

# An Interview With Pete Goodman

Carol Armstrong May 5, 2021 No Comments Stories

## Wisdom and Advice on Watershed Protection From a Prodigious Environmental Leader You've (Possibly) Never Heard Of



Photo of Pickering Creek by [Matthew Brink](#), CC BY-NC-SA 2.0.

### Introductory Message

- Working at a watershed level within the reality of government boundaries and development pressures requires asking the right questions. However, even though a person may be knowledgeable, they may not know how to ask the right question or even what the right question is to elicit answers that adequately resolve or correct a situation.
  - Can environmental engineering reasonably estimate the effects of stormwater? We cannot engineer ourselves out of every abuse we inflict on our natural world, and we need a paradigm shift in the way we think about using land and resources.
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- What does it mean to “fight” threats to a stream? It means committing to protect a stream as Liquid Life, as inspired by the beliefs of Native Americans and First Nation People, and not as a resource to own, use, or monetize.

## 1. How did you get involved in stream protection? Was there an event or issue that spurred you on?

I spent my childhood exploring little springs and seeps and whatever natural water I could get into. I used to live in Bryn Mawr, Pennsylvania, and in the back was a headwater of Cobbs Creek, part of which became piped along with the stormwater system of our development. That was the original stream that I played in. After moving to Chester County, Pennsylvania, I watched the changes in the streams. For example, the wooded areas above Pickering Creek are more mature but have lost diversity. The changes in the streams are less due to nature than the changes caused by human land use. We need more species diversity put back into woodlands.

## 2. You owned a business, had a beautiful family, and worked on stream restoration and watershed conservation. What did you see or learn that led to your going above and beyond to dive deep into stream protections?

Running a business and raising children left me with no time for activities outside of the family at first. But I was drawn in by both seeing the streams piped and the effects of stormwater on land erosion and fish habitat and meeting a mentor who saw my potential for picking up the fight to prevent bad housing developments.

My involvement accelerated as I shared my interests with [Valley Forge Trout Unlimited](#) (VFTU), where I may have been an original member of the chapter around 1976, but I was always interested in stream ecology and restoration. One of my mentors, Carl Dusenberre, was tired of fighting developers, watching how developments happened, and wanted me to take over his efforts pertaining to the threats to streams in Tredyffrin Township. He convinced me to take on the difficult work of analyzing properties in the watershed, which I researched at the recorder of deeds office, and of bringing relevant information to bear at Tredyffrin Township Planning Commission, Board of Supervisor, and Environmental Advisory Council (EAC) meetings.

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### 3. It is often difficult to accomplish changes in municipal ordinances to improve impacts on streams. Could you talk about how this was achieved in Tredyffrin Township, which is the largest township in population in Chester County?

Mitzi Toland, who started the Tredyffrin Environmental Advisory Committee (EAC), drafted me to be on the Board of Open Lands Conservancy, and as part of this, I attended many government meetings in the early 2000s to watch developments in Tredyffrin and other townships such as East Whiteland. Both of these townships were allowing a great deal of development, and we, at Trout Unlimited, had a specific interest in managing stormwater runoff from developments of any moderate or large size. Around 2002, the Tredyffrin stormwater ordinance was rewritten, and I worked on this through VFTU, with the Natural Resources Manager at Valley Forge National Historical Park (VFNHP), and with an engineering firm (Cahill and Associates) that was active in trying to create a much better stormwater ordinance there.

I met Michelle Adams at Cahill and Associates, with whom I worked on the turnpike issues (*see #6 below*) and who later started her own firm when Cahill was sold. An improvement we were able to achieve was to bring technical changes to the stormwater ordinances to achieve current standards. Their existing stormwater ordinance was limited in scope, and applications did not require stormwater management for a two-year design storm that had become the standard by then.

The engineer at the time was old school and not familiar with infiltration and green infrastructure. Over time, that engineer retired and his subordinate took over the engineering duties, and he eventually took the engineer position in Radnor Township Tredyffrin hired another engineer who was inept, fired him, and ultimately hired Steve Burgo, who had been employed at the Pennsylvania Department of Environmental Protection (PADEP), and had previously been with Cahill.

When Steve came to Tredyffrin, he already understood what stormwater was, offered good concepts for management techniques, and knew how to achieve them. It didn't take him too long before they rewrote the stormwater ordinances again, such that they now have one of the strongest stormwater management codes in southeastern PA.

VFTU is now looking for someone to take over the environmental monitoring of Tredyffrin streams and stormwater management. Most of the time commitment comes in the early stages – once you understand who the players are and they know you, it becomes easier because the township and

others begin to call TU when developments are coming through. Send a message to Pete Goodman through the [contact form](#) if you are interested.

## 4. What was critical to motivating your continued work on stream protection?

In addition to VFTU, meeting environmental engineers with better knowledge of how to design developments that controlled stormwater runoff more effectively was very motivating. I met critical individuals who also were fighting the threats to our streams and ecologies, such as Rod Horton, John Johnson, and Owen Owens. Rod had trouble putting his thoughts into words, and he devised projects to cool the planet. He was a mathematician from GE Aerospace. John Johnson was a big help to me. He was from West Chester Fish, Game, and Wildlife Association (WCFGWA) and a VFTU board member.

I felt that the environmental organizations did not talk together very much and that they tended to stick to their niche and purpose, which might still be true. They are only drawn together when someone has a universal problem, such as during the mid-1990s, when VFTU put together a coalition to sue PennDOT and Vanguard — Vanguard for their development which did not include good stormwater management, and PennDOT for expanding Rte. 202 and not meeting the requirements of stormwater management in the Exceptional Value (EV) Valley Creek watershed.

The Coalition included Open Lands Conservancy, WCFGWA, Green Valleys Watershed Association, Delaware Riverkeeper Network, and Raymond Profit Foundation (a legal organization that defended the environment), who were named in the lawsuit. It ultimately resulted in the Valley Creek Settlement Agreement, but without Vanguard, which forged ahead with its plans and construction while fighting off the lawsuit and creating delays by requiring more discovery. Vanguard had built their project by the time the lawsuit settled.

The PADEP settlement stated that they would consider the cumulative effects of any new developments in the watershed, but as time went on, their budget was hacked, and people left until there was nobody remaining who even knew there was a settlement agreement. The PADEP's attention to cumulative effects of new development on the watershed has not come to pass in the long run. The settlement was a big admission by PADEP that they were not paying attention to the EV rules in the Valley Creek watershed.

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The PADEP came back to us just before trial and offered the settlement. They subsequently issued a guidance paper that said if you could infiltrate a 2 inch-24 hour storm, it would meet stormwater requirements. Although storms have become increasingly severe, I don't believe that the "standard" has lost its effectiveness; I think it is more that it wasn't based on science but rather in quasi-engineering. The regulations are an attempt to write something that controls stormwater runoff yet easy enough that an engineer can make a calculation to yield an outcome. After all, the reason for the regulation is to control what developers do or don't do. There are so many variables that go into stormwater runoff, such as soil types, permeability, saturation, slope, and land use, that it makes it practically impossible to estimate the pre- and post-runoff from a given property accurately. Each square foot could be different and generate significantly different runoff.

My objection to the current manner in which the calculations are done is in the use or misuse of runoff coefficients. They certainly seem to be applied arbitrarily, at least by some engineers. It is a place to cheat.

So, you have that set of issues above, and then you have the municipalities with their own sets of rules that are just a bit different from each other, and the submission requirements are different. Pennsylvania, with its Commonwealth rules, is pretty much a mess. This is especially true when you consider that very few watersheds follow municipal boundaries.

How much damage is done is a hard question to answer. It depends on your starting point, I suppose. Is Valley Creek better than it was 20 years ago? I don't think so but I have little hard evidence to prove that. It hadn't changed as far as its arrangement of pools and riffles and runs for about 20 years until about 3 years ago. Now there seem to be big changes that happen over the course of each year with severe weather. I was pessimistic about the temperature of Valley getting too high for trout survival, but that fear has been replaced by the salinization of Valley Creek. The chloride levels now appear to be the doomsday for Valley rather than the temperature.

All of the changes we have seen over the past 20 years to the land use are like a "Death by a Thousand Cuts"; no matter how much stormwater management we do, it will never compensate for our past practices. As Rod Horton used to say, if we have used up 30% of the ground, we only have 70% to work with, and that 70% is going to have to do the work of 100%. To put the admonition differently, each stormwater management facility should be doing the work of its site plus some percentage of the work needed to control uncontrolled sites.

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## 5. The Valley Creek Restoration Partnership was a unique coalition for its time. Could you give their story?

The [Valley Creek Restoration Partnership](#) (VCRP) was suggested by Owen Owens around 2000 to restore the EV Valley Creek watershed from the headwaters downstream, focusing on controlling stormwater runoff. The Paoli Rail Yard Restoration funds (from the PCB Superfund legal settlement) would be a catalyst for moving the partnership forward. The Partnership did not have its own budget. To fund the projects that the VCRP envisioned, it would rely on its members. A member of VFTU and friend of Owen Owens, an attorney, Andy Schaum, who was also Director of Paradise Farm Camps, suggested making the group of nonprofits the controlling members and invited others as advisors.

The founding members included Open Land Conservancy, Green Valleys Watershed Association, VFTU, WCFGWA, and League of Women Voters. The advisors were Cabrini College, Drexel University, Villanova University, Stroud Water Research Center, Meliora Design, Viridian Landscape Studio, and PECO. Governmental partners were VFNHP and U.S. Geological Survey, Pennsylvania Fish and Boat Commission and PADEP, Chester County Conservation District and Chester County Water Resources Authority, and East Whiteland and Tredyffrin Townships. Other municipalities were invited but did not participate.

There was great interest in restoring the headwaters because so much pollution was flooding the VFNHP where Valley Creek merges with the Schuylkill River. I would work with anyone on anything that improved any stream and reduced stormwater.

*The results of the many projects and activities coming out of the VCRP earned them the Pennsylvania Governor's Environmental Excellence Award in 2019 and are described in the application. [See a list of their grants.](#)*

## 6. Was it difficult working with local governments?

Over the 20 years that I have been monitoring the streams, the political swings have been interesting. I saw relationships with the Tredyffrin Township Manager and the Board of Supervisors deteriorate over time until the Manager left. She left at a young age and is now the township manager for West Whiteland. A very Republican-dominated government slowly became more Democrat, and political tensions and snags created a very difficult work environment.

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A sanitary sewer line that runs through Valley Forge National Historical Park broke at the intersections of Route 23 and 252 twice in the same place. There were three sewer breaks in that line in two years. Two times, in order to take the pressure off the line and stop the flow, Tredyffrin shut the line off at their pump station two miles upstream and discharged the flow into the Valley Creek there.

VFTU thought that there had to be a better way to do that than to contaminate two miles of the creek by moving the discharge point two miles upstream from the break.

VFTU threatened to sue Tredyffrin in partnership with Penn Environment, and filed, but the repair work had already been done, and the damage had already been corrected. Tredyffrin entered into an arrangement with PADEP that essentially shut down the lawsuit because they were in compliance with PADEP in the end. VFTU lost this ability to sue Tredyffrin under the Clean Streams Law.

## 7. What project was the most challenging?

In January of 2016, Tredyffrin signed a settlement agreement with the Pennsylvania Turnpike Commission (PTC) regarding its plan to widen the turnpike, which stated that the PTC would not have to adhere to all of Tredyffrin's stormwater ordinances. That broke VFTU's relationship with Tredyffrin for a while. The PTC entered into a settlement agreement with Tredyffrin over the fact that they couldn't meet Tredyffrin ordinances. For example, Tredyffrin required a reduction of the rate of discharge of a 10-year storm to be equivalent to a 2-year storm, but the PTC said they could not do that in certain places. The Turnpike stated it would not sue Tredyffrin (for not being able to go ahead) and settle if Tredyffrin said the PTC would not have to meet all the township ordinances so that the PADEP would allow the project to go ahead.

Ultimately, after appealing the PTC's NPDES Permit, VFTU offered to negotiate a settlement agreement based on our accepting the PTC's best management practices (BMP) for stormwater management footprints but placing all other aspects of the design on the table. VFTU was convinced that the BMPs would not function as originally designed. There were built-in safeguards to bypass the BMPs, such as underdrains with easily accessible valves. VFTU stated those should be removed because they would allow an easy way to bypass a nonfunctioning BMP. VFTU agreed to allow the capping of the underdrains rather than remove them in the design. The PTC felt they needed the underdrains for maintenance purposes. Meetings regarding the technical aspects were good with the PTC project manager, their stormwater consultant, the VFTU engineers, and National Parks Conservation Association's (NPCA) expert engineer.

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Another design issue that needed correction was that there was no soil specification for the soil used in the bioretention basins or the detention basins. In the bioretention basins, they used the soil filtration rate as the medium to establish the rate of discharge: whatever percolated would be the rate of discharge. However, in the slip ramps, there were native soils that plugged up the infiltration basins. VFTU and NPCA engineers requested a robust specification for the soils that needed to have little or no clay in the mixture, and mechanical controls were needed to restrict the rate of discharge to that required by ordinance or regulation.

There are many BMPs along the 4.5 miles of the Turnpike in the Valley Creek watershed in Tredyffrin. There are above and below ground infiltration basins, bioretention basins with storage under the soil (for overflow), overland (e.g., for discharge to a level spreader and drainage ditches), all of which directly or indirectly flowed to Valley Creek and its tributaries or into a series of other basins with eventual overflow into Valley Creek. Some of the BMPs discharged into large concrete vaults designed to store large volumes of water that would release slowly, and VFTU negotiated to decrease the rate of discharge and allowed the storage volume to increase.

VFTU, NPCA, and PTC spent a lot of time on constructability, because the drawings they worked from did not have sufficient detail to show the contractors how to actually build the basins, e.g., the additional storage areas below vegetated storage areas. These under-storage areas were separated from infiltration due to the limestone geology. They needed an impermeable lining at the bottom, with a series of pipes and stones and another impermeable liner, with a bioretention basin set on top of that. They had little right-of-way space to put the project, and additional properties were purchased or taken by eminent domain to store six lanes of turnpike stormwater. Thus they excavated down for extra storage capacity and put retention basins on top of the storage. Because of the permeable limestone, they needed to use impermeable materials. The rate of discharge was from the bottom orifices. The time course for beginning to build this expansion to six lanes will possibly be in 2-3 years.

## 8. What other projects have been important in your work as a conservationist and environmentalist?

Beginning around 2005, VFTU spent several years negotiating stream daylighting and stormwater management at the Uptown Worthington development, where the old Worthington Steel had been. The Worthington Steel parking lot had put Little Valley Creek in a pipe for about 1,000 feet. The PADEP required the developer to daylight the stream, and VFTU was asked by the developer to

review his plan. Essentially the developer was going to put little Valley Creek in a narrow concrete canyon. VFTU advised that PADEP would never allow this on an Exceptional Value Stream. We recommended that they be in touch with some stream design experts. The developer ultimately took our recommendation to work with a stream design professional, and I feel the project turned out pretty well.

Stormwater Taskforce in Tredyffrin: The VCRP was thinking of a Stormwater Taskforce proposal to the Board of Supervisors. I was invited to be part of the Stormwater Taskforce after I did a presentation on the State of Streams of Tredyffrin for the Supervisors and township residents. Some key Tredyffrin residents (Anne Murphy and Ray Clarke) pursued the Taskforce idea with a couple of key Supervisors. The Supervisors created citizens Stormwater Task Force and approved the Taskforce, with a life of 18 months. It was timely because of the many and severe stormwater runoff problems that occurred in Tredyffrin in 2018-19.

[The Taskforce](#) is examining all aspects of stormwater; they developed a survey that went out to the residents of the township and received over 125 responses from people having stormwater issues. The issues were discussed specifically with each resident. The Taskforce is mapping the responses to identify priority areas of the township, but thus far found that the stormwater problems are throughout the township.

There are subgroups; I am working on Ordinance Review, comparing Tredyffrin's ordinances with those of more than a dozen other townships, looking for aspects helpful in updating and making ordinances stronger. I am also involved in looking at canopy and tree protections. Anne Murphy compared tree coverage in 2015 and 2020 with the iTree program and found a more than 10% reduction in canopy cover. Nevertheless, the township is permitting forest removals for a Conestoga High School parking lot.

While the stormwater ordinances were found to be quite strong, the status of the trees is problematic, and the group is leaning towards a natural resources protection provision in the zoning ordinances, which applies to more residents within the township. There is an Education Committee, which will provide input to the final recommendations. All of this is being done in conjunction with a municipal planner who is a member of the Planning Commission in Tredyffrin, and by volunteer environmental conservationists.

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There is interest in the township about stormwater problems, and thus far, the recommendations are being taken very seriously. Another committee on Financing may propose a stormwater fee for Tredyffrin for a permanent funding source for infrastructure and repairs to infrastructure that will be necessary, such as collapsing culverts. Final Taskforce findings have not yet been presented.

## 9. What have you learned about watershed conservation and protection that most people don't know?

We changed the land too much to ever restore even the smallest streams. The thing that people might think is true but isn't, is that environmentalism is easy. There is both misunderstanding and apathy — people are not concerned, especially about our flowing waters.

Pennsylvania's [Clean Streams Law](#) was first passed in 1937 and amended through the years; things got better. The public thinks clean streams are no longer a great concern because rivers aren't burning, and we're not killing 10 million fish at a time. But we still are, and yet we don't hear about it that way. At the Salem Nuclear Plant, they are killing many fish every year. This is just an example of a widespread problem. Each place there is a water intake to cool a power generating station, or every hydroelectric dam where generators are driven by impellers, the fish are being chewed up. Dams are ruining habitats because there is no free-flowing passage for fish.

## 10. What do you now see as the biggest threats to our streams?

We stopped stocking trout in Valley Creek in 1986. The streams got better and better until about 1993 or 1994 and have been slowly declining since. There are too many outside influences to be able to find pointed blame, but overall it is mainly because of stormwater discharges.

My adopted home waters are Valley Creek and the Pickering, as I live on the divide between the two. Valley Creek is very special to me because it is home to wild brown trout and is the only stream in southeastern Pennsylvania that has wild trout throughout the watershed. When I was seeing the threats, I thought the demise of Valley Creek would be due to increasing temperatures that might extirpate the trout there, but even with the ravages of temperature, sediment, and pollution, they are surviving. The salinization of the stream and soils might be their biggest threat going forward.

It has been interesting to be retrospective. There's always another fight to fight in the future, no time to look back.

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