home to a number of species of trout , although the waters are not always optimal for them . Nescopeck Creek 's water is acidic , with a pH as low as 3 @.@ 6 in some studies .

Much of the land in the Nescopeck Creek 's watershed is forest . Farmland is common in the lower portions of the Nescopeck Creek watershed and the Little Nescopeck Creek watershed , while coal mines are more common on Nescopeck Creek 's tributaries Black Creek , Stony Creek , and Cranberry Creek . A 6 @-@ mile ( 10 km ) portion of Nescopeck Creek is considered a cold @-@ water fishery of high quality . There are also seven natural areas in the creek 's watershed , some of which contain rare species of plants and animals . On the Hilsenhoff Biotic Index , the streams in the watershed range from 0 to 18 . There are 51 genera of macroinvertebrates in the creek 's watershed . The habitats in the watershed primarily include mixed forest .

Nescopeck Creek 's watershed is 143 square miles ( 370 km2 ) in area and lies in parts of three counties . Slightly over half of the land in the watershed is deciduous forest . The rest is perennial herbaceous vegetation , mixed vegetation and annual herbaceous vegetation , and barren land . Some sub @-@ watersheds contain as much as 80 percent forest . Almost all of the streams in the watershed are within 330 feet ( 100 m ) of a road . Most of the land in the watershed has a slope of 0 to 3 percent , although there are areas with a slope of 8 percent or more .

There are five main soil series in the Nescopeck Creek watershed . These are the Hazleton @-@ Dekalb @-@ Buchanan series , the Wellsboro @-@ Oquaga @-@ Morris series , the Leck Kill @-@ Meckesville @-@ Calvin series , the Udorthents @-@ Urban Land @-@ Volusia series , and the Lackawanna @-@ Arnot @-@ Morris series . There are also coal veins in the watershed . The creek discharges aluminum , iron , and manganese , nitrogen , and phosphorus . The pH of the streams in the Nescopeck Creek watershed range from 4 @.@ 2 to 7 @.@ 2 . The main stem 's discharge ranged from 31 @.@ 8 to 227 cubic feet per second ( 0 @.@ 90 to 6 @.@ 43 m3 / s ) between 1919 and 1926 . There are 10 dams in the watershed .

= = Course = =

Nescopeck Creek begins in Dennison Township , Luzerne County , Pennsylvania , at the confluence of an outlet of Olympus Pond and Creasy Creek . The creek 's source is also on the eastern edge of Mount Yeager . It flows northwest for a short distance before passing through Olympus Pond and turning west . For the next several miles the creek continues in this direction , running through Pennsylvania State Game Lands # 18 and receiving tributaries such as Reilly Creek and Little Nescopeck Creek A. Eventually , the creek passes the northwestern edge of Mount Yeager and continues into Butler Township . Here , the creek heads southwest at a more southerly angle , crossing Inerstate 80 , receiving Oley Creek , and passing an area of strip mines . A few miles later , the creek turns west @-@ southwest and corsses Pennsylvania Route 309 . Continuing onwards , it passes the communities of Rumbels and St. Johns and then crosses Interstate 81 . Several miles later , the creek leaves Butler Township and enters Sugarloaf Township . It continues west in this township , receiving the tributary Little Nescopeck Creek B , crossing Pennsylvania Route 93 , and making several meanders . After a number of miles , the creek meanders into Black Creek Township , where it turns north and picks up the tributary Black Creek right before crossing Interstate 80 and flowing through a gap in Nescopeck Mountain . In the gap , the creek crosses from Black Creek Township into Nescopeck Township , where it meanders northwest , passing the borough of Nescopeck and entering the Susquehanna River on the border between Nescopeck Township and Columbia County .

= = = Tributaries = = =

Nescopeck Creek has more than 200 miles ( 320 km ) of tributaries . This consists of 111 miles ( 179 km ) of named streams and 106 miles ( 171 km ) of unnamed ones . Major streams include Black Creek , two tributaries named Little Nescopeck Creek , Oley Creek , Creasy Creek , and Long Run . There are 13 named streams in the Nescopeck Creek watershed .

The portion of Nescopeck Creek from its mouth upstream to the mouth of Black Creek has a Strahler number of 5 . This makes up 8 @.@ 7 miles ( 14 @.@ 0 km ) of the streams in the watershed . Most of Black Creek and almost all of Nescopeck Creek upstream of Black Creek has a Strahler number of 4 . These make up 43 @.@ 2 miles ( 69 @.@ 5 km ) of streams in the creek 's watershed . Eight smaller tributaries in the watershed have Strahler number of three . These make up 14 @.@ 5 miles ( 23 @.@ 3 km ) of the creek 's watershed . A total of 25 streams in the creek 's watershed have a Strahler number of 2 . They make up 47 @.@ 4 miles ( 76 @.@ 3 km ) of the creek 's watershed . One hundred thirteen very small streams in the Nescopeck Creek watershed have a Strahler number of 1 . Such streams make up 104 @.@ 7 miles ( 168 @.@ 5 km ) of the creek 's watershed .

Little Nescopeck Creek A is one tributary of Nescopeck Creek . Its source is at the very northwestern edge of the creek 's watershed , and it joins the main stem of Nescopeck Creek slightly downstream of Olympus Pond . Little Nescopeck Creek B is in the south of the watershed and is slightly longer than Little Nescopeck Creek A. Little Nescopeck Creek B joins Nescopeck Creek at Sybertsville . Black Creek is the longest tributary of Nescopeck Creek , with a length of 24 @.@ 1 miles ( 38 @.@ 8 km ) . Reilly Creek is a tributary of Nescopeck Creek in the extreme east of the creek 's watershed . Only 2 miles ( 3 @.@ 2 km ) long , it is the shortest named tributary of Nescopeck Creek .

= = Hydrology = =

= = = Discharge = = =

From 1919 to 1926 , the discharge of Nescopeck Creek at St. Johns was 93 @.@ 9 cubic feet per second ( 2 @.@ 66 m3 / s ) . The month with the highest average discharge during this time was March , when there was a discharge of 227 cubic feet per second ( 6 @.@ 4 m3 / s ) . The month with the lowest average discharge during this time was September , when there was an average discharge of 31 @.@ 8 cubic feet per second ( 0 @.@ 90 m3 / s ) . The highest discharge in a single month was 479 cubic feet per second ( 13 @.@ 6 m3 / s ) in March 1920 . The lowest discharge in a single month was 12 @.@ 9 cubic feet per second ( 0 @.@ 37 m3 / s ) in September 1922 . The average discharge of Nescopeck Creek from 1995 to 2002 is 93 @.@ 7 cubic feet per second ( 2 @.@ 65 m3 / s ) . From 1996 to 1998 , the Jeddo Tunnel discharged an average of 79 @.@ 4 cubic feet per second ( 2 @.@ 25 m3 / s ) of water into Little Nescopeck Creek .

= = = Dams = = =

There are ten dams on Nescopeck Creek 's watershed . The impoundments behind these dams have surface areas of 3 to 154 acres ( 1 @.@ 2 to 62 @.@ 3 ha ) . Nine of the dams in the Nescopeck Creek watershed are made from earthen @-@ fill . The tenth is an unnamed dam constructed of masonry . The dams range from 12 to 41 feet ( 3 @.@ 7 to 12 @.@ 5 m ) in height and 340 to 1 @,@ 500 feet ( 100 to 460 m ) in length . Their drainage areas are between 0 @.@ 6 and 8 @.@ 41 square miles ( 1 @.@ 6 and 21 @.@ 8 km2 ) .

= = = pH and contaminants = = =

In 2005 , a study was done on the pH of the waters of Nescopeck Creek and its tributaries . At three sites , its pH averaged 5 @.@ 06 , 4 @.@ 85 , and 4 @.@ 49 . However , the pH at Nescopeck Creek 's headwaters is between 6 @.@ 5 and 7 . The lowest pH level in the Nescopeck Creek watershed is 4 @.@ 2 , which is on some parts of Black Creek . Creasy Creek is the most alkaline tributary of Nescopeck Creek , with a pH ranging from 6 @.@ 9 to 7 @.@ 2 . Other relatively alkaline streams in the creek 's watershed include Long Run ( 6 @.@ 6 ) , Reilly Creek ( 6 @.@ 4 ) , Long Hollow ( 6 @.@ 4 ) , Oley Creek ( 6 @.@ 4 ) , Conety Run ( 6 @.@ 2 ) , and Little Nescopeck Creek A ( 5 @.@ 8 to 7 ) . Brook trout are able to tolerate pHs down to 4 @.@ 8 and the ideal pH range for freshwater fish is 6 @.@ 5 to 9 @.@ 0 .

At these sites , the study also found averages of 1 @.@ 7 , 2 @.@ 23 , and 5 @.@ 56 parts per million of aluminum , respectively . Concentrations of aluminium higher than 100 to 200 parts per million can cause suffocation of fish by accumulating in their gills . The toxicity of aluminum to fish is increased by a water pH of below 4 @.@ 5 to 6 @.@ 5 . There were also 0 @.@ 65 , 0 @.@ 81 , and 1 @.@ 84 parts per million of iron in these sites , and 0 @.@ 96 , 1 @.@ 15 , 0 @.@ 03 , and 2 @.@ 65 parts per million of manganese . There were 91 @.@ 37 , 114 @.@ 27 , and 274 @.@ 1 milligrams per liter of sulfates in the waters of Nescopeck at these sites .

A total of 318 metric tons ( 351 short tons ) of nitrogen per year are discharged from Nescopeck Creek . Thirty @-@ three percent of this came from land , 60 percent from groundwater , and 6 percent from leaking septic tanks . Its Black Creek tributary adds toxic amounts of copper , lead , and zinc to Nescopeck Creek 's watershed . In most parts of Nescopeck Creek and its tributaries , the concentration of phosphorus is slightly lower than the concentration of nitrogen . However , at St. Johns and Conyngham , the phosphorus leel is considerably higher than the nitrogen level . Most phosphorus contributed to Nescopeck Creek comes from sub @-@ watersheds instead of the main stem of the creek . The total amount of phosphorus in Nescopeck Creek is 16 @,@ 259 @.@ 5 kilograms ( 35 @,@ 846 lb ) . Cropland and quarries are the largest land sources of phosphorus in the watershed , each contributing 6 @,@ 226 @.@ 6 kilograms ( 13 @,@ 727 lb ) ( 43 @.@ 6 percent of land sources ) and 2 @,@ 109 @.@ 6 kilograms ( 4 @,@ 651 lb ) . The smallest sources of phosphorus in the watershed are unpaved roads , contributing 11 @.@ 8 kilograms ( 26 lb ) ( 0 @.@ 1 percent ) and mixed forest , contributing 28 @.@ 3 kilograms ( 62 lb ) ( 0 @.@ 2 percent ) . Groundwater contributes 1 @,@ 858 @.@ 3 kilograms ( 4 @,@ 097 lb ) and septic systems contribute 135 @.@ 1 kilograms ( 298 lb ) . Point source pollution in the watershed does not release any phosphorus .

Stony Creek 's water is the hardest water in the Nescopeck Creek watershed , with a concentration of over 100 milligrams per liter of dissolved minerals . Other streams in the watershed with hard water are Reilly Creek ( 28 milligrams per liter ) and Long Run ( 21 milligrams per liter ) . Some of the least hard waters in the Nescopeck Creek watershed are those of Little Nescopeck Creek A ( 3 to 8 milligrams per liter ) , Conety Run ( 5 milligrams per liter ) , and Oley Creek ( 7 milligrams per liter ) . However , the largest source of pollution in the Nescopeck Creek watershed is acid mine drainage ( AMD ) .

Above Little Nescopeck Creek B , Nescopeck Creek 's iron concentration is 110 micrograms per liter and the creek 's aluminum concentration is 40 micrograms per liter . Below Little Nescopeck Creek B , however , these values increase to 1260 micrograms per liter for iron and 7450 micrograms per liter for aluminum .

The vulnerability of groundwater to pollution in the Nescopeck Creek watershed has been measured using the DRASTIC system . It is lowest in the headwaters , as well as patches near the creek 's mouth , with a value of 69 to 90 . Values of 91 to 104 occur in the northern part of the watershed , as well as in scattered patches in the western part . Values of 105 to 115 occur in the southern , southwestern , and part of the central part of the watershed . Some areas with values 116 and higher are scattered throughout the watershed except near the headwaters .

= = Geology = =

Nescopeck Creek has coal veins near its source . These coal veins first appeared 300 million years

ago . The thickness of these coal seams ranges from 3 feet ( 0 @.@ 9 m ) in the Tracy Bed up to 50 to 114 feet ( 15 to 35 m ) in the Mammoth Bed . Nearly all of the Eastern Middle coal field is in the watershed of Nescopeck Creek . Sugarloaf Mountain is near Nescopeck Creek . Nescopeck Creek has a number of rapids . At its mouth , Nescopeck Creek carries 914 @.@ 9 pounds ( 415 @.@ 0 kg ) of aluminum , 1 @,@ 285 pounds ( 583 kg ) of iron , and 1 @,@ 127 pounds ( 511 kg ) of manganese per day .

Nescopeck Creek is in the geological region known as the Ridge and Valley region . This region is characterized by fertile valleys and steep ridges . However , the eastern reaches of the Nescopeck Creek watershed are near the border of the Appalachian Plateau region .

Nescopeck Creek 's watershed contains several major rock formations . These are the Mauch Chunk Formation , the Llewellyn Formation , the Pocono Formation , and the Pottsville Formation . The Mauch Chunk Formation is associated with large amounts of high @-@ quality groundwater . This formation consists of a 3 @,@ 000 @-@ foot ( 910 m ) layer of shale , sandstone , and silt . It is situated under the Hazleton valley . The Mauch Chunk Formation contains outcrops of reddish rock . This formation is softer than many of the nearby rock formations . This formation makes up Sugarloaf Mountain and most of the Nescopeck Creek watershed . The Llewellyn Formation contains more coal than any other formation in the Nescopeck Creek watershed . This formation is 1 @,@ 500 feet ( 460 m ) thick and is composed of brownish @-@ gray sandstone , siltstone , and shale . Buck Mountain , Mammoth Mountain , and Gamma Mountain are all carved out of the Llewellyn Formation and contain coal seams . The formation was once extensive , but has been worn down by erosion over millions of years . The Pottsville Formation also contains a large number of aquifers . This formation is 250 to 300 feet ( 76 to 91 m ) thick , and is composed of gray conglomerate and sandstone . While there is no anthracite in the Pottsville Formation , it does contain three @-@ foot seams of other varieties of coal . Groundwater from this formation is acidic and high in manganese and iron . The Pottsville Formation makes up the valleys directly surrounding Nescopeck Creek . The Pocono Formation consists of conglomerate and sandstone and surrounds the Pottsville Formation . The rock formations are typically more varied in the northern and western part of the watershed than the southern part .

There are also several less significant rock formations in Nescopeck Creek 's watershed . These include the Spechty Kopf Formation , the Hamilton Formation , and the Catskill Formation . Little is understood about the Spechty Kopf Formation , but it occurs between the Catskill and Pocono Formations . The Catskill Formation is grayish @-@ red shale , siltstone , and sandstone .

A total of 246 @,@ 594 metric tons ( 271 @,@ 823 short tons ) of material have eroded into Nescopeck Creek . Black Creek has the most erosion for an individual stream in the Nescopeck Creek watershed , with 123 @,@ 825 metric tons ( 136 @,@ 494 short tons ) of erosion . The main stem of Nescopeck Creek and Little Nescopeck Creek B also have high amounts of erosion , with 74 @,@ 365 metric tons ( 81 @,@ 973 short tons ) and 44 @,@ 876 metric tons ( 49 @,@ 467 short tons ) , respectively .

= = = Soils = = =

The most common soil series in the Nescopeck Creek watershed is the Hazleton @-@ Dekalb @-@ Buchanan series . Twenty @-@ six percent of Nescopeck Creek 's watershed contains this soil series . Much soil and bedrock in this series has been removed during mining operations . This soil series occurs in the southern part of the Nescopeck Creek watershed , near tributaries such as Black Creek and Stony Creek . The soils in this soil series are highly permeable .

Approximately 24 percent of the creek 's watershed contains the Wellsboro @-@ Oquaga @-@ Morris series . The series is made of Wellsboro soils , Oquaga soils , and some Morris soils . This type of soil series is most common near the creek 's source . Another twenty @-@ four percent of the Nescopeck Creek watershed is made up of the Leck Kill @-@ Meckesville @-@ Calvin series . This soil series tends to occur on hillsides near streams . The Leck Kill @-@ Meckesville @-@ Calvin series occurs quite near the mouth of Nescopeck Creek , with a large patch further upstream , and a small patch in the southwestern part of the Nescopeck Creek watershed .

Eleven percent of Nescopeck Creek 's watershed is made up of the Udorthents @-@ Urban Land @-@ Volusia series . There is some urban development over lands containing the soil series . Other areas where this soil series occurs have been surface @-@ mined . The limiting factor for plant growth in this series is the rocky surface and the depth of the bedrock below . The Udorthents @-@ Urban Land @-@ Volusia soil series occurs in the southeastern and parts of the southwestern parts of the Nescopeck Creek watershed . The Lackawanna @-@ Arnot @-@ Morris series is present in nine percent of Nescopeck Creek 's watershed . The Lackawanna @-@ Arnot @-@ Morris soil series mostly is near Nescopeck Creek 's source , but there is some of it in the central Nescopeck Creek watershed .

= = Watershed = =

Nescopeck Creek 's watershed is 143 square miles ( 370 km2 ) in area . Most of the watershed is in Luzerne County , but part of it also extends into Schuylkill and Columbia Counties . Nescopeck Creek 's watershed area includes one city , five boroughs , and thirteen townships . Most of the land in the Nescopeck Creek watershed , except for area near its source , is publicly owned . Thirteen percent of the land in the Nescopeck Creek watershed is owned by the state of Pennsylvania .

Fifty @-@ seven percent of the Nescopeck Creek watershed is composed of deciduous forest . Areas of perennial herbaceous vegetation make up 11 to 12 percent of the creek 's watershed . Additionally , there are scattered patches of mixed vegetation and annual herbaceous vegetation in the northwestern part of the Nescopeck Creek watershed . Four to seven percent of the Nescopeck Creek watershed consists of mines , quarries , and gravel pits . A total of 95 percent of the Nescopeck Creek watershed is rural . The remaining 5 percent is suburban or urban . Twenty @-@ seven percent of the streams in the Nescopeck Creek watershed are near surface @-@ mining operations and 73 percent are not . Most developed land tends to be located in the southern part of the watershed , while most undeveloped land is in the northern part of the watershed .

All sub @-@ watersheds of the Nescopeck Creek watershed contain at least 50 percent forest . A number of streams in the upper Nescopeck Creek watershed , in fact , have more than 80 percent forest coverage . Only 55 percent of the Black Creek watershed is covered by forest . Most sub @-@ watersheds of Nescopeck Creek have only a small amount of barren land . However , the Cranberry Creek watershed contains 6 @.@ 5 percent barren land , the Black Creek watershed contains 14 percent , and the Stony Creek watershed contains 30 percent . The Little Nescopeck Creek watershed contains 30 percent farmland and the Nescopeck Creek watershed contains 24 percent . Other sub @-@ watersheds of Nescopeck Creek range from 2 to 13 percent farmland .

There are 910 miles ( 1 @,@ 460 km ) of roads in the Nescopeck Creek watershed . Forty percent of the creek 's length is within 100 feet ( 30 m ) of a road . Eighty @-@ seven percent of Nescopeck Creek 's length is within 332 feet ( 101 m ) of a road . There are 286 miles ( 460 km ) of roads in Nescopeck Creek 's main stem sub @-@ watershed . There are 253 miles ( 407 km ) of roads in the Black Creek sub @-@ watershed . The Long Run and Little Nescopeck Creek sub @-@ watersheds also contain close to 122 and 113 miles ( 196 and 182 km ) of roads , respectively .

= = = Terrain = = =

Most of the Nescopeck Creek watershed is flat , with a slope of 0 to 3 percent . There are two major lines of hills in the watershed , one of which is in the northern part and the other of which is in the central part of the watershed . These lines of hills have a slope of 3 to 8 percent . In both of the lines of hills , there are patches where the slope is 8 to 15 percent and in the northern line of hills , there is an area with a slope of over 15 percent .

The elevation at Nescopeck Creek 's mouth and along Nescopeck Creek for a few miles upstream is in the range of 490 to 659 feet ( 149 to 201 m ) above sea level . The elevation of the creek 's watershed north of the northernmost line of hills is in the range of 663 to 994 feet ( 202 to 303 m ) . The central part of the Nescopeck Creek watershed , south of the northernmost line of hills , including the mouth of Black Creek , is also in this range . The area close to the main stem of the

creek upstream to several miles from the source is in the range of 997 to 1 @,@ 161 feet ( 304 to 354 m ) . In the central part of the Nescopeck Creek watershed , several tributaries also lie in this elevation range . Near the creek 's source , its elevation is in the range of 1 @,@ 165 to 1 @,@ 496 feet ( 355 to 456 m ) . The central part of the Black Creek watershed is also in this range , as is much of the Nescopeck Creek watershed 's northernmost line of hills . Nescopeck Creek 's elevation within 2 miles ( 3 @.@ 2 km ) of its source is in the range of 1 @,@ 499 to 1 @,@ 831 feet ( 457 to 558 m ) . The upper portion of the Black Creek watershed and the southeastern part of the Nescopeck Creek watershed is also in this range . Scattered parts of the creek 's watershed , such as its southwestern corner and the creek 's source , are in the elevation range of 1 @,@ 834 to 2 @,@ 000 feet ( 559 to 610 m ) .

The Long Hollow sub @-@ watershed is Nescopeck Creek is Nescopeck Creek 's smallest sub @-@ watershed , with an area of 1 @.@ 1 square miles ( 2 @.@ 8 km2 ) . The main stem of Nescopeck Creek has the largest sub @-@ watershed , with an area of 67 @.@ 3 square miles ( 174 km2 ) . The Black Creek sub @-@ watershed is Nescopeck Creek 's second @-@ largest sub @-@ watershed . The Little Nescopeck Creek A at 14 square miles ( 36 km2 ) , Little Nescopeck Creek B at 8 @.@ 4 square miles ( 22 km2 ) , Cranberry Creek at 8 @.@ 4 square miles ( 22 km2 ) , and Oley Creek at 7 @.@ 2 square miles ( 19 km2 ) are also among the largest Nescopeck Creek sub @-@ watersheds .

= = History = =

= = = Native American inhabitation = = =

Nescopeck Creek 's name comes from a Lenape word meaning " deep black waters " . Historically , two tribes of Native Americans known as the Fork Indians and the Delaware Indians lived near the mouth of Nescopeck Creek . Other parts of the Nescopeck Creek watershed were settled by Lenni Lenape Indians . The Lenni Lenape inhabited the Nescopeck Creek watershed a thousand years before European settlers . There is no definitive record of permanent settlements in the interior of Nescopeck Creek 's watershed , but temporary Native American settlements existed in what is now Nescopeck State Park . By the 1700s , the Lenni Lenape had left the Nescopeck Creek watershed due to encroaching Iroquois and European settlers .

There were two major Native American trails in the Nescopeck Creek watershed . These were the Lehigh Path , which is also known as the Warrior Trail , and the Trade Trail . Parts of these trails would become Vine Street and Broad Street in Hazleton , respectively .

= = = European inhabitation = = =

In the early 1700s , some European settlers , who were granted warrants by William Penn , explored Native American trails in the Nescopeck Creek watershed . On these paths , skirmishes occasionally occurred between settlers and Native Americans . One example is the Sugarloaf Massacre , when a group of Native Americans ambushed some soldiers on the Lehigh Path near Nescopeck Creek in 1780 . The first mill was built in the Nescopeck Creek watershed in 1788 . By 1791 , there were four settlers along Nescopeck Creek . In 1795 , Samuel Mifflin built a sawmill at the mouth of Nescopeck Creek . A gristmill was built on Nescopeck Creek the same year . A flood of Nescopeck Creek in 1786 , known as the Pumpkin Flood , was noted for sweeping large numbers of pumpkins downstream on the creek .

Light industries , such as lumbering and tanning , gradually developed in the Nescopeck Creek watershed . This led to the creation of numerous communities in the Nescopeck Creek watershed , such as White Haven , Freeland , and Hazleton . Additionally , anthracite coal was discovered in 1813 . Coal became an important industry for the Nescopeck Creek region by 1836 with the formation of the Hazleton Coal Company . In the 1830s and 1840s , a number of " patch towns " designed to attend mines were built in the Nescopeck Creek watershed . The population in the

Nescopeck Creek watershed began to increase rapidly around this time . By the 1880s , the patch towns attended over thirty mines in the watershed . However , the coal mining industry in the watershed began to lose value around this time , coal mining was no longer a significant source of industry in the Nescopeck Creek watershed by 1936 .

In 1830 , a forge which made bar iron was built on Nescopeck Creek . The most destructive flood on Nescopeck Creek occurred in 1850 , when a dam on the creek was breached , killing 22 people . From 1858 to 1870 there was a tannery on Nescopeck Creek . In 1828 , plans for a canal in Nescopeck Creek were made . In 1885 , a number of French Indian artifacts , which were Plaster of Paris casts for making sculptures , were discovered along Nescopeck Creek in Dennison Township .

In 1891 the first part of the Jeddo Tunnel , a tunnel in the Nescopeck Creek watershed , was built . The last tunnel in this system was built in 1932 . These tunnels drain more than 32 square miles ( 83 km2 ) , of which 13 square miles ( 34 km2 ) contain coal basins .

A dam on Nescopeck Creek was destroyed during Hurricane Agnes in 1972 . In the early 1900s , there was a steam @-@ electric power station at the mouth of Nescopeck Creek . The Wilkes @-@ Barre and Hazleton Railway passed over Nescopeck Creek in the beginning of the 1900s . The Jeddo Tunnel , which drained a colliery in the 20th century , emptied into Nescopeck Creek . After World War II , there was a large increase in unemployment rates in the Nescopeck Creek watershed due to the failing coal mining industry . From 1919 to 1926 , the United States Geological Survey had a station on Nescopeck Creek near the community of St. Johns . Two other stream gauging stations have been built on Nescopeck Creek . One of these stations , which was in use from 1949 to 1950 was in Nescopeck . The other , which was in use from 1963 to 1970 , was 0 @.@ 6 miles upstream of Nescopeck Creek 's mouth . In the 1990s , some people were caught stealing Native American artifacts at the Nescopeck Creek headwaters .

= = Biology = =

Nescopeck Creek is home to brown trout and brook trout near its source , but does not have much life further downstream because coal mine waste in Little Nescopeck Creek pollutes the lower reaches of Nesocpeck Creek . In 1999 , a study discovered 20 species of fish living in the Nescopeck Creek watershed . Of these , 15 had been observed before in the watershed , and five had not . Nesopeck Creek and its various tributaries are rated Class A to Class D for wild trout . There are a number of riparian buffers on Nescopeck Creek , of which 80 percent consist of forest . Along parts of Nescopeck Creek , there are a large number of shrub @-@ like oak trees . In the Nescopeck Creek watershed , there are prolific forests of oak , chestnut , and hemlock trees .

The entire Nescopeck Creek watershed has a high level of biodiversity , with the most diverse areas being Arbutus Peak , the Edgewood vernal pools , and the Nescopeck Creek valley . The creek 's southeastern corner contains the highest density of amphibian species in its watershed . The highest density of snake species in the watershed is in the same area . The lowest density of snake species in the watershed is along the central part of Nescopeck Creek . The highest density of bird species in the watershed is in the southern and central part of the watershed . The highest density of mammal species in the watershed is at Nescopeck Creek 's headwaters .

In the Nescopeck Creek watershed , there are seven natural areas . These are Arbutus Peak , Valmont Industrial Park , the Black Creek flats , the Humboldt barrens , the Nescopeck Creek valley , and the Edgewood vernal pools . Arbutus Peak is a 5 @,@ 000 @-@ to @-@ 6 @,@ 000 @-@ acre ( 2 @,@ 000 to 2 @,@ 400 ha ) area at Nescopeck Creek 's headwaters . Also , the Nescopeck Barrens are home to 15 rare species of plants and animals . The Nescopeck Creek valley also contains a number of rare species . The Edgewood vernal pools provide a breeding ground for wood frogs and Jefferson salamanders .

The Bird Community Index , a measure of the quality of a habitat based on the presence of songbirds , has been tested for most of the watershed of Nescopeck Creek . The Bird Community Index was high in one area near the source of Nescopeck Creek . In all other areas of the watershed , the index was low to medium . One of the lowest values is near Nescopeck Creek 's

mouth . The Hilsenhoff Biotic Index ( HBI ) has been measured for a number of sites along Nescopeck Creek and its tributaries . Upstream of the Jeddo Tunnel , Little Nescopeck Creek B has a high HBI . However , just downstream of the Jeddo Tunnel , the HBI drops off by a large amount . Black Creek has an HBI of 0 to 6 @.@ 6 , and this tributary 's biodiversity is lower at its headwaters than at its confluence with Nescopeck Creek . Nescopeck Creek 's HBI is from 1 @.@ 7 to 5 @.@ 4 , depending on the site . In Nescopeck Creek , the total number of macroinvertebrate taxa at several sites ranges from 5 to 26 . In Little Nescopeck Creek , the values range from 1 to 18 . In Black Creek , the number ranges from 0 to 11 .

In 1999 , the only Class @-@ A fishery waters in the Nescopeck Creek watershed were those of Little Nescopeck Creek A , the headwaters of Nescopeck Creek , and several minor tributaries of Nescopeck Creek . Only one small stream near Nescopeck Creek 's mouth had Class @-@ C fishery waters . The central part of Nescopeck Creek , as well as most of Black Creek had Class @-@ D fishery waters . There were twenty species of fish in Nescopeck Creek in 1999 . Of these , seventeen had been seen in the watershed before . However , since between a 1999 study of the watershed and the study before that , the brown bullhead and the bluegill fish had vanished from the Nescopeck Creek watershed .

A large number of genera of macroinvertebrates have been discovered in and around Nescopeck Creek . These consist of one genus of segmented worm , one genus of sowbugs , 11 genera of mayflies , 8 genera of stone flies , 11 genera of caddisflies , 6 genera of dragonflies , 2 genera of helgrammites , 10 genera of beetles , and one genus of fly .

There are a total of 14 species of amphibians in the Nescopeck Creek watershed , of which 11 breed in the watershed . These species consist of 6 salamanders , 6 frogs , one newt , and one toad . There are seven species of reptiles in the watershed , of which five breed there . Five of these species are snakes and two are turtles . The biodiversity of birds in the watershed is much greater than that of amphibians or reptiles ; there are approximately one hundred different species of birds in the Nescopeck Creek watershed . A total of 29 mammals have been observed in the creek 's watershed , including three species of bats , two species of mice , and two species of foxes .

= = = Habitats = = =

The most common habitat in the Nescopeck Creek watershed is the dry @-@ oak mixed forest . Common trees in this habitat include northern red oak , white oak , and chestnut oak . This habitat also contains gray and black birch trees . Pine , hemlock , and some types of oak trees are found on the higher parts of this habitat . Lower to the ground are huckleberry , teaberry , blueberry , and hawthorn and other plants . The wildflowers in this habitat include wild onion and wild strawberries .

In the Nescopeck Creek watershed , pitch pine ? scrub oak forests occur on Arbutus Peak and several barren areas in the southern part of watershed . In this type of forest , pitch pine , scrub oak , black oak and chestnut oak are the main trees . Bracken fern , teaberry , black chokeberry , blueberry , and huckleberry are the most common shrubs in this habitat .

All of the streams in the Nescopeck Creek are considered sub @-@ optimal habitats and rated on a scale of 1 to 240 . The most optimal water habitat in the watershed is a site along Nescopeck Creek , with a rating of 184 . The least optimal water habitats in the watershed are two sites along Black Creek . These sites are considered poor to marginal habitats , with ratings of 56 and 96 respectively .

= = Recreation = =

Nescopeck State Park is one source of recreation in the Nescopeck Creek watershed . Nescopeck Creek flows through this state park and on it there are opportunities for trout fishing . Nescopeck Creek takes up 3 @,@ 350 acres ( 1 @,@ 360 ha ) of the northwestern part in the Nescopeck Creek watershed . Additionally , there are four golf courses , two community parks , and two Pennsylvania State Game Lands , and ten sites for water @-@ based recreation , including Lake Francis in Nescopeck State Park . A tourist attraction , Eckley Miner 's Village , is within the

Nescopeck Creek watershed . A resort known as the Eagle Rock Resort is in the Nescopeck Creek watershed . Since the late 1990s , there have been plans to convert old railroad lines in the Nescopeck Creek watershed to rail trails . One such plan is to link the Hazleton area to the Delaware and Lehigh National Heritage Corridor .