

= Solomon Creek =

Solomon Creek is a tributary of the Susquehanna River in Luzerne County , Pennsylvania , in the United States . It is approximately 8 @. @ 8 miles (14 @. @ 2 km) long and flows through Fairview Township , Hanover Township , and Wilkes @-@ Barre . The creek is affected by acid mine drainage and has significant loads of iron , aluminum , and manganese . The creek 's named tributaries are Spring Run , Sugar Notch Run , and Pine Creek . The Solomon Creek watershed is located in the Anthracite Valley section of the ridge @-@ and @-@ valley geographical province . Major rock formations in the watershed include the Mauch Chunk Formation , the Spechty Kopf Formation , and the Catskill Formation .

Solomon Creek was first settled by Native Americans around 8000 to 6000 B.C.E. A settler arrived at the confluence of the creek with the Susquehanna River by 1774 . In the 1800s , more people began arriving in the watershed to exploit its natural resources . Anthracite mining was especially prevalent in the watershed in the 19th and 20th centuries , to the point that numerous streams were altered or destroyed and the Laurel Run mine fire started .

Solomon Creek was devoid of fish in the 1970s . However , since then several fish species , including brook trout , have inhabited the creek and its tributaries . A number of varieties of aquatic insects are also present .

= = Course = =

Solomon Creek starts on western Penobscot Mountain in northern Fairview Township and flows west down the mountain for a short distance before turning northwards , paralleling Pennsylvania Route 309 and briefly Pennsylvania Route 437 . The creek then enters Hanover Township . It picks up Pine Creek and cuts a gap through Wilkes @-@ Barre Mountain and then through Ashley . Upon leaving Ashley , it heads into Wilkes @-@ Barre , picking up Sugar Notch Run and Spring Run . The creek soon turns west into Hanover Township again , having flowed 6 miles (9 @. @ 7 km) by this point . It enters the Susquehanna River at Hanover Green .

= = Tributaries = =

Sugar Notch Run , Pine Creek and Spring Run are two tributaries of Solomon Creek . Sugar Notch Run is 3 @. @ 46 miles (5 @. @ 57 km) long , Pine Creek is 7 @. @ 68 miles (12 @. @ 36 km) long , and Spring Run is 2 @. @ 93 miles (4 @. @ 72 km) long . Spring Run is an intermittent stream . There are two other ephemeral tributaries that are not officially named , but are known locally as Sulfur Run and the Lee Park tributary .

Historically , Solomon Creek had at least seven tributaries , including one named Buttonwood Creek . However , several tributaries largely disappeared by the late 1890s due to mining in the watershed .

= = Hydrology = =

Solomon Creek has an orange color as it flows past Wilkes @-@ Barre , due to acid mine drainage .

The tributaries Sugar Notch Run and Spring Run lose most of their discharge (75 % in the case of Spring Run) when passing over subterranean mine pools . The discharge of the creek is 3 @. @ 39 cubic feet per second . Between 1938 and 1989 , the highest recorded discharge of the creek was 2450 cubic feet per second . This occurred on August 18 , 1955 . The discharge was not higher than 1610 cubic feet per second on any other year during that time period .

The daily load of aluminum in Solomon Creek ranges from 8 @. @ 8 pounds (4 @. @ 0 kg) at a site below Pine Creek to 87 @. @ 9 pounds (39 @. @ 9 kg) at the Buttonwood Tunnel . The average load is 29 @. @ 6 pounds (13 @. @ 4 kg) per day . The lowest load of iron is 0 pounds (0 kg) per day at the site below Pine Creek and Solomon Creek at Sugar Notch Run and the highest is

9 @, @ 624 pounds (4 @, @ 365 kg) per day at the Buttonwood Tunnel . The average is 2 @, @ 305 @. @ 5 pounds (1 @, @ 045 @. @ 8 kg) per day . The Solomon Creek boreholes and the Nottingham @- @ Buttonwood Airshaft are the second @- @ largest and third @- @ largest sources of iron discharge in the Coal Region , contributing 9 @. @ 07 % and 7 @. @ 85 % of the iron load in the region , respectively . The daily load of manganese ranges between 0 @. @ 7 pounds (0 @. @ 32 kg) above Pine Creek and 1 @, @ 086 pounds (493 kg) at the Buttonwood Tunnel and the average daily load is 260 @. @ 1 pounds (118 @. @ 0 kg) . The load of acidity in the creek ranges from 0 at site SR to 1 @, @ 506 @. @ 1 pounds (683 @. @ 2 kg) per day at the Buttonwood Tunnel . The average load of acidity per day is 628 @. @ 9 pounds (285 @. @ 3 kg) . The alkalinity load ranges from 288 @. @ 4 pounds (130 @. @ 8 kg) on Sugar Notch Run to 135 @, @ 660 @. @ 8 pounds (61 @, @ 534 @. @ 7 kg) at the Buttonwood Tunnel . The average daily load of alkalinity is 23 @, @ 716 pounds (10 @, @ 757 kg) .

At a large number of sites within the Solomon Creek watershed in 2011 , the water temperature ranged from 34 ° F (1 ° C) at site SC12 to 70 ° C (158 ° F) at sites above , below , and on Sugar Notch Run . At these same sites , the pH ranged from 4 @. @ 5 at a site on Sugar Notch Run to 7 @. @ 5 two sites on an unnamed tributary , one site below Sugar Notch Run , and a site on another unnamed tributary . The iron concentration ranged from 0 at over 20 sites to 36 milligrams per liter at an acid mine drainage discharge in the watershed . The concentration of dissolved oxygen ranged from 0 at eight sites to 13 milligrams per liter at SU01 , and on Pine Creek northeast of Pennsylvania Route 309 and below Unnamed Tributary 4 .

There are six locations in the Solomon Creek watershed where mine drainage is discharged . Ten miles (sixteen kilometers) of the streams on the creek 's watershed are rendered devoid of life by mine drainage .

According to Robert Hughes , the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation 's executive director , the water level of Solomon Creek has risen since the middle of the 19th century . There are large amounts of sediment along the creek . Sediment piles are over 2 feet (0 @. @ 61 m) on the creek at Division Street and 3 feet (0 @. @ 91 m) or 4 feet (1 @. @ 2 m) in the Brookside area . Sewage is discharged into the creek at several locations . It has been discharged into the creek since at least 1909 . Additionally , there are debris dams in various areas on the creek .

= = Geology = =

Solomon Creek is located at the edge of the ridge and valley geographic province , in the Anthracite Valley section . There is a ridge in the creek 's watershed called the Wilkes @- @ Barre Mountain . On the ridge , the Mauch Chunk Formation exists , with red shale , sandstone , and siltstone . Other significant rock formations in the watershed include the Pocono Formation with olive and gray rocks and the Spechty Kopf formation . Under the Spechty Kopf formation lie rocks of the Catskill Formation . The watershed is located in the Wyoming Coal Basin , the southwestern sub @- @ basin of the Northern Anthracite Coal Field . The creek 's headwaters have glacial deposition from the Wisconsinian glacial period . At the headwaters of the tributary Spring Creek , there is a rock formation of light gray conglomerate called Prospect Rock . It is 1 @, @ 394 feet (425 m) above sea level and 2 @. @ 25 miles (3 @. @ 62 km) southeast of Wilkes @- @ Barre 's Public Square .

An unconformity lies between the Catskill Formation and the Spechty Kopf Formation . The sandstone in the latter formation are mostly cross @- @ bedded , although some areas have planar bedding . The Llewellyn Formation , containing conglomerate and sandstone is found in the Spring Run and Sugar Notch Run sub @- @ watersheds .

The upper part of Solomon Creek is located in the Pocono Plateau . The lowest elevation in the watershed is 560 feet (170 m) on the western side of the creek 's floodplain . The highest elevation is 2 @, @ 148 feet (655 m) on Haystack Mountain . The elevation of the creek 's mouth is 594 feet (181 m) above sea level . The creek 's source is just under 1 @, @ 840 feet (560 m) above sea level .

There are 14 coal seams in the Solomon Creek watershed . The deepest seam is the Bottom Red

Ash . Other seams included the Middle Red Ash , the Top Red Ash , the Checker Bed , the Pittston Bed , the Ross Bed , the Skidmore Bed , the Kidney Bed , the Snake Island Bed , the Hillman Bed , and the Abbott Bed . There are also three numbered beds called the # 2 , # 3 , and # 4 beds . Historically , parts of the seams were within 50 feet (15 m) of the surface , but they were completely mined . Areas along the banks of the creek are covered in coal ash , coal silt , sand , and gravel . There are gravel bars and point bars in the lower reaches of the creek . The lower reaches of Solomon Creek have a 0 @. @ 2 % grade .

In the Solomon Gap , there are piles coal ash that is pink and orange due to oxidation . These piles rise as high as 60 feet (18 m) to 100 feet (30 m) . Similarly @-@ colored coal is found in sediment and gravel bars in the creek .

= = = Soils = = =

Soils in the Pennsylvania State Game Lands Number 207 , in the Solomon Creek watershed , include the Arnot Rock outcrop complex . On hills with a grade higher than 25 % , the steep variety of this soil appears . It is a dark brown silt loam with a bedrock depth of 12 inches (30 cm) . It has fast runoff and 3 % to 40 % of the surface is covered with boulders . The regular variety of this soil , which occurs on slopes with a grade of 8 % to 25 % , is the same , but has a bedrock depth of 18 inches (46 cm) and slower runoff .

= = Watershed = =

The area of Solomon Creek 's watershed is 18 @. @ 2 square miles .

The watershed area is 60 % forested land and 26 % developed land . Nearly 7 % of the land is considered disturbed by the U.S. Environmental Protection Agency . This includes abandoned coal mines and quarries . In specific , 6748 acres are forest , 1839 acres are considered " low @-@ intensity development " by the Environmental Protection Agency , 1174 acres are considered " high @-@ intensity development " by the Environmental Protection Agency 509 acres are devoted to hay or pastureland , and 492 acres are considered " transition " by the Environmental Protection Agency . Crops are grown on 336 acres , quarries occupy 215 acres , wetland makes up 77 acres , coal mines make up 64 acres , and grass occupies 22 acres . There are a total of 26 @. @ 66 miles (42 @. @ 91 km) stream miles in the watershed . Deciduous forest occupies much of the southern part of the watershed . Most of the agricultural land is located on a floodplain at the mouth of the creek .

There are nine municipalities in the Solomon Creek watershed . Most of the watershed is in Ashley , Laurel Run , Wilkes @-@ Barre Township , and Hanover Township . Smaller parts of the watershed are in Wilkes @-@ Barre , Bear Creek Township , Fairview Township , Rice Township , and Sugar Notch .

In the 2000 United States Census , there were 928 households in the Solomon Creek area and an average household size of 4 @. @ 6 people . This indicates a population of 4269 for the Solomon Creek watershed . There is a higher @-@ than @-@ average concentration of people over 65 years of age in the watershed . Major roads in the watershed include Interstate 81 and Pennsylvania Route 309 .

There are five designated sub @-@ watersheds of the Solomon Creek watershed . They are the upper and lower Solomon Creek watershed , the Pine Creek watershed , the Spring Run watershed , and the Sugar Notch Run watershed . Neighboring watersheds include those of Little Wapwallopen Creek and Big Wapwallopen Creek .

= = History = =

Native Americans settled in the Solomon Creek watershed by approximately 8000 B.C. to 6000 B.C. Ebenezer Hibbard was an early European settler on the creek , living there by 1772 . The creek is named after a person with the surname of Solomon , who settled at the mouth of the creek in 1774 . In the early 1800s , Europeans first realized the natural resources of the watershed . In the

early 1800s , there was a tavern called Inman 's Tavern and several cabins in the Solomon Gap . In the mid @-@ 1800s , the population of the watershed increased significantly due to coal mining and timbering opportunities . The first road in Fairview Township , the Wilkes @-@ Barre and Hazleton Turnpike , started at Solomon Creek .

There are waterfalls called Solomon 's Falls on Solomon Creek . They were called a " beautiful cascade " by Philadelphia 's Portfolio in 1809 , although a 1909 book stated that the waterfalls were no longer " picturesque " or " delightful " . The falls were between 50 feet (15 m) and 60 feet (18 m) .

In 1809 , Richard and Israel Inman constructed a gristmill at the foot of Solomon 's Falls . It was converted to a house in 1833 and destroyed in 1850 . A gristmill on the creek in Hanover Township had been built by 1812 and was run by George Mesinger . It was destroyed in 1840 . In 1845 , William Petty constructed the gristmill called Petty Mill in Hanover Township . This mill burned down in 1887 . The Wyoming Division Canal , which was constructed in the 1830s , started at Solomon Creek . Construction of the Ashley Planes in the Solomon Creek gap began in 1837 . They were used until 1848 . An iron @-@ producing forge operated on the creek in Ashley until 1839 . There was also a sawmill on it until 1839 . A powder mill operated on Solomon Creek , but was replaced with a brewery by 1885 . A slaughterhouse discharged its waste into the creek in the early 20th century . The creek was used as the water supply for the Huber Breaker from the 1930s to the 1970s . The Wilkes @-@ Barre and Hazleton Railway passed over Solomon Creek .

Mining has been done in the Solomon Creek watershed in the past , causing considerable environmental damage . The mining began in the beginning of the 1800s and continued until the 1970s . However , there was one strip mining permit in the watershed in the late 1990s . Starting in 1967 , the mine pools under the creek stopped having water pumped out of them . This led to them flooding and damaging buildings in the watershed in 1972 during Hurricane Agnes . To remedy the problem of the flooding , the Buttonwood Tunnel and three boreholes known as the South Wilkes @-@ Barre Boreholes were created . The water quality of the creek was assessed in 1970 as part of Operation Scarlift . A 1977 study by the Pennsylvania Fish and Boat Commission observed brook trout inhabiting the watershed , although the stream was listed as impaired on account of the mining . A plan called the Solomon Creek Cold Water Conservation Plan was initiated in the summer of 2011 and continued into 2012 .

A mine fire known as the Laurel Run mine fire started burning in the watershed of Solomon Creek since 1915 , when a miner accidentally left a carbide lamp hanging from a timber support in the Red Ash Coal Mine . The lamp caused the support to catch fire . The fire may continue into the 22nd century . The fire was contained in 1973 , but was not extinguished . Had the fire not been contained , it would have eventually spread under the entirety of the Wyoming Valley . The fire burns between 200 feet (61 m) and 300 feet (91 m) underground at a temperature of approximately 1 @,@ 000 ° F (538 ° C) .

The creek flooded in September 1850 . It was the most severe flood of the creek up to that time . In January 1996 , 400 buildings along Solomon Creek flooded by it due to melting snow . This was one of numerous floods on that area of the creek .

= = = Alternate names = = =

Solomon Creek was also been called Chester Creek and Solomon Creek by locals . It was called Moses Creek on maps of Pennsylvania created by William Scull in the 1770s . This last name may be named after an Indian , although it is not known for sure .

= = Biology = =

In 1975 , a study found no fish species on the creek . However , brook trout have been observed at seven locations on Solomon Creek . Brook trout are especially common on the tributary Sugar Notch Run . Trout reproduce everywhere in the tributary Pine Creek and reproduce in the main stem as far downstream as southern Wilkes @-@ Barre . Above of the South Wilkes @-@ Barre borehole

, a number of other fish species have been observed . These include blacknose dace , bluegill , creek chub , fallfish , minnows , northern hog sucker , and white sucker . However , there are no species of fish downstream of the borehole . Out of 46 sites on the creek , 30 had sufficient macroinvertebrate concentrations to support trout . 2 @. @ 6 stream miles in the watershed are home to brook trout fisheries . This area is in Hanover Township , Laurel Run , and Bear Creek Township .

The most common aquatic insects at the headwaters of unimpaired streams in the watershed of Solomon Creek are alderflies , caddis flies , dragonflies , mayflies , and stoneflies . Three sites in the watershed are considered " suboptimal " according to the WVSOS system . 20 sites are considered " marginal " and the remainder are " poor " .

= = Recreation = =

The Pennsylvania State Game Lands Number 207 are located in the southeastern part of the Solomon Creek Watershed . They take up 6 @. @ 7 % of the watershed . Parts of Pinchot State Forest are also in the watershed ; the forest occupies 12 @. @ 6 % of it . Two of the trails in the 139 @- @ acre Sugar Notch Trail System are located in the sub @- @ watershed of Sugar Notch Run . The creek is stocked with trout in some places . There are ATV trails in the watershed .