

# Springs & Sinks

Newsletter of the Spring Creek Watershed Community

## ★ SPECIAL ELECTION QUIZ ★

### County Commissioner Candidates Respond to Watershed Questions

Five of the six candidates for County Commissioner in the November election responded to questions posed by the Coordinating Committee of the Spring Creek Watershed Community in an effort to help stakeholders learn how the candidates stand on watershed and land-use issues.

The two Republican candidates are Connie Lucas and Lee Shields. The two Democratic candidates are Keith Bierly and Scott Conklin. The Libertarian Party candidates are Julian Hecklen and Carla Moquin; Moquin did not respond. The responses are in alphabetical order after each question.

*1. Spring Creek is a priceless natural feature of Centre County. But it also receives most of the treated sewage effluent and storm-water runoff from the populated areas around Bellefonte and State College, as well as agricultural runoff from rural areas. What role should the County play in protecting Spring Creek?*

**Bierly:** The creation of the Spring Creek Watershed Commission was an important step taken by the Board of Commissioners. The County Commissioners should continue to play an active role in the Commission, and in the entire "Spring Creek Community's" effort at protecting the creek.

**Conklin:** I agree that the Spring Creek Watershed is a priceless resource in Centre County. I have always believed in the balance of preserving our natural resources

while promoting sensible economic development in the Centre Region. I believe the County should work with business and ag leaders to look at developing plans for promoting stormwater and ag runoff plans for these sensitive areas.

**Heicklen:** Centre County has no direct authority for controlling sewage. That authority is reserved to the boroughs and

Spring Creek Watershed Community and the I-99 Partnership for Sustainable Development in projects that are designed to protect Spring Creek and our water resources. County government can assist in obtaining grants to help these organizations, as well as offer assistance through the planning office to reduce storm-water runoff, etc., to minimize the effects on Spring Creek.

**Shields:** The County's role is to support and enhance the cooperation among municipalities in the watershed and to assist with federal and state grant procurements.

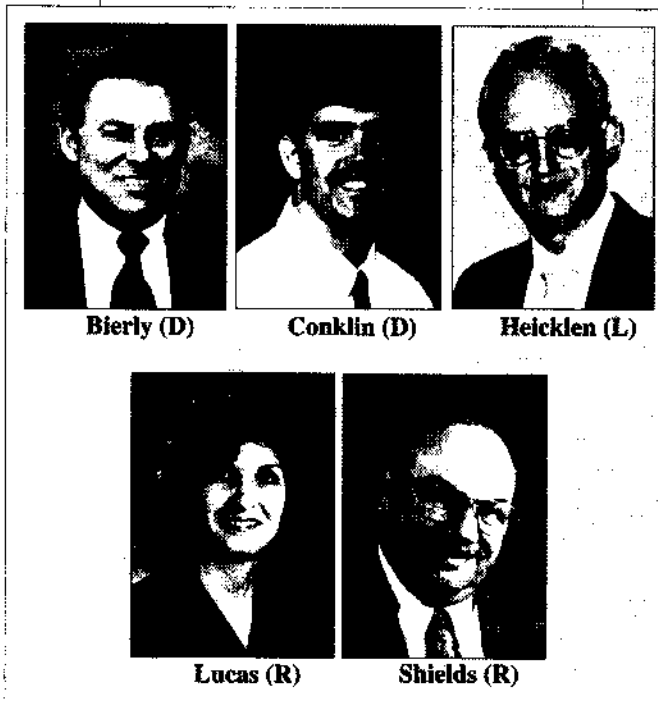
*2. The southern parts of Centre County, including the population centers around Bellefonte and State College, depend almost entirely on ground water for their public water supplies. What role do you see for the County in protecting the ground water for the benefit of the public?*

**Bierly:** The Commissioners have been involved to some extent in the water issue during the present term. We have recently created a Centre County Water

Authority to help in some areas of concern. Our planning office has been helpful to many water companies in facing present problems. I have indicated I will increase resources in the planning office and in the conservation district office in order to better protect our water, air and soil.

townships. The County should encourage those bodies, through the Centre County Planning Commission, to ensure that treated sewer water that is returned to Spring Creek be of the same purity as it was received.

**Lucas:** The County should continue its participation with the Spring Creek Watershed Commission, ClearWater Conservancy,



Bierly (D)

Conklin (D)

Heicklen (L)

Lucas (R)

Shields (R)

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**Conklin:** Water is a precious natural resource that all living creatures need, and therefore it is essential that the Centre County government looks to developing long-term plans for protecting our valuable ground water in our growth areas. There have been communities in other states that have vigorous growth without looking to their water resources. I believe it is the responsibility of the Centre County leadership to work with community groups such as ClearWater Conservancy and other important agencies to strategize effective ground-water plans for the future.

**Heicklen:** Centre County has no direct authority for controlling ground-water supplies. The authority is reserved to the boroughs and townships. The County should encourage those bodies, through the Centre County Planning Commission, to ensure that ground-water supplies are maintained at the purity necessary for them to be used as drinking water after treatment.

**Lucas:** The protection of local ground-water sources is largely the responsibility of the local water authorities and their customers. The County can offer assistance through education and technical support to the authorities, possibly through the newly established county water authority.

**Shields:** The role is appropriately vested with the Department of Environmental Resources.

*3. Centre County has an Agricultural Land Preservation Program that purchases development rights on farmland. The County allocates funds for this program, although the County contribution has been modest (\$40,000 in 1999). Do you support this program? Are you in favor of increasing the County allocation for this purpose? If so, by how much? How would you propose to pay for the increase?*

**Bierly:** Yes. I have already indicated that I would be in favor of increasing the county's commitment to the Agricultural Land Preservation Program. This year's commitment was \$40,000. Our budget request from the planning office is

\$100,000. I could accept that figure. I believe the natural growth in the county in real estate taxes from expansion of business, industry and residential development would be an appropriate place to find increased funding for ag land preservation. I would not be opposed to a serious discussion as to whether or not the county should follow the state lead in having a bond issue devoted to agricultural land preservation.

**Conklin:** I feel that this is a very meaningful program. I agree with the importance of saving ag land. I would like to establish a partnership with business, government and farms to come up with a way to acquire the funding and secure more state grants.

**Heicklen:** I support the idea of purchasing development rights on farmland for agricultural land preservation. However, I believe that this should be done by private individuals and corporations that want this done. In my opinion, it is not appropriate for the County to spend taxpayer money on real estate investments. I would discontinue the County contribution for this purpose.

**Lucas:** I support the Agricultural Land Preservation Program. Most people live in Centre County because they enjoy the rural quality of life. Open space and farmlands are important to our community. I would be in favor of maintaining the current allocation to the program at this time. I would consider increasing the allocation if it had public support.

**Shields:** I strongly support the preservation of farmland and open space. During my tenure with College Township, we will have acquired approximately 80 acres of additional open space for the benefit of our citizens. As a commissioner, I would seek to maximize state grant availability for the preservation of all open space. County funding would be increased by a reduction in administrative expenses.

*4. The presence of Penn State University in Centre County has contributed immeasurably to the economic, social and cultural environment of our communities. However, University actions may sometimes have unintended effects on these communities. As*

*the University is governed by a Board of Trustees which, for the most part, is not publicly elected, the public has little voice in shaping University policy. How can the County interact with University officials to assure that their actions benefit both the University and the surrounding communities?*

**Bierly:** During the 12 years I have been Commissioner, the County Commissioners' interaction with the University has increased significantly. After lawsuits and negotiations relative to their tax status, cooperation between the University and municipal and county officials increased. I favor more interaction with University officials, which I believe will be one more positive outcome from the County updating its Comprehensive Plan.

**Conklin:** We must keep communication open between the University and County in order to work cooperatively together to assure our quality of life. County growth committees should invite and encourage the involvement of trustees in order to develop a good relationship.

**Heicklen:** The County has no authority or interest in University policies that benefit the University. That is the University's responsibility. However, the County does have an interest in policies that are detrimental to the communities. When such policies are brought to the attention of the Commissioners, they should first try to advise and/or negotiate a change. If this fails, the County can charge user fees for use of, or damage to, County facilities. Finally, the County can initiate legal action against the University. In the extreme, and unlikely, case that University policy is a danger to public health or safety, the County would have to close the University.

**Lucas:** I believe that University officials are well aware that they are a part of the Centre County community. Open lines of communication are necessary on both sides, and I am eager to discuss any issues with officials at Penn State. Maintaining a good relationship is essential for both parties. The university has greatly benefited Centre County, and we in return have supported university programs and students.

**Shields:** As the question correctly states, elected officials have little or no voice in University policy. Commissioners should use their office to encourage the University to act responsibly toward the community and the environment.

*5. Several major highway projects — I-99, Corridor O, the South Central Centre County Project — are now in the planning stages or under construction. When complete, these roads will undoubtedly stimulate new growth. How can the County help to steer this growth to areas where it will be most beneficial while protecting those areas that should be preserved as farmland or other open space?*

**Bierly:** I advocated an updated County Comprehensive Plan, increased resources to the county planning office, increased resources to the county conservation district and increased resources to the Ag Land Preservation Program. The issue of growth in the county is the number one issue in the election of 1999. We need to put resources into our offices and programs that can help keep our scenic county "Clean and Green."

**Conklin:** Many communities such as Benner Township and Penns Valley area are conducting Community Visioning processes. I would recommend that the County Commissioners work with these groups and look at their outcomes. I feel that it is critical that communities establish their own direction and determine future growth. It is up to Centre County leaders to ensure that they "hear" from the people in Centre County to determine what is best for our region.

**Heicklen:** Centre County has no zoning authority. That duty is reserved to the boroughs and townships. The County should encourage those bodies, through the Centre County Planning Commission, to consider the effect of growth in their decisions. I am opposed to a uniform policy for exit ramps from highways because I believe it will lead to commercial development at all exits. Commercial development may be appropriate for some exits, but not for all. The individual zoning entities should retain the right to zone exits non-commercial, if they wish to do so.

**Lucas:** Zoning helps to steer growth into more desirable locations. The County could encourage municipalities experiencing growth to develop comprehensive plans. The revision of the County's comprehensive plan would also be a helpful resource to some communities. The County needs to work closely with the municipalities to offer support and advice in whatever way possible.

**Shields:** Ultimately, land use is governed by the local municipalities. However, the County, through its planning office, should assist with this task.

*6. The Governor's Pennsylvania 21st Century Environment Commission placed top priority on responsible land use as a means to stop or slow "sprawl." Do you agree with this position? What can the County do to promote responsible land use?*

**Bierly:** Yes. Today, I signed an agreement with the Commonwealth and with the people most closely attached to the I-99 development, to study and promote responsible land use along that corridor. The county has assisted in receiving the grant for \$500,000 to begin this effort, an effort which can be expanded with the comprehensive plan to follow.

**Conklin:** There are many townships in Centre County, and I hope that we can find a way for the townships to work together to make connections between their plans. They can still work independently, but I believe the County Commissioners can work to make our Centre County Planning Commission one that encourages teamwork between the townships.

**Heicklen:** I support responsible land use as a means to stop or slow "sprawl." Centre County has no zoning authority. That authority is reserved to the boroughs and townships. The County should encourage those bodies, through the Centre County Planning Commission, to zone in such a manner to reduce "sprawl." I oppose the idea that the buildings in some areas of downtown State College are limited in height. I believe that this is not responsible land use and will encourage "sprawl" and traffic congestion.

**Lucas:** Considering the growth we are experiencing, it only makes sense to provide for planning which takes into consideration a community's needs. Each community is different, which makes the land use in each community different. The county can offer assistance to municipalities in planning and possibly grant applications.

**Shields:** A strong leadership role by the County Planning Office will enable local municipalities to minimize sprawl by coordinating their land-use policies.

*7. Parts of our County need and are striving for economic development. At the same time, other areas are developing so quickly that some citizens are concerned that too-rapid growth will degrade the natural environment and the high quality of life. How would you, as a County Commissioner, lead citizens from throughout the County in a meaningful discussion of the growth issue — whether we should encourage growth in some areas and discourage it in others?*

**Bierly:** County Comprehensive Plan. This will involve community "visioning" and participation by the communities throughout the county. This County lead in the growth issue will be the single most important aspect of being a Commissioner over the next four years. Other major areas will be more "internal" to the operation of county government. The participation by the Commissioners in the growth issue over the next four years is extremely important.

**Conklin:** Again, I would encourage and rely on the outcomes that many community Visioning groups are creating in Centre County. I would look to see their outcomes, add to what they value, preserve and wish to be in future years as a guide to promoting the balance of quality of life in our great communities as well as ensuring that their economic opportunities are available for all our Centre County residents.

**Heicklen:** Centre County has no direct authority for zoning. That authority is reserved to the boroughs and townships. The County should coordinate those bodies,

*continued on page 4*

continued from page 3

through the Centre County Planning Commission, to ensure that economic development occurs in the best way. As a Commissioner, I might or might not be a member of the Centre County Planning Commission. If I am a member, I would use that Commission as a platform for my ideas. If I am not a member, and an issue of importance arises, I would use the Commissioner's office as a "bully pulpit."

**Lucas:** Growth occurs in areas because they are desirable in some way. Proximity to employment, shopping, schools and cultural events make certain areas more desirable to some people. Other residents prefer to live in a more rural setting. Discouraging growth in certain areas can have a negative effect. Limiting home building in one area can cause housing prices to escalate, a shortage of homes, and wasteful commuting and congested roads as residents are forced to live farther away from their places of employment. Caution and foresight should be used when trying to promote or discourage growth in a community.

**Shields:** The redistribution of economic prosperity within the county should be a top priority of the next Board of Commissioners. With assistance from the state and federal governments and the County Planning Office, economic development/redevelopment should be encouraged in appropriate regions and discouraged where it will adversely affect the quality of life.

## On the Eccentricity of Slab Cabin Run

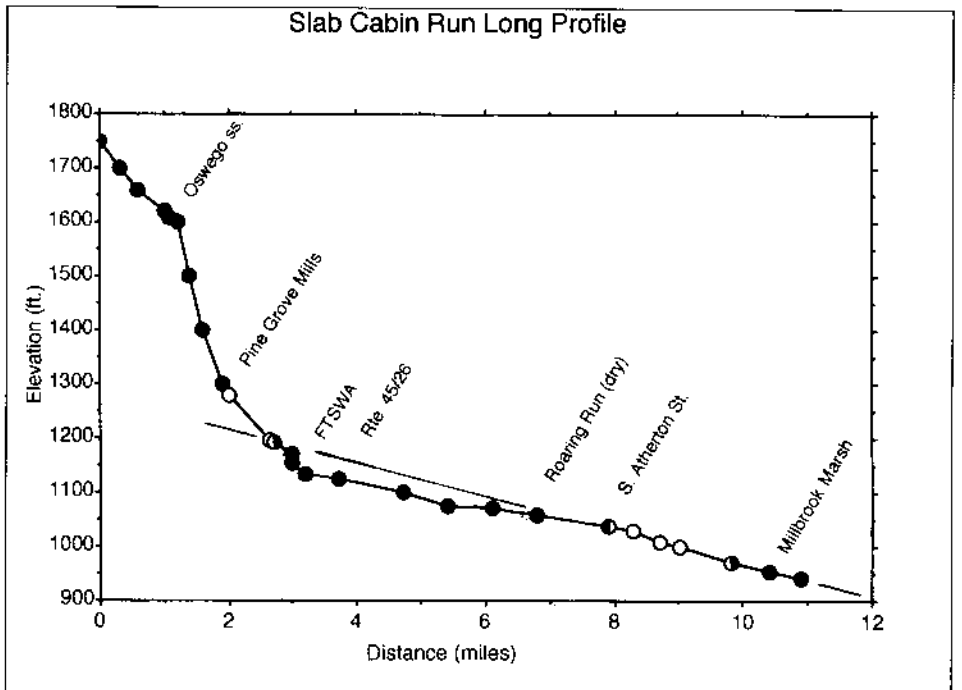
By Robert F. Schmalz

A mid-summer issue of the *Centre Daily Times* featured a photograph of the dry bed of Slab Cabin Run near the point where it crosses South Atherton Street. I was particularly interested in the photograph because I knew there was water flowing in the run both up- and downstream from that location. Although the discharge of any stream must reflect the recent precipitation history of its drainage basin, it seemed clear that stream flow in Slab Cabin Run could not be related to rainfall alone.

Curious about the problem, on July 17 I traveled the length of Slab Cabin Run from its headwaters on Tussey Mountain to its confluence with Spring Creek near Millbrook Marsh. The pattern of stream flow seemed to be peculiar indeed. Water was flowing in the run from the top of Tussey Mountain to a point near the bridge in Pine Grove Mills, where it vanished into a swallow hole. The creek bed was dry from Pine Grove Mills to the marshy area just about a mile west of South Atherton Street. The stream bed was generally dry (except for small pools of standing water) and free of flowing water from Atherton Street to Millbrook Marsh, but water was flowing (sluggishly) through the marsh to Spring Creek.

When studying a river or stream, geologists often construct a "long profile" of the channel by plotting the elevation of the stream bed as a function of distance measured along the stream's course. The long profile of Slab Cabin Run (see figure) clearly reflects the properties of the rocks over which it flows. In the headwaters, where it flows over the relatively soft red shale and sandstone of the Juniata Formation, the slope is moderate. It steepens abruptly at the point the channel crosses from the resistant Oswego sandstone onto the less-resistant Reedsville shale and continues steeply down the flank of Tussey Mountain to Pine Grove Mills. Near Pine Grove Mills the gradient begins to flatten out as it crosses onto the carbonate rocks (limestones and dolomites) of the Nittany Valley floor. From that point to Millbrook Marsh, minor changes in gradient reflect differing resistance of the interbedded and gently folded underlying carbonates.

In the figure, filled circles indicate locations where flowing water was observed in Slab Cabin Run on July 17; open circles indicate locations where the stream bed was dry; and half-filled circles show locations where isolated pools of standing water were present.



	Distance	Elevation (ft.)	Notes	Streambed	Distance (mi.)	
1	0	1750	Head; Juniata redbeds	Flowing	0	
2	.70	1700	Juniata sh.	Flowing	.3	
3	1.60	1660	Juniata sh.	Flowing	.6	
4	2.50	1620	Oswego ss.	Flowing	1.0	
5	2.75	1610	Sandstone knickpoint	Flowing	1.1	
6	2.80	1600	Sandstone	Flowing	1.2	
7	3.60	1500	Reedsville sh. slope	Flowing	1.4	
8	4.30	1400	Reedsville sh. slope	Flowing	1.6	
9	5.10	1300	Reedsville-Trenton contact (approx)	Diminished	1.9	
10	5.30	1280	Rte. 26, Old Oak Tavern. Trenton ls.	Dry	2.0	
11	6.90	1195	Recrosses Rte. 26 Limestone	Dry	2.7	
12	7.00	1193	Spring?	"	Flooded sink	2.7
13	7.60	1170	Stone Valley Constr.	"	Marsh	3.0
14	7.70	1155	FTWSA	"	Flowing	3.0
15	8.20	1135	.	"	Flowing	3.2
16	9.60	1123	Rte. 26/45 crossing (BM)	"	Flowing	3.7
17	12.00	1100	.	"	Flowing	4.7
18	13.90	1075	Tributary enters	"	Flowing	5.4
19	15.60	1070	Tributary enters	"	Flowing	6.1
20	17.40	1060	Roaring Run (dry) enters	"	Flowing	6.8
21	20.30	1038	S. Atherton St.	"	Dry	7.9
22	21.40	1030	Klssinger Farm	"	Dry	8.3
23	22.30	1010	CHCC Bridge (E. Branch Rd.)	"	Dry	8.7
24	23.20	1000	CHCC #4	"	Dry	9.0
25	25.20	970	Park (By-pass @ College Ave.)	"	Dry	9.8
26	26.60	955	Millbrook Marsh	"	Marsh	10.4
27	28.00	940	Joins Spring Creek	"	Flowing	10.9

To understand the significance of the long profile, it is essential to recognize that in its lower reaches, Slab Cabin Run is a "perched" stream. While the water level in most rivers coincides (approximately) with the level of the adjacent water table, the elevation of the bed of a perched stream may be tens or even hundreds of feet above the regional water table. Downward percolation of the water in a perched stream is prevented by an impermeable layer of rock or soil beneath the stream bed, almost as though the water were flowing in a natural pipeline or aqueduct. Perched streams can be thought of as defining a perched water table. They are especially common in carbonate terrains.

Obviously, if the impermeable layer responsible for "perching" the stream is penetrated by some natural process (such as collapse of a sinkhole) or by human activity, the perched water will escape, just as a sink empties when the drain plug is removed. For much of the distance from Pine Grove Mills to the Millbrook Marsh, the channel of Slab Cabin Run is perched 20 (or more) feet above the regional water table. Sinkholes have opened in the channel of Slab Cabin Run in the past, causing the downstream channel to dry up completely within one or two hours. On several occasions following such an incident, the State

College Water Authority restored the flow by locating the sinkhole and plugging it with concrete to reduce the risk of contamination of the groundwater reservoir. It seems probable that without the intervention of the Authority, portions of Slab Cabin Run might have disappeared long ago. Certainly it is clear that the ultimate fate of Slab Cabin Run, like that of any perched stream, is to vanish beneath the surface, leaving a dry valley where once the stream flowed. Big Hollow, with its several large sinkholes, is a familiar example of such an "underdrained" valley.

If we examine the long profile in detail, we can understand the eccentricity of Slab Cabin Run. Essentially all the runoff gathered in the upper reaches of the Slab Cabin basin flows on the surface over the shale beds exposed on the slope of Tussey Mountain. At the base of the slope, at the contact between the shale and the underlying carbonate rock, the water is captured by sinkholes in the Ordovician limestone. At least some of the water is retained by the impermeable zone over which Slab Cabin Run flows across the Valley, forming a "perched" water table. The approximate position of the perched water table, as it existed on July 17, is indicated on the profile by the sloping line extending from Pine Grove Mills to Millbrook Marsh. It is

obvious that where the level of the perched water table is above the stream bed, water flows in Slab Cabin Run; where it is below, the stream bed is dry. In those reaches where the level of the perched water table is roughly coincident with the channel, standing water may accumulate as isolated pools.

This pattern of flow is not independent of precipitation. In the spring, for example, water from melting snow or rain will increase the volume of water delivered to the headwaters of Slab Cabin Run. The effect will be to tilt the perched water table, raising the end near Pine Grove Mills but leaving the end at Millbrook Marsh essentially unchanged. In a very wet spring, the level may rise sufficiently to fill Slab Cabin Run with flowing water throughout its length. On the other hand, in a period of drought, we would expect the channel to be exposed (dry) first at the high point just downstream of South Atherton Street. The drying would be extended both up- and downstream as the drought continued, until the last flowing water disappeared from the wetland near the junction of West Branch Road and Route 45.

With a clearer understanding of the seemingly erratic behavior of Slab Cabin Run, we can conclude that while the drying up of Slab Cabin Run may be an indicator of diminished precipitation, a better measure of the severity of a drought is afforded by the length of the dry channel up- and downstream from the South Atherton Street bridge. ▲

*"...stream flow in Slab Cabin Run could not be related to rainfall alone."*

## Both Surface - and Ground-Water Boundaries Important to a Watershed

By Todd Giddings, Ph.D., P.G.

Over the summer, the Spring Creek Watershed Community began erecting the long-awaited signs marking the surface- and ground-water boundaries of our watershed. The signs are intended to raise public awareness about the location of the watershed and encourage people to think about how their actions affect it. Concern over the location of signs in Ferguson Township has demonstrated that we need to do more to explain the difference between surface-water and ground-water boundaries.

The surface-water divide between Spring Creek Watershed and other watersheds is the location where a drop of rain falling onto the ground splits in half. One-half flows overland and through tributary stream channels to Spring Creek, and the other half flows overland in the opposite direction to an adjacent watershed, such as Bald Eagle Creek Watershed. When surface-water boundaries are used, Spring Creek Watershed is 146 square miles.

The ground-water divide follows a similar concept. The divide is the location on the water-table surface where, when a drop of rain falls and infiltrates to the subsurface, one-half flows to a stream bed or spring that flows into Spring Creek, and the other half flows in the opposite direction to a stream bed or spring in an adjacent watershed. Spring Creek Watershed's ground-water area is 175 square miles.

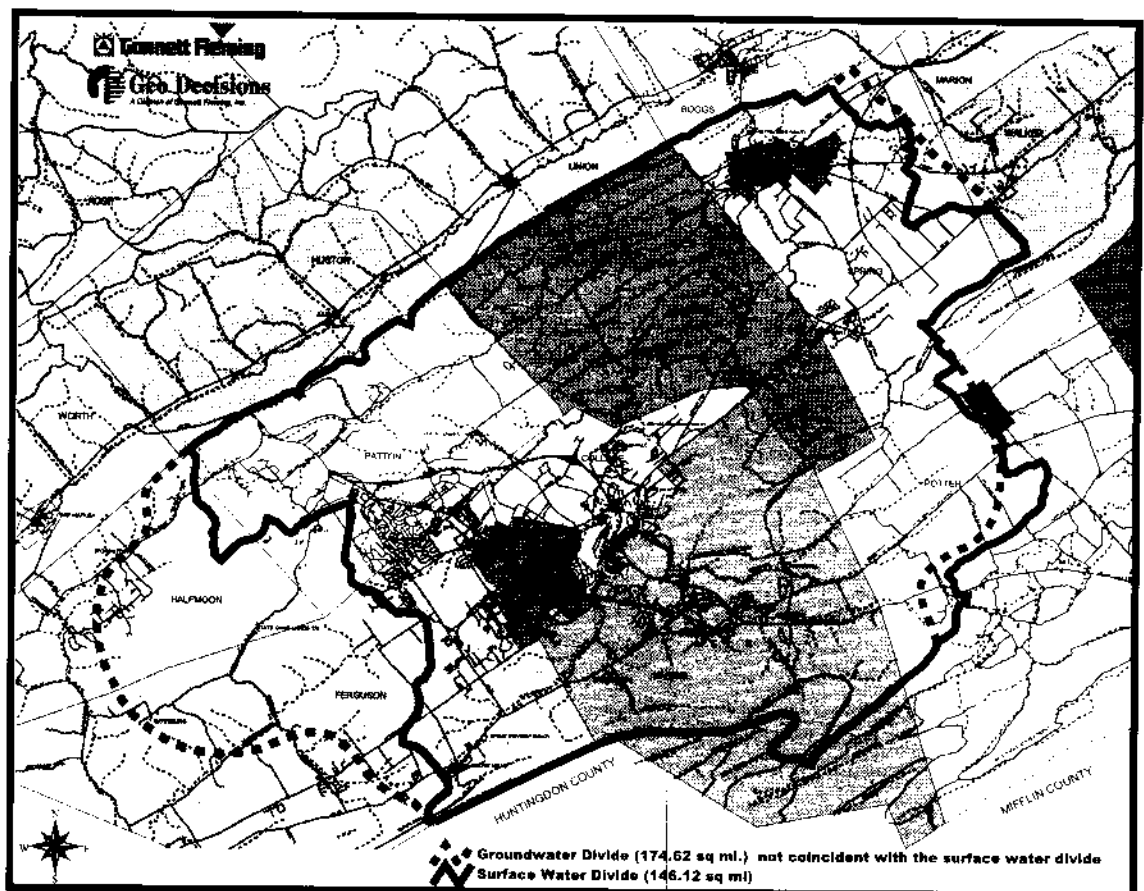
On the mountain ridges, the surface-water and ground-water boundaries are the same

because ground water flows in the same direction as surface water. In our watershed, for example, this happens along the ridges of Tussey and Bald Eagle mountains.

On the floors of Nittany Valley and Penns Valley, however, surface-water and ground-water boundaries sometimes differ because ground-water flow is controlled by caverns in the underlying limestone bedrock. The southwestern ground-water boundary in Halfmoon and Ferguson townships is located several miles beyond the surface-water divide because subsurface caverns and solution openings in the bedrock drain the ground water in this area to the northeast. Ground-water recharge that occurs through several square miles of the adjacent Spruce Creek Surface-Water Watershed flows underground to the northeast through the caverns and conduits developed along a fault zone and discharges at Big Spring. Thus, the headwaters of Big Spring lie beneath State Game Lands 176 in Halfmoon and Ferguson townships, an area that is outside the Spring Creek Watershed's surface-water boundaries.

Another area where the two boundaries differ is in Penns Valley, in the vicinity of Old Fort and Tusseyville. Subsurface caverns in the limestone bedrock drain some of the ground-water recharge within the Spring Creek Watershed surface-water basin into Sinking Creek in the adjacent Penn's Creek Watershed. In this area, the surface-water boundary extends farther to the east than does the ground-water boundary.

Both ground-water and surface-water boundaries are important to the Spring Creek Watershed. Throughout the watershed, ground water seeps into beds of streams and flows from numerous springs. This is how ground water becomes surface water flowing in the stream channels. Tributary streams feed into Spring Creek, which flows out of the watershed at McCoy Dam near Milesburg. Approximately 86 percent of the total annual flow of Spring Creek is ground water before it becomes surface water, demonstrating the importance of ground water in the Spring Creek Watershed. ➤



## Vision 2020: Living with I-99

The Interstate 99 visioning and planning effort has a new name! "Vision 2020: Living with I-99" is the newer, catchier title for the "Creating a Community-based Sustainable Future for I-99: A Watershed Approach" project funded by the Federal Highways Administration. "We feel that 'Vision 2020' will be a lot easier for the public to identify and remember," says Roxanne Shields, Project Director. "It is meant to imply that through community-based input, we hope that we can establish a clear picture of what citizens would like the mid-Bald Eagle watershed [which includes Spring Creek] to look and feel like in the year 2020 in light of a new interstate. We also want to indicate in some way that the process will be creating land-use and other strategies that will make that vision happen through the years."

The public will be hearing a lot about "Vision 2020" over the next few months, as ClearWater Conservancy actively solicits participants in the visioning process set to begin in January 2000. Groups from the Bald Eagle, Bellefonte/Intervally and Centre Region areas will meet from January to May 2000 to discuss local concerns and issues for their regions. Visioning activities will break for the summer and resume in September 2000. Regional groups will be combined and meet from September to early December to look at the bigger picture, which may assist in making their own regional visions happen.

If you would like to participate or volunteer to help with "Vision 2020" efforts, or if you would like additional information, please contact Dustin Hess, Vision 2020 Administrative Assistant, or Roxanne Shields at 237-0400. 📍



## Hello Spring Creek Watershed Community!

I want to introduce myself and say hello after my first week here at ClearWater Conservancy, as the new watershed coordinator. I had a chance to meet a few members of the watershed community this week and look forward to meeting so many more of you as I settle into this new position.

Just by the individuals I have had a chance to meet so far, I am impressed by the dedication and hard work expressed by everyone. I have been to one Coordinating Committee meeting and one ClearWater Conservancy Board meeting, met with some energetic volunteers and spent two days in the field with Water Resources Monitoring for my first week. This has been a busy week, but a fulfilling one, and I am very anxious to meet more of the community and work with other volunteers.

Originally from Tunkhannock, I began my education here at Penn State studying biology (ecology) before changing direction and transferring to Bloomsburg to graduate with a degree in environmental planning. I moved back to the area to work for Poe Valley State Park as a naturalist. For the last two years, I worked with the U.S. Fish and Wildlife Service as a stream restoration technician. I gained invaluable experience in that time and worked with some very experienced and knowledgeable individuals whom I will miss.

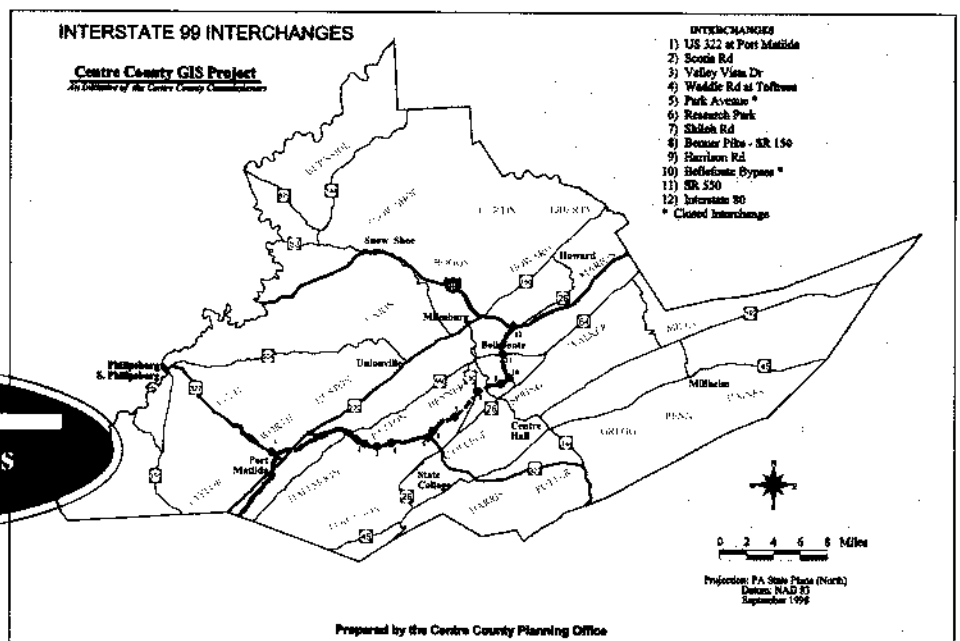
I love working with the public and meeting new people, and already this week I am amazed at all the new faces I have encountered. I am really looking forward to working with everyone in the Watershed Community. I also want to thank Darlene and Roxanne for making me feel welcome and spending a lot of time to get me settled in. I find the atmosphere here very pleasant, and it is reflected so much in both of them, and in the staff and interns of this office.

I now live in Penns Valley, in Millheim. I love to spend my free time outdoors, including hiking, camping, gardening, birdwatching, fishing and taking care of my pets. I look forward to meeting all of you in the near future!

Sincerely,  
Beth Thoma  
Watershed Coordinator



Map provided by Centre County Planning Office.



## UAJA Pilot Study Demonstrates Nutrient Reduction

By Dave Smith

Assistant Executive Director, UAJA

The University Area Joint Authority in State College has been participating in an exciting and unique pilot study aimed at reducing nutrients being discharged into the state's waterways. The Authority, in partnership with the Pennsylvania Department of Environmental Protection, implemented a full-scale pilot application of the BioGuide wastewater control technology on Sept. 3, 1998, following UAJA's pilot-scale demonstration during the last half of 1996. DEP approved a grant of \$250,000 through the Chesapeake Bay Program to carry out this project; UAJA is a source of matching funds.

This innovative technology, provided by BioChem Technology, allows real-time, on-line monitoring of wastewater treatment facilities to optimize treatment efficiency. The pilot project demonstrates that use of this technology may allow treatment facilities to recover actual treatment volume through optimization of existing capacity. This recovered capacity could then be applied toward plant modifications to achieve biological nutrient reduction. Successful implementation of this project also demonstrates that this technology is an economically viable alternative to conventional engineering techniques for biological nutrient reduction for point source dischargers.

Results of the year-long study are interesting. The BioGuide control system can provide certain treatment facilities with an additional method to upgrade and expand their facilities. In cases where there is not a desire to build additional tanks or the capability to accommodate more flexibility does not exist, the BioGuide system can be a cost-effective solution to achieve biological nutrient reduction. The study was also able to show that there are energy cost savings associated with aeration blower control. This is primarily an operational cost but could amount to nearly 15-percent savings.

The Authority continues to operate the BioGuide control system on a full-scale

basis in order to gather more conclusive data. University Area Joint Authority is also pilot-testing innovative microfiltration technology in association with its Beneficial Reuse project. To see the BioGuide system in operation or to tour the microfiltration project, contact Dave Smith at (814) 238-5361 to arrange a site visit. 📍

## Fire-Training Facility Update

By Darlene Weener

In the last issue of *Springs & Sinks*, we ran a story about the proposed fire-training facility in Benner Township on property owned by the University Area Joint Authority. The Centre Region Council of Governments needs a new facility for training firefighters and is looking into building one on UAJA property. Because Spring Creek runs through the property, COG is investigating the impact of the proposed facility on the stream.

As part of the preliminary work, COG hired the architectural firm of Hoffman Popovich Architects & Associates to do a feasibility study on the site and to draw up a preliminary site plan. COG has asked the ClearWater Conservancy to review the plan to evaluate the impact of the facility and its uses on Spring Creek, both surface water and ground water. The plan calls for burning wood and straw and using water to extinguish the fires. The source of the water may be the treated wastewater that is being discharged into the stream already.

By the time of the deadline for *Springs & Sinks*, ClearWater had received the preliminary plan and forwarded it to a ground-water specialist at USFilter, where it is currently being reviewed. There are still a few questions left to answer. We'll have more information about this project in the next issue of the newsletter. Before that, we hope to be able to follow up on our commitment to Henry Burman to facilitate a community exchange of information about the facility. 📍

## Overlay District Ordinance Update

The Overlay District Committee of the I-99 Community Partnership for Sustainable Development, under the leadership of Helen Alters, Benner Township supervisor, has been working since January to establish a model overlay district ordinance for the areas surrounding the twelve I-99 interchanges in Benner, College, Marion, Patton, Spring and Worth townships in the mid-Bald Eagle watershed in Centre County. The committee's consultant, McGuire Woods Battle and Boothe of Richmond, Va., recently created a draft matrix-style set of ordinances for consideration by the committee. The draft is under review by the committee's local consultant, Kathie Hunter of Land Plan Inc., and the Centre County Planning Office to make sure that it is consistent with existing local planning capabilities and Pennsylvania's municipal planning code.

The first draft may undergo revision before it is presented to the Overlay District Committee. The next step will be to have the Committee review the draft and develop a process for introducing it to the public and boards of supervisors.

The intent of the interchange overlay district model ordinance is to provide basic uniformity and standards for a series of parameters. The draft ordinance contains text and diagrams for the following elements: access from highways, setbacks, clustering, lighting standards, lighting structures, intermodal transportation, open space, underground infrastructure, signs, stormwater, building style and materials, and hedges and fencing.

If you would like more information on the work of the Overlay District, please contact Roxanne Shiels of the ClearWater Conservancy at (814)237-0400. 📍

**VISIT OUR WEBSITE:**

**[www.countrystore.org/  
rec\\_arts/scwc/  
springcreek.htm](http://www.countrystore.org/rec_arts/scwc/springcreek.htm)**



## Hellos and Goodbyes

The Spring Creek Watershed Community welcomes two very important people. In September, Jennie Church joined the staff of the ClearWater Conservancy to support the Watershed Community's Coordinator.

Jennie is a senior and will be one of the first-ever graduates in Penn State's Forest Science Watershed Management Option. Jennie has been "multi-tasking" since day one, working on our Spring Creek Watershed Community display, revising and uploading the searchable historical references database for water quality, scanning and writing for *Springs & Sinks*, and other items too numerous to mention!

Todd Giddings, a local hydrogeologist, dropped in to attend a Coordinating Committee meeting several months ago and liked it so much he has become a regular during the 7 a.m. monthly meetings. Todd has provided a wealth of technical expertise to our projects since he crossed our threshold in August. He has been particularly helpful in providing information on the difference between surface and ground-water boundaries (see page 6). We hope that Todd will continue his interest and "go with the flow" as the Watershed Community continues to grow and evolve.

Welcome to you both! 🐾

## Report from the Coordinating Committee

Prepared by Roxanne Shiels,  
past Watershed Coordinator,  
and Jennie Church, Watershed Intern

The Spring Creek Watershed Community's Coordinating Committee has met twice since the September issue of *Springs & Sinks* was created. If you will recall, the Committee meets once a month to guide the activities and discussion of the Spring Creek Watershed Community.

In August, the Coordinating Committee discussed the progress of the placement of watershed boundary signs throughout the watershed. The committee determined that information about the signs and the difference between the ground-water and surface-water boundaries should be provided wherever possible, especially at municipal buildings in municipalities where signs are placed. Similarly, the Committee also thought it was important to continue to reach as many people as possible regarding watershed issues. One way to do this is to provide information and displays at any meeting of "Vision 2020: Living with I-99."

On another note, some Coordinating Committee members decided to step up to the plate and take on new responsibilities. Gene Proch, as the immediate past Coordinating Committee chair, offered to fill the role of the Watershed Commission liaison, establishing a new policy for past chairs of the Coordinating Committee. David Gilbert, who has been filling in occasionally for Scott Harrison to chair meetings, officially became co-chair of the Committee.

During the September meeting, the Coordinating Committee reviewed and made revisions to proposed questions for the County Commissioner candidates for this issue of *Springs & Sinks*. Much of the meeting was spent discussing recent events revolving around the removal of watershed boundary signs around the ground-water basin in Ferguson Township and the subsequent withdrawal of Ferguson Township from the Spring Creek Watershed Commission. The Watershed Community highly values the existence of the Watershed Commission as a watershed-focused, multi-

municipal entity. Therefore, the Coordinating Committee struggled with determining a course of action to compel Ferguson Township to reconsider its action. The Committee determined that it would try to work with individuals from the Township to first understand their concerns regarding participation in watershed initiatives.

Finally, the Coordinating Committee decided on behalf of the Watershed Community to join with hundreds of other watershed organizations to support a list of water-related programs proposed to Congress for funding. The request was made by American Rivers, a non-profit group for the protection of our nation's rivers, and the budget items were determined to be fully consistent with the mission of the Spring Creek Watershed Community.

In future meetings, we will continue to determine how we can best support the Watershed Commission, discuss the details of a Spring Creek watershed presentation and other outreach mechanisms, and continue to track local issues such as the proposed Benner Fire Training Facility. 🐾

## ABOUT THIS NEWSLETTER

*Springs&Sinks* is a bimonthly publication of the Spring Creek Watershed Community.

**Coordinator:** Beth Thoma

**Editor:** Tracey Dooms

**Layout:** Commercial Printing, Inc.

**Writers:** Peggy Marsh, Becky Ruskin

The major purpose of this newsletter is to inform the public about matters of interest to the Watershed Community.

Although the Spring Creek Watershed Community is a major project of the ClearWater Conservancy, views and positions expressed herein do not necessarily represent those of ClearWater, or any other stakeholder group in the watershed. Your contributions to our continuing dialogue are welcome. Send them to Editor, *Springs&Sinks*, 2555 N. Atherton St., State College, PA 16803, telephone 814-237-0400, Fax 814-237-4909, email clearh2o@vicon.net.

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## Springs & Sinks—Newsletter of the Spring Creek Watershed Community

### C A L E N D A R O F E V E N T S

**Thursday, Oct. 21, 7-9 PM**

*Spring Creek Watershed Community meeting to discuss "Living with I-99: Choosing Our Future,"* Central Pennsylvania Institute of Science and Technology, 540 N. Harrison Road, Pleasant Gap.

**Friday, Oct. 22**

*Marsh Madness*, a day of exploring Millbrook Marsh nature center and learning about the plants and animals that inhabit the marsh. Contact: 231-1062.

**Thursday, Oct. 28, 7:30 PM**

*A public review of Phase II of Spring Creek Corridor Study*, Bush House in Bellefonte. Contact: Darlene Weener, 237-04000.

**Saturday, Oct 30, 8:30 AM-12:30 PM**

*Public Issues Forum on Land Use*, Central Pennsylvania Institute of Science and Technology, 540 N. Harrison Road, Pleasant

Gap. Contact 231-1062. Please stay afterward for the post-forum visioning opportunity; call 237-0400 for more information.

**Happy Halloween!**

**Tuesday, Nov. 2**

*Election Day*

**Thursday, Nov. 4, 7:30 AM**

*ClearWater Conservancy Board of Directors meets at the ClearWater Conservancy office, large conference room.*

**Thursday, Nov. 4, 7:30 PM**

*Public Hearing for the Gateway Corridor District*, College Township Building.

**Tuesday, Nov. 9, 6-8 PM**

*ClearWater Conservancy Annual Meeting*, Logan Grange in Pleasant Gap, RSVP by Nov. 1. (\$7 for meal) Contact: 237-0400.

**Friday, Nov. 12, 7:30-9 PM**

*Fall Skywatch at Tudek Park* in Ferguson Township. Contact 861-5474.

**Wednesday, Nov. 17, 7 AM**

*Coordinating Committee to the Spring Creek Watershed Community* meets at the ClearWater Conservancy office, large conference room.

**Tuesday, Nov. 23, 5:30 PM**

*Spring Creek Watershed Commission Meeting*, Willowbank Building, Commissioners' Conference Room, Bellefonte.

**Thursday, Nov. 25**

*Happy Thanksgiving!*

**Tuesday, Nov. 30**

*Antlerless deer season begins*, so please wear orange, practice safe hunting and be careful when hiking.