



February 6, 2015

Mr. John Quigley
Chairperson, Environmental Quality Board
Acting Secretary, Department of Environmental Protection
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Re: Support of Paradise Creek Watershed Stream Redesignation Petition

Dear Secretary Quigley,

The Delaware Riverkeeper Network (DRN) is writing to share our support of the stream redesignation petition submitted by the Brodhead Chapter of Trout Unlimited on June 17, 2014 for Paradise Creek and of its tributaries including Devil's Hole Creek (which is partly already designated EV), Yankee Run, Tank Creek, and its unnamed tributaries that flow through Monroe County, PA into Brodhead Creek and the Delaware River. A groundwater protection study conducted for Paradise Creek in 2005 stated that the watershed area encompasses 43.77 square miles. The Paradise Creek has many attributes that make it deserving of special protection and that make the current Chapter 93 designations that are not EV inaccurate. DRN is delighted to see efforts to upgrade this entire watershed to Exceptional Value (EV) status to secure for this healthy tributary its proper designation. We appreciate the attention the PADEP is providing in these efforts. In support of those efforts, we would like to highlight characteristics of Paradise Creek and the larger Upper Delaware River Basin pertinent to criteria for qualification as an EV stream.

Paradise Creek was part of Delaware Riverkeeper Network's regional redesignation petition that was submitted to the PA DEP on December 9, 2011 with broad support from 20 organization co-petitioners and 150 individual co-petitioners. Since Paradise Creek is part of this unique Upper Delaware Basin, DRN requests that PA DEP consider the qualifiers laid out in the Delaware River regional petition package for Paradise Creek that will help provide additional evidence that this region and this tributary is deserving of EV protections. The petition for the Upper Delaware was submitted to PA DEP and the petition can also be found here: <http://bit.ly/DRN-UpgradeUpperDel>.

In this larger Upper Delaware regional petition, DRN and co-petitioners provided data and evidence that this region, including the Paradise Creek, largely made up of HQ waterways and tributaries, be considered for

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EV because of specific qualifiers the region obtains. These qualifiers are outlined in the petition and included: **§ 7.3(f)(ii)(C): The Delaware River is an outstanding national, state, regional or local resource water;** **7.3(f)(ii): EV Qualifiers** - The majority of streams in the proposed upgrade area already have HQ designation; **§ 7.3(f)(ii)(B): Location in a State Park Natural Area, State Forest Natural Area, National Natural Landmark, Federal or State Wild River, Federal Wilderness Area or National Recreational Area** - The proposed upgrade area of the Upper and Middle Delaware River includes National Natural Landmarks, State Park Natural Areas, Federal Wild & Scenic River designation, and National Recreation Areas; **§ 7.3(f)(ii)(G): Surface water of exceptional ecological significance.** With an abundance of Important Bird Areas, Important Mammal Areas, Natural Heritage Areas, E&S species, glaciated wetlands, and State Gamelands and Forest lands, this region is ecologically significant.

Below are just some of the highlights of this region that make Paradise Creek and its surrounding tributaries and the Delaware River to which it eventually flows deserving of EV protection.

Initiatives of Protection and Government Partnership & Abundance of Forest Cover

The proposed upgrade region of the Upper and Middle Delaware Watershed is home to the “Pocono Forest and Waters Conservation Landscape Initiative”. This CLI encompasses tracts of land within Carbon, Pike, Monroe, Lackawanna, Luzerne, and Wayne counties. The region is notable for its large expanses of ecologically sensitive lands and vast recreational opportunities. The Pocono Forests and Water region for example, contains approximately 54,536 acres of state parks, 115,000 acres of state forests and several hundred miles of trails and other outdoor recreational facilities such as hunting and fishing clubs. The region also is composed of the highest concentration of wetlands within the state of Pennsylvania. Although this region contains merely 8% of the state’s land area, it harbors over 20% of the state’s wetlands, 4,700 miles of streams, and 74 miles of lakes and ponds. Many of the headwaters and tributaries of the Paradise Creek flow within State Gamelands 221.

The community also developed the Paradise Creek Watershed and Restoration Protection Plan, with help from a PA Growing Greener Grant from the Pennsylvania Department of Environmental Protection for \$299,289.00. The grant was awarded in August 2002. Significant resources have been developed and summarized for this Basin, indicating strong community and state support for this stream’s protection. The Plan can be found here:

<http://www.brodheadwatershed.org/ParadiseCreek/aboutproject.htm>. Part of the protection plan included an impervious cover analysis that calculated the Paradise Creek Watershed is estimated at 3.63% impervious cover. For all sub-basins of Paradise Creek analyzed, the majority of the land surface area consisted of total forest. There were also sections of residential forest but by far total forest dominates this watershed¹. A groundwater protection study was also conducted as part of this work, indicating the strong commitment locally to sustainably manage this potential high growth area.

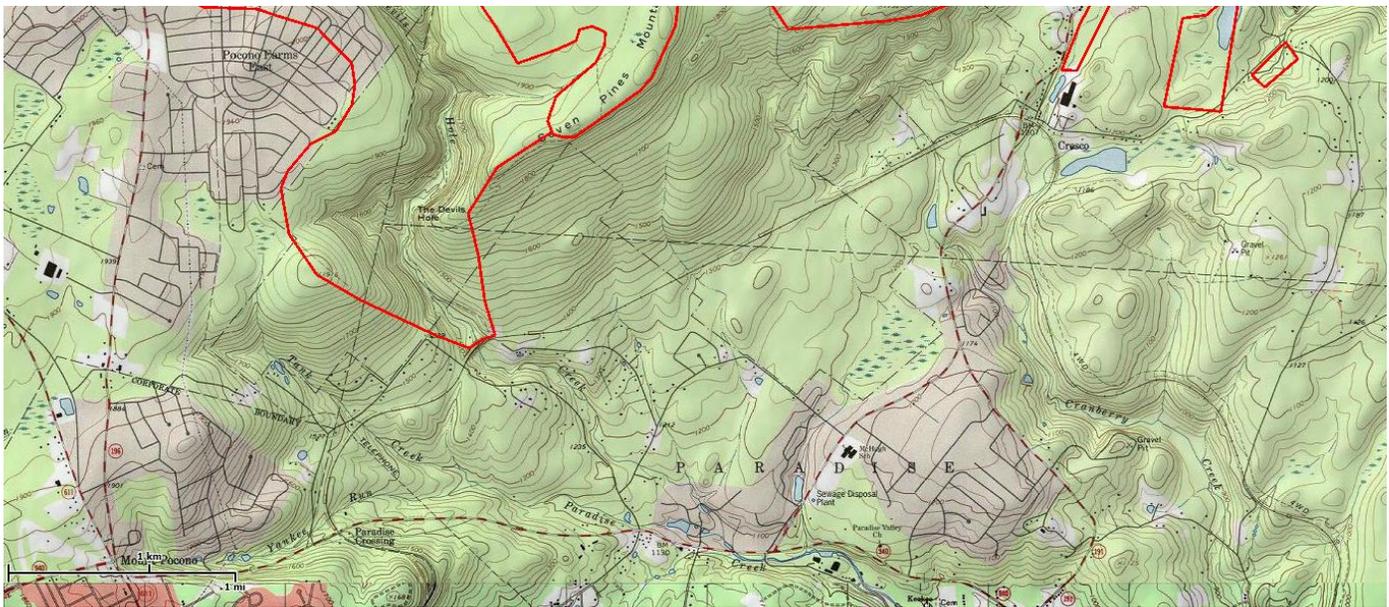
Drinking Water Supply – Brodhead Creek and the Greater Delaware River Basin

Not only is the Delaware River drinking water to 19 million people, but the Paradise Creek flows into the Brodhead Creek which is the drinking water supply for Brodhead Creek Regional Watershed Authority (BCRA). BCRA serves water to over 5,400 billing accounts representing a population of approximately 21,000 people in residential, commercial, public and industrial settings. BCRA also has done much education and outreach to educate residents to the importance of watershed protection. With help from the League of Women Voters and others, they have launched the Dr. Waters program

<http://www.drwaters.org/?itemCategory=37279&siteid=300&priorId=0>.

Potential for EV Wetlands

Much of Paradise Creek Basin is part of the Pocono plateau. Bog Turtles inhabit open, unpolluted emergent and scrub/shrub wetlands such as shallow spring-fed fens, sphagnum bogs, swamps, marshy meadows, and wet pastures. The Army Corps of Engineers notes that parts of Monroe County are abundant with wetlands that are known habitat for the endangered bog turtle (*Clemmys muhlenbergii*). The bog turtle is endangered in Pennsylvania and was federally listed as a threatened species in 1997. In Pennsylvania law, a surface water of exceptional ecological significance meets the necessary condition for designation as an EV stream. A search of the online PNDI mapping system did not indicate bog turtle presence but topographic maps do show several large wetland areas within the Paradise Creek Basin that could potentially be habitat for the bog turtle. A wetland just north of the McHugh High School and the headwater wetlands of Tank Creek, and wetlands near the headwaters of Cranberry Creek for example, could be potential habitat for this endangered species. These wetlands might also be considered a unique habitat with ecological significance due to the regions glacial features. Nearby wetlands adjacent to this watershed also indicate wetlands like Lon Price Marsh that are noted for good wildlife habitat.



Pennsylvania defines surface water of exceptional ecological significance as “[a] surface water which is important, unique or sensitive ecologically, but whose water quality as measured by traditional parameters (for example, chemical, physical or biological) may not be particularly high, or whose character cannot be adequately described by these parameters.” These waters include wetlands which are exceptional value wetlands under § 105.17(1) because they serve as habitat for fauna or flora listed as threatened or endangered under the federal Endangered Species Act.

Furthermore, the petitioner highlighted that Paradise Creek is on the Wild Trout List due to the presence of naturally reproducing brown trout. As such, all wetlands in an along the floodplains of the Paradise Creek and its tributaries would be classified as EV which underscores the need for EV designation for the Paradise Creek. .

The Delaware River is Designated a Wild & Scenic River

Three quarters of the non-tidal Delaware River is designated a National Wild and Scenic River. One section extends 73 miles from the confluence of the River's East and West branches at Hancock, N.Y. downstream

to Milrift, PA (the second is a 40-mile stretch from just south of Port Jervis, N.Y. downstream to the Delaware Water Gap near Stroudsburg, PA (both designated in 1978). Combined, these two river corridors take in 124,929 acres and make up a large part of the proposed upgrade area in this petition. The Lower Delaware Wild and Scenic Rivers Act, signed into law on November 1, 2000, added another 38.9-mile section of the main stem Delaware (and about 28 miles of selected tributaries) to the national system, linking the Delaware Water Gap and Washington Crossing, PA, just upstream of Trenton, N.J. Sections of the Maurice River in New Jersey (a Delaware Bay tributary) and the Musconetcong River in New Jersey (a Delaware River tributary), as well as the White Clay Creek in Pennsylvania and Delaware (which flows into the Christina River, a tributary to the Delaware) also have been included in the national system. According to the National Park Service's web site, the U.S. has 3.5 million miles of rivers, but only about 12,600 river miles (just over one-quarter of one percent) are included in the National Wild and Scenic Rivers System, making the Delaware River a crown jewel for the nation and the northeast. The Wild and Scenic Rivers Act states that the River must be protected in its free-flowing condition and that it must be managed for the benefit and enjoyment of present and future generations.

The Delaware River is a world class fishery

The Upper and Middle Delaware is recognized by sportsmen and fisheries biologists as one of the finest fishing rivers in the northeastern United States. The River offers a high quality fishing experience in close proximity to major metropolitan areas. According to the 1976 New York Angler Survey, the Upper Delaware is one of the five most heavily fished river areas in the state. In 1982, it was estimated that there were nearly 60,000 angler days for the river area between Hancock and Port Jervis. Since 1978, the estimated fishing days in the 27 mile reach between Hancock and Calicoon have increased by ninety percent.

In Delaware, New Jersey, New York, and Pennsylvania, the U. S. Fish and Wildlife Service (2008) estimated the annual economic value of fishing, hunting, birding and wild-life/bird watching recreation was \$9.2 billion in \$2006. Trip-related expenditures include food and lodging, transportation, and hunting, fishing, and wildlife watching equipment. The Delaware Basin includes 50% of Delaware's land area, 40% of New Jersey's land area, 5% of New York State's land area, 14% of Pennsylvania's land area. Prorating based on the ratio of the area of the state within the basin to total state area, estimated economic value of fishing, hunting, and wild-life associated recreation in the Delaware Basin is \$1,477 million/yr in \$2006 or \$134 million/yr in Delaware, \$574 million/yr in New Jersey, \$160 million/yr in New York, and \$608 million/yr in Pennsylvania (see University of Delaware's Socioeconomic Report for more details).

The annual economic value of recreational fishing to the Upper Delaware area has been estimated at nearly \$5,000,000. Fisheries biologists from Pennsylvania and New York recognize the upper segment of the River as one of the foremost trophy trout streams in the Northeast. Depending on the time of year and volume of cold water releases from tributary reservoirs, this significant trout fishery ranges between the hamlets of Hancock and Calicoon. Trout and other fish have been subjected periodically to extreme changes in flows and water temperature due to sudden changes in the release schedules of the upstream reservoirs. American eels are found throughout the corridor, sustaining one of the finest commercial eel fisheries in the world during the fall, when mature eels return to the sea to spawn.

The Upper Delaware also provides key spawning and nursery habitat for the American shad along its entire length. The Delaware is the only natural shad river in the Northeast (from Maine to West Virginia) that is sufficiently free of man-made barriers and industrial pollution to allow passage of these migratory fish to their upper reach spawning habitats. According to the NY Dept of Conservation 2009 report, up to 750,000 American shad migrate to the upper reaches annually. The most important spawning occurs above the Delaware Water Gap, with nursery areas at or downstream of spawning grounds due to the downstream dispersal of young shad. The most important nursery areas are located from Belvedere to Hancock and up into the East Branch, and centered near Tusten and Lordville. The American shad

spawning period runs from mid-April through June. From Port Jervis up into the East Branch the peak of the spawning period usually occurs in June due to the slower warming waters. Populations of American shad along the Atlantic coast have been declining in recent years. Protection of exceptional spawning habitat for this species in the Delaware River is critical to its overall sustainability.

It has been reported by the Pennsylvania Fish and Boat Commission that in 1986, recreational shad fishers fishing on the Delaware River for shad spent about \$1.6 million during just a 9 week fishing season; in 2007 this would be equivalent to approximately \$3 million. PAFBC 2011 reports show that shad fishers are willing to spend twice as much as this (\$3.2 million in 1986 dollars; \$6.5 million adjusted in 2010 dollars). This is an important boost for local economies to the Delaware River with ripple effects beyond. According to a 2011 University of Delaware Report, the annual value of fish landings in the tidal Delaware River and Bay is \$25.4 million in \$2000 or \$34.1 million in \$2010 as reported to the National Marine Fisheries Service and tabulated by the National Ocean Economics Program (2007). The most lucrative fisheries in the Delaware Estuary as blue crab (\$14.4 million/yr), summer flounder (\$5.3 million/yr), Atlantic menhaden (\$4.3 million/yr), eastern oyster (\$3.7 million/yr), striped bass (\$2.3 million/yr), and American eel (\$0.8 million/yr).

PA Fish and Boat Commission and Wild Trout Waters

The Broadhead Creek Chapter clearly outline in their petition the importance of the Paradise Creek as a wild trout stream and DRN also highlighted parts of the Paradise Creek back in 2011 in the regional petition: <http://fishandboat.com/hotspots.htm>. Electroshocking studies of sections of the Paradise Creek watershed in multiple years yielded young of the year brook trout and healthy populations of wild brown trout. For example in 1998 electroshocking of the Paradise Creek, yielded biomass values over two to three times the PA Fish and Boat Commission standard for Class A Wild Brown Trout Waters. Biomass values were 84.8 pounds per acre at the upstream station and 157.8 pounds per acre downstream. The criteria for PA Fish and Boat Commission standard for the very best wild trout waters in the state is 40 pounds per acre for brown trout with evidence of reproduction.

Good Water Quality

Delaware River Basin Commission (DRBC) conducted water quality monitoring in Paradise Creek Watershed in June, 2004 – samples were collected monthly. DRBC characterized the water quality as excellent for the watershed with healthy dissolved oxygen levels, temperatures, pH and percent DO saturation levels. TDS levels were also indicative of healthy conditions. That DRBC report can be viewed at: http://www.brodheadwatershed.org/ParadiseCreek/download/Water_Chemistry.pdf

Finally, Delaware Riverkeeper Network understands there has been much community support to preserve this region. Residents in Monroe County have a great love and a dedication to preserving stream health; as noted by the petitioner, this region is a historic fishing and favorite angling location. The Brodhead Watershed Association, Trout Unlimited presence, Delaware River Basin Commission studies, and Monroe County's continued monitoring and planning efforts, and the Growing Greener Paradise Plan help show this local, county, regional, and state commitment.

We appreciate PADEP's consideration of our comments and your efforts to ensure that the Paradise Creek antidegradation assessment fully considers all of this Watershed's unique attributes and good water quality. If you have any questions or need additional information please do not hesitate to contact DRN's Monitoring Director Faith Zerbe at 215-369-1188 ext. 110 or faith@delawariverkeeper.org.

Sincerely,

Maya K. van Rossum

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the Delaware Riverkeeper
Delaware Riverkeeper Network

cc. Mike Kauffman, Pennsylvania Fish and Boat Commission
Josh Lookenbill, PA DEP
Laura Edinger, Regulatory Coordinator, PA DEP
Brodhead Watershed Association
Monroe County Conservation District
Brodhead Chapter of Trout Unlimited

ⁱ CEMRI for the Paradise Creek Watershed. Rachel Riemann, Research Forester/Geographer, Northeastern Research Station, USDA Forest Service, c/o USGS, 425 Jordan Road, Troy, NY, 12180, 518-285-5607, rriemann@fs.fed.us.
USDAForestServiceProjectDescription.txt (<ftp://www.pasda.psu.edu/pub/pasda/delwatergap/>)