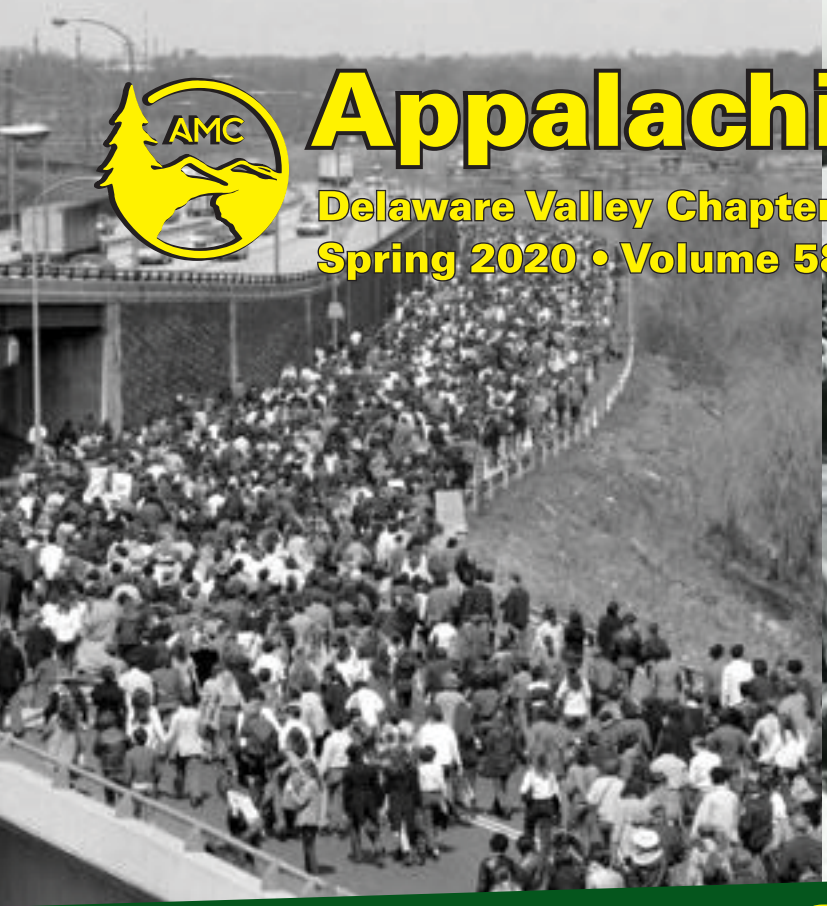
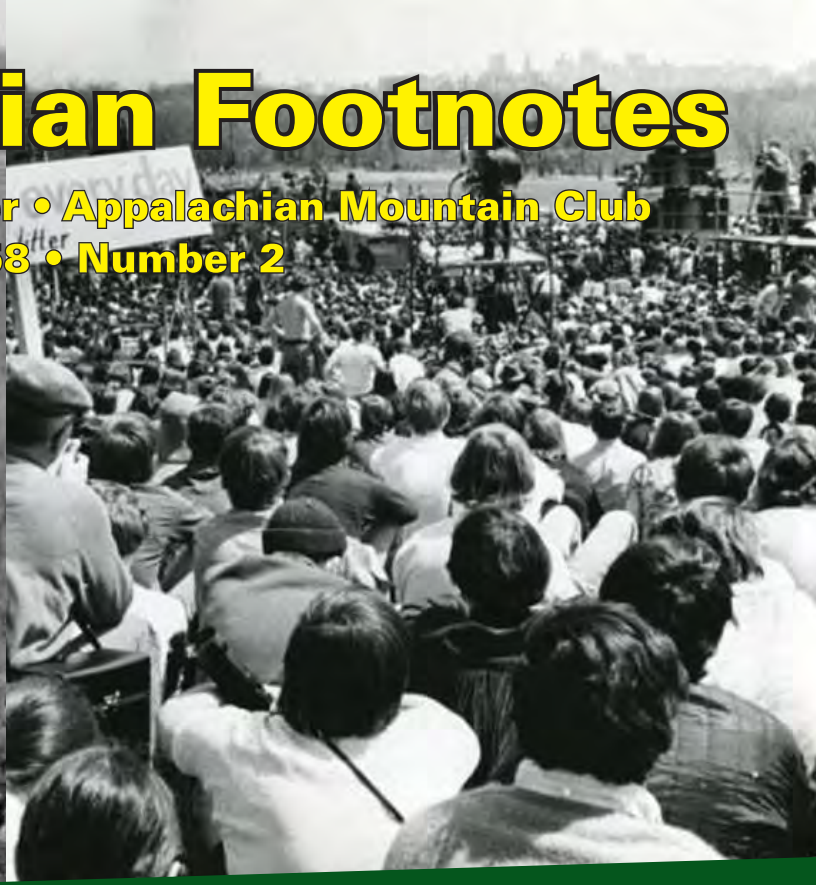
Appalachian Footnotes

Delaware Valley Chapter • Appalachian Mountain Club
Spring 2020 • Volume 58 • Number 2





50 Years of Earth Day

1970-2020 What will you do to help?

Appalachian Footnotes

the magazine of the
Delaware Valley Chapter
Appalachian Mountain Club
published using recycled electrons.

Chair	Susan Weida	dvchair@amcdv.org 610-838-2335
Vice Chair	Bill De Stefano	vicechair@.org 267-640-6244
Secretary	Midori Wakabayashi	secretary@amcdv.org
Treasurer	Margaret McDonald	treasurer@amcdv.org
Backpacking	Cindy Crosser	backpacking@amcdv.org 302-757-0604
Bicycling	Robert Liston	bicycling@amcdv.org 908-313-9058
Communication	Eric Pavlak	communication@amcdv.org 610-650-8926
Conservation	Adrian Noble	conservation@amcdv.org 215-284-5222
Inclusion	Janet Penner	dei@amcdv.org
Family Activities	Annette Sheldon	family@amcdv.org 609-587-0873
Hiking	John Rogers	hiking@amcdv.org 484.223.5312
Leadership	Jeff Fritzinger	leadership@amcdv.org
Membership	Kathy Kindness	membership@amcdv.org 215-478-1529
Paddling	Eric Pavlak	paddling@amcdv.org 610-650-8926
Publicity	Raun Kercher	publicity@amcdv.org 610-389-4131
L. Smith Shelter	Patricia Sacks	shelter@amcdv.org 610-437-3227
Social	Jeanne Mantell	social@amcdv.org 215-262-7463
Trails	Greg Bernet	trails@amcdv.org 908-995-9433
X-C Skiing	Sue Bickford-Martin	ski@amcdv.org
20s-30s Members	Kate Prisby	ym@amcdv.org
Lehigh Valley	Phill Hunsberger	lehigh-valley@amcdv.org 610-759-7067
Ombudsman	Allen Male	ombudsman@amcdv.org

A detailed directory can be found on our web site at amcdv.org/ec.html

When you use Adobe Acrobat Reader to view this newsletter (rather than using a preview program):

Just click on any e-mail or web link. They all work!

Click on the bookmark icon you will get a clickable index!

Weekly Activities Bulletin: Never miss a trip or event! Easy and convenient!

Get a list of all Delaware Valley Chapter activities for the next two weeks sent to your in box each Wednesday, plus advanced notice of major trips and events each month.

Members' e-mail addresses will not be used for any purpose other than sending out this bulletin.

Go to http://amcdv.org/mail.html to sign up, change your e-mail address or cancel your subscription

Custom activities digests, too!

Get a list of trips you are interested in sent to your in box the day they are posted.

You pick the kinds of trips that interest you: hard, easy, hiking, biking, paddling, whatever.

You pick the locations: by region, by chapter; you pick.

You choose how often: daily, weekly, biweekly or monthly.

Go to http://amcdv.org/mail.html

Membership Information

Moving? Please remember to change your address and desired chapter affiliation by going to the AMC web site, www.outdoors.org and signing in (bottom right of page) or calling AMC Member Services at 800-372-1758. This will correct your address for AMC Outdoors. Address corrections cannot be made by the newsletter editor.

Kathy Kindness, Membership Chair
215-478-1529, membership@amcdv.org

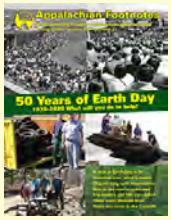
Lehigh Valley area: Phill Hunsberger,
610-759-7067, lehigh-valley@amcdv.org

AMC Information Sources:

Delaware Valley Chapter Web Site: amcdv.org
DV Paddler's Web Site: paddlenow.com
Chapter e-mail: info@amcdv.org
Weekly Activities Bulletin: amcdv.org/mail.html
AMC General Web Site: outdoors.org

Chapter Ombudsman

Questions, complaints, concerns or comments about the Delaware Valley Chapter of AMC should be directed to Chapter Ombudsman, Allen Male at ombudsman@amcdv.org.



Cover: This issue's cover is made up of Earth Day images from many sources spanning 50 years. The top two are from the first Earth Day in Philadelphia, the others from AMC-DV events over the years. See the article on the next page for more about this subject.

Editor: Eric Pavlak
Box 542, Oaks, PA 19456
610-650-8926 e-mail: newsletter@amcdv.org
Others who worked on this issue:
Susan Weida, Lennie Steinmetz and Joan Aichele

Fifty years of Earth Day: personal observations and reflections

By Eric Pavlak

I first heard of Earth Day and Earth Week from a tall, red-haired and red-bearded guy, a fellow college student named Kent Johnson. More about him later.

In 1970, a seeming endless war raged on half way around the world. Would my draft lottery number be called, I worried? Civil rights for all, women's rights, environmental and social justice dominated the activist agenda.

The first Earth Day saw one out every 10 Americans participate in some kind of rally, march or action. The rally in Philadelphia was the nation's largest single gathering, drawing about 50,000 to the Belmont Plateau in Fairmount Park. The keynote speaker was soon-to-be presidential candidate Senator Edmund Muskie (D-Maine). Others included Ralph Nader, environmentalist and landscape architect Ian McHarg, Nobel Prize-winning biochemist George Wald, US Senate Minority Leader Hugh Scott (R-PA) and poet Allen Ginsberg.

The public demanded action

Later that year, the Environmental Protection Agency was created by a bipartisan act of Congress. The Clean Air Act, originally passed in 1963 was greatly strengthened. The Clean Water Act (1972) and the Safe Drinking Water Act (1974) quickly followed.

Automobiles in 1970 produced more than 100 times the pollution than new cars do today, and they had twice the fuel consumption. Today there are three times as many of them as in 1970, and people are driving them more. And after shrinking in size, the average passenger vehicle is again as big and heavy as half a century ago, although shorter and taller.

Air quality has gradually improved, at least until 2017, when it began to decline. Ozone-destroying CFCs were banned in 1996. One of the worst pesticides, DDT was banned in 1972.

Housing growth

Houses are more energy efficient than they were 50 years ago. However, they are twice as large: new housing units now have twice the space per occupant than they did in 1970. Housing construction now consumes more material per person.

Increased home size makes for bigger roofs. Driveways and parking lots add to the impermeable surface. Lawns are better than pavement, but just barely. The mowers, blowers and trimmers we now use have become a major source of air pollution.

Bad fashion trend

Each day while walking from the train station to college in 1970, I passed a large factory with hundreds of employees that made men's dress shirts. In 1970, the average American household spent 10 percent of its income on clothing. The typical American bought seven to nine items of clothing a year.

The shirt factory is long closed. In 2020 almost all our clothing is made in Asian and middle eastern sweat shops, then is brought here by container ships that burn bunker oil, the dirtiest fuel in current use. At the overseas textile mills, dye wastes and toxin-laden process water are dumped directly into rivers and bays.

It takes 600 to 700 gallons of water to make one cotton t-shirt. Synthetic textiles are manufactured from petroleum products using a host of dangerous chemicals.

In 2020 Americans are tuned into fast fashion. They dispose of an average of 70 pounds of clothing per person per year into landfills and incinerators. The US has six percent of the world's population and consumes 40 percent of the world's clothing.

Most thrift stores and second hand shops resell only 20 percent of donations. Some reuse as much as 45 percent by shipping in bulk half way around the world.

We once bought better quality merchandise and used it until it wore out. Shoes were re-soled and re-heeled several times and lasted for years. Now clothing has largely become as disposable as a paper cup. The apparel industry has become the planet's second dirtiest, led only by fossil fuels.

Feeling the heat

Global warming was a current topic in 1970. We even had jokes about it: "At least we'll be able to go surfing in Camden."

We know a whole lot more about it now. We ignored it for decades and are not doing nearly enough about it. A massive challenge remains.

We have the technology to deal with the problem, but lack the political and social will. Some US states are taking the lead in this area, while some are actually passing laws against dealing with man-made climate change.

In the fifty years since the first Earth Day, we have made a good deal of progress in many areas, but are beginning to backslide. As for global warming and climate change, we have largely ignored the urgency of the problem.

One important lesson remains from the first Earth Day: demand action, and don't give up.

Note: Kent Johnson and I lost touch with each other after college. We met again in the late 1980s at AMC. We lived a few blocks from each other and carpooled to executive committee meetings. Kent was chapter chair then. Kent later started the Mohican Outdoor Center in the early 1990s. Read more about Kent.

Kent and I kept in contact, but were never close friends. However, we did share a lot of conversations and a lot of goals.

I didn't forget Earth Day. During the late 1990s and into this century, I led groups of middle school and high school students on many outings, including annual Earth Day projects in the Wissahickon.

These chapter Earth Day activities were listed as of publication. For the current list, please go to http://amcdv.org/ed-50th.html

Earth Day Then a

Fri-Sun April 17-

Sat April 18 Eart

Sat April 18 Eart

Sat April 18 Eart

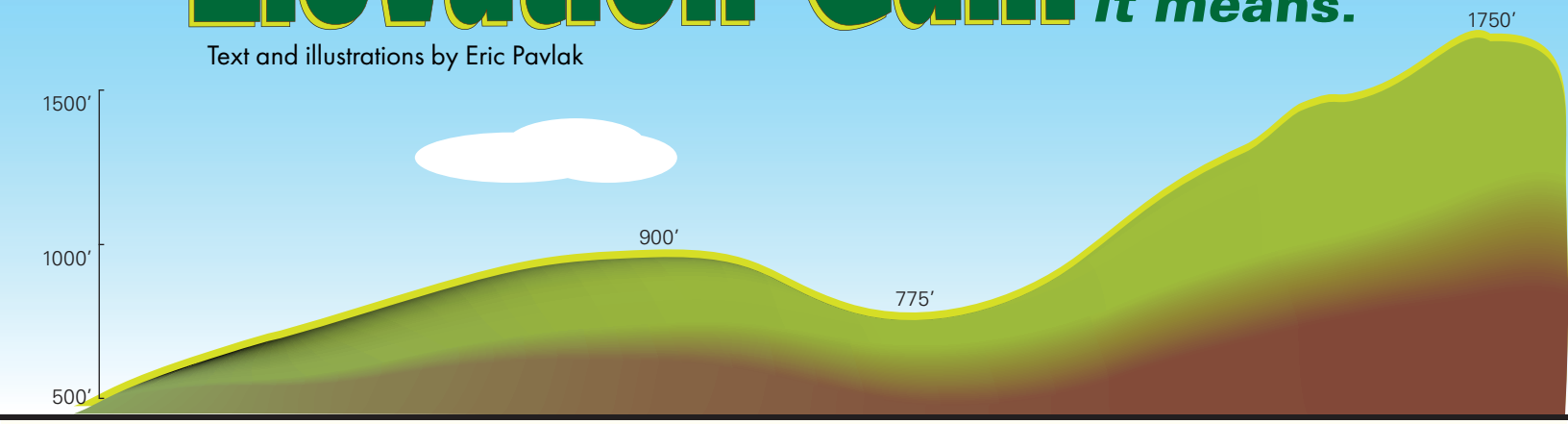
Sun April 19 Earth Day 50th Anniversary Monocacy Way Clean-Up Hike Easy.

Sun April 19 Earth Day 2020 Trail cleanup at Pocono Environmental Education Center.

All AMC evente and trips are canceled as of March 17 until April 30 due to the COVID-17 outbreak.

Elevation Gain and loss, and what it means.

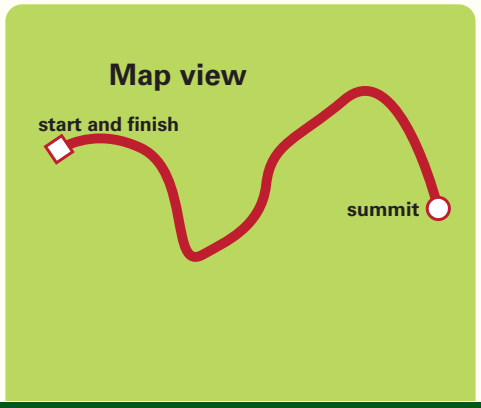
Text and illustrations by Eric Pavlak



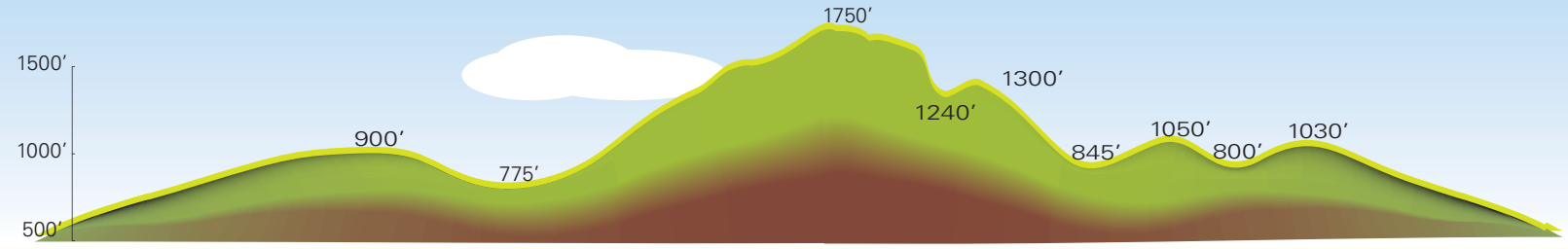
Imagine a simple out-and-back hike to a summit overlook, like the one shown in profile above and as a map, right. The length is four miles from start to summit.

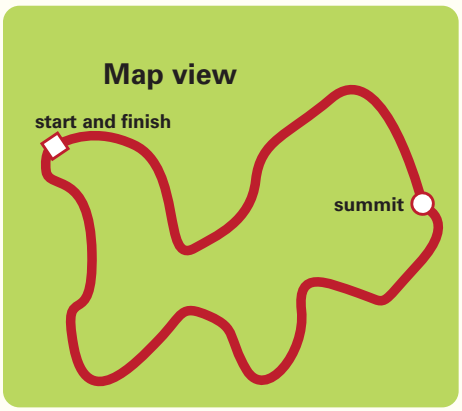
The elevation change from start to summit is 1750 feet minus 500 feet, or 1250 feet. However, our hikers have to first climb from 500 to 900 feet, a gain of 400 feet. After descending, they then climb from 775 to 1750 feet, a gain of 975 feet.

Thus the total elevation gain is 400 plus 975 feet, or 1375 feet. Our hikers are returning to the start, and the total elevation loss is the same as the gain



For any hike that returns to its starting point, be it a loop or an out-and-back, the elevation gain and lost must necessarily be equal. They likely will be different on shuttle hikes.





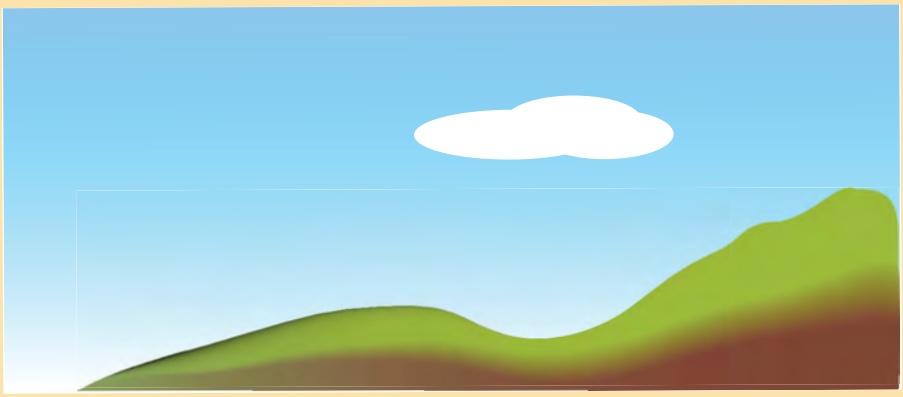
A loop hike, like the one shown in profile above and as a map, left, gets more complicated. Again, all the elevation gains must equal the losses when you return to the starting point. You can do this using a topographic map, but it is not usually easy.

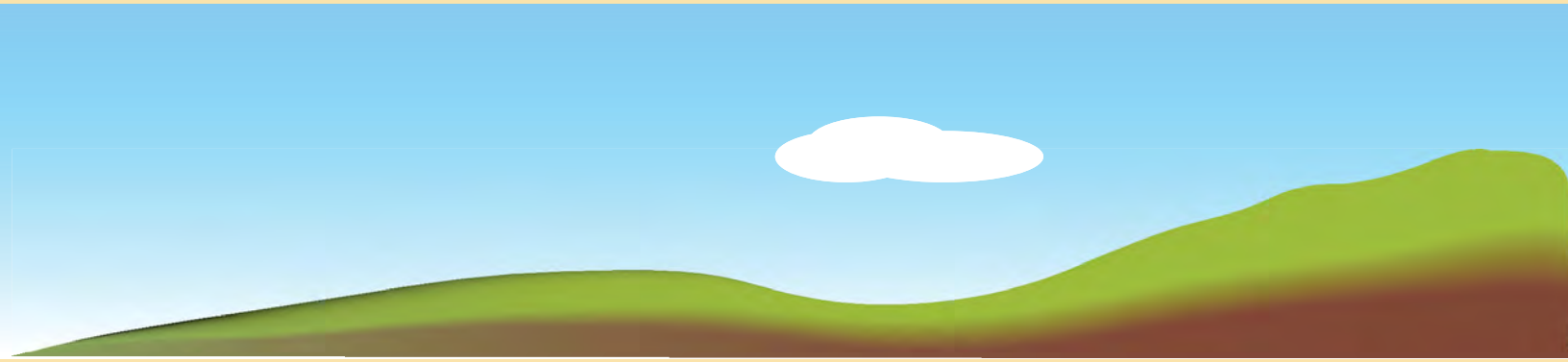
Total elevation gain is useful information when describing a hike. It gives the participants an idea of what to expect, and fits into the new AMC rating system.

Fortunately, there are easier ways to get this information than a map and much arithmetic. **MORE ▼**

Elevation Gain, continued

Steepness is also an important factor. The same vertical gain or loss over longer distance makes for an easier hike.
Steeper ascents and descents are not only harder, they can slow the pace of the hike.





Ways to find the elevation gain for a particular hike:

1. **Ask someone who knows. Perhaps someone who has led the hike before.**
2. **Do a search on the AMC database or on the internet.**
3. **Check guide books and internet resources.**
4. **Scout the hike and use a GPS app or device.**

Ask someone who knows. You may have decided to lead a particular hike after having participated in it, or having seen it in the trip listings. Check the listing or ask the leader of that hike,

Search the AMC database or do a web search. It is rare that you will be doing a particular hike for the first time. The elevation gain may be readily available. Check a reliable source. If in doubt, check multiple sources. If two or more concur, they are probably correct, and certainly good enough for your purposes.

Check guide books and internet resources. Guide books are a good source. There are many reliable web sites that give trail elevation gain. A good place to find these is our chapter web site: http://amcdv.org/trailhead.html. The link to this page is under the calendar.

GPS (global positioning system) devices and apps work well, but have limitations. If you scout the hike, by all means use one. But understand their limitations. Dedicated GPS devices are somewhat better then cell phone apps, but both work well enough to use. GPS is fairly accurate for horizontal measurement, such as the length of a hike. It is probably within 20 percent accuracy for elevation gain and loss, which is good enough.

GPS is horizontally accurate. GPS devices and apps give fairly accurate horizontal distances, for example, the length of a hike. Horizontal distances are measured by triangulation with multiple satellites. At the end of a 10 mile hike, two or more devices are usually within a few tenths of a mile. No two hikers walk the same exact path, and small variations accumulate. This explains the slight differences. **MORE ▼**

Elevation Gain, continued

GPS is less accurate vertically. GPS devices and apps measure vertical distances by measuring tiny time differences in signals from satellites that are 12,600 miles away. They are usually within a few feet of a true reading, but these small variations and errors accumulate over a hike of many miles.

Try this GPS test: At the end of a hike, when you are at the same place you started your GPS device, check your total ascent and descent numbers. They should be the same, since you are back to where you started, but they almost never are. Check with other GPS users, and see what they get both in total elevation gain and also see if their ascent and descent totals match.

GPS is not perfect, but it is good enough. After all, what you are trying to do is give prospective hikers an idea of the difficulty of a hike. It is good enough to work with the new AMC trip ratings, which are general approximations at best.

Vertical gain and loss in activities other than day hiking. Consider backpacks as a series of day hikes made more difficult in that you are carrying your shelter, plus food and fuel for several days. The hardest day is what determines the overall difficulty of the trip.

Bicyclists calculate vertical gain and loss the same way as hikers, but steepness is even more of a factor in bicycling then walking.

Cross-country skiers can calculate their vertical gain and loss the same as hikers. However, long, steep climbs can be more tiring on skis than on foot.

Paddling is completely different. Rivers with descents of 20 feet per mile or more are guaranteed to produce whitewater. Most flatwater trips have descents of less than 10 feet per mile.

Volunteers sought for AMC's Fall Gathering 2020

The Delaware Valley Chapter of the Appalachian Mountain Club will be hosting the club-wide annual event of Fall Gathering. This will be held Friday, October 16 to Sunday, October 18 at the Pocono Environmental Center (PEEC), 538 Emery Road in Dingman's Ferry, PA.

Moving each year from chapter to chapter, Fall Gathering is a once in a decade (or so) event for each chapter. October of this year will see AMC Delaware Valley Chapter hosting 200+ club leaders, chapter leaders, and members from all of AMC.

Many outdoor and indoor activities will be scheduled during the weekend. Volunteers will be needed to help keep events and people moving smoothly through the weekend. We will need people to act as AMC Ambassadors, Facilitators and Hosts. Tasks such as:

- Greeters
- General direction assistance to the participants
- Parking attendants,
- Assistance with registration,
- Assistance with activity sign up,
- Help directing lines during meal time,
- Assistance to participants with after activities,
- Runners to help keep all working smoothly,
- Clean up and inventory of supplies at event closure

You do not need to be a leader to volunteer for Fall Gathering.

There will be an on-site hospitality room stocked with coffee, tea, cold drinks, snacks and chairs exclusively for the use of volunteers!

There will be a limited number of free campsites available for people **only volunteering** for (but not attending) Fall Gathering 2020.

Whether you plan on attending Fall Gathering and can offer a few hours of your time during the weekend or will not be attending Fall Gathering but would be willing to volunteer for a day or two, we need you.

In the coming months, we will be also seeking volunteers at our upcoming events such as the Leader Dinner on Saturday April 4. Look for our table promoting Fall Gathering and sign up to volunteer.

You can also contact the volunteer coordinator for Fall Gathering 2020, Margaret McDonald at fg-volunteer@amcdv.org

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Sign up for the Adventure Travel Newsletter

If you want to learn about new Adventure Travel trips, get the most up to date listings right to your in box! To sign up for the quarterly Adventure Travel newsletter go to:

www.outdoors.org/ATnewsletter-signup

DV Chapter invests in two long-term AMC projects

By Susan Weida, Chapter Chair

For those of us who love the outdoors, being able to invest in projects that will provide lasting opportunities for others to experience the same pleasures that we have discovered is always a joy.

As members of the DV Chapter, you have made such an investment in two special programs in 2020: AMC's Mohican Outdoor Center and AMC's Maine Woods Initiative-Pleasant River.

At the all-day meeting in December, your Executive Committee representatives voted to use funds from our excess invested reserves to support these programs.

Many of you have spent time visiting AMC's Mohican Outdoor Center in the Delaware Water Gap, geographically the closest AMC lodge and open year round for outdoor activities. Delaware Valley leaders have used Mohican for activity programs over the years, and our recent DV Chapter Fall weekend was held at Mohican.

Mohican is located on a beautiful glacial lake in the 70,000-acre Delaware Water Gap National Recreation Area, only steps away from the Appalachian Trail and provides both cabin and camping accommodations. Some recent events at Mohican have been the Thanksgiving and Christmas Day group dinners which allow for fellowship and hiking at the center.

Mohican's facilities are in need of many repairs to keep it a relaxing retreat for outdoor lovers. DV Chapter's contribution of $5,000 will join with other contributions to complete these projects.

Find more information on Mohican Outdoor Center on the web at https://www.outdoors.org/lodging-camping/lodges/mohican

The second project that your EC chose to support this year is not as close to our area, but one which has huge potentials for our future as we ponder how to conserve our precious natural resources and develop solutions to climate change.

A $5,000 donation has been made to the purchase of land in the Pleasant River Headwaters Forest as part of the Maine Woods Initiative. This project is important for protection of watershed and stream habitat for Atlantic salmon and native brook trout. It adds to a climate resilient landscape by providing large tracts of intact forestland for species diversity and increasing the forest's ability to sequester and store carbon.

This project will also contribute to boosting the local economy through sustainable timber management strategies and tourism dollars from the series of AMC lodges in the area-Medawisla, Gorham Chairback and Little Lyford.

The DV Chapter got a lovely recognition at Annual Summit for their vision in supporting this important program that is far from our southern location. Find out more about this project (and also see a video from our 2019 Annual Dinner speaker Steve Tatko) here: https://www.outdoors.org/conservation/maine-woods/pleasant-river

Chapter excess reserves that were used for this purpose are funds in excess of the current 18 months of operating income based on annual budget. These reserves can only be used for new, unbudgeted initiatives related to AMC mission, donation to AMC projects or approved donations to other community, conservation or charitable programs that are consistent with AMC's mission.

Now is the time to volunteer

By Mike Manes, one of our chapter's eminent volunteers

Spring is here, a time to get outside, a time to enjoy the great outdoors, a time to really appreciate AMC-DV and the outdoor opportunities of the Delaware Valley. If you want to try to make AMC better, just volunteer for one of the many jobs that keep this group running.

This article has two purposes, the first purpose is to thank all those who volunteer their services, the second purpose is to encourage others to volunteer.

Currently the leadership of our chapter gives attention and awards to volunteers in certain areas. It is my strong belief that all volunteering should be recognized equally for an equal amount of time. That is a very difficult task for our executive committee.

My other belief is that every outdoor participant with a desire to help is able to help. Not every active member is qualified to become an activity leader, but every active member is capable of picking up garbage in an area cleanup.

Most trail work and conservation work requires minimal training, training that can be done in a few minutes at the start of the activity.

Over my twenty seven year membership I have led hikes, trail maintenance, and conservation activities. You may have seen videos of trail maintainers removing large trees or breaking and moving massive rocks. This is often filmed but rarely done. Most conservation activities, including trail maintenance, are gardening, making small cuts with pruning shears, pulling invasive weeds and putting up signs and other markings.

Most of the readers of this article will be reading this electronically after downloading it from our chapter website. Who do you think constructed and maintains this website? Who edits this *Footnotes* newsletter? Look further into this issue of *Footnotes*, who creates all the statistics on miles hiked, or activities led? Stop and think, who runs and maintains the activities database? These are all volunteers, and I emphasize that I am using the plural of volunteer.

Do you attend social events? Some of us recognize the leaders who run the event, let us remember all those who assist.

When you participate in a group activity like hiking, biking or paddling, many participants thank the leaders but do you also thank the sweep?

My special thanks go to those who train others. Those who train new leaders, trainus in first aid, or inform us of environmental problems. You may do it for love of the activity but you have to study the problem first.

A hardy thank you to all volunteers, you are the ones that make AMC-DV a great organization. I would also like to thank all members of our Executive Committee and others that are mentioned on the second page of every issue of *Footnotes*.

Did I forget to mention, either directly or indirectly, any volunteers? Almost certainly I did. Please excuse me, for I thank you also. I also hope I will be informed of those volunteers that I overlooked in preparing this article.

Top leaders and activities participants of 2019

Most active participants

ranked by mile equivalents:
Hiking–1mile=1mile
Backpacking – 1 mile = 1 mile
Snowshoeing – 1 mile = 1 mile
Biking - 1 day bike ride = 10 miles
Paddling – 1 day paddling = 10 miles
X-C skiing – 1 day trip = 10 miles
Alpine skiing – 1 day trip = 10 miles
Trail work – 1/2 day = 15 miles
Conservation - 1/2 day =15 miles
Shelter Watch – 1 visit = 10 miles
Volunteering – 1 outing = 10 miles

Name	#activities	mileage
1. Jane Richter	200	1599.33
2. Gregory Bernet	104	1000.75
3. Karen Rossino	112	990.15
4. Jay Gross	125	833.3
5. Larry Priori	107	743.15
6. Joseph Nanfara	110	702.62
7. Susan Weida	79	695.15
8. Adrian Noble	67	684.18
9. Raun Kercher	43	647.65
10. Joan Aichele	70	635
11. John Rogers	73	602.65
12. Robert Liston	63	594.2
13. Amy Williams	66	584.4
14. Jerry Taylor	64	571.15
15. Denis McCartan	66	560.9
16. Larry Butler	55	554.4
17. Richard Einstein	61	546.6
18. Kathy Ciliberti	62	541.55
19. Sue Bickford-Martin	49	508.1
20. Jeffrey Schrager	73	473.6
21. Karla Geissler	54	423.8
22. Reed Goossen	46	405.5
23. Robert Hileman	41	384.65
24. Dan Loughner	42	383.9
25. Barbara Blythe	27	368.8
26. Jerald Srodes	39	355.8
27. Lois Rothenberger	51	352.5
28. Len Morawski	46	350
29. John Rowen	45	349.3
30. Rich Pace	37	326.1
31. David Schofield	38	322.1
32. Julia Watson	31	314.2
33. Tom Sherwood	41	312.3
34. David Stein	63	308
35. John Garner	39	302.9
36. Walter Auyeung	43	298.5
37. Sue Auyeung	43	297.7
38. Michael Ahern	34	291.3
39. Geraldine Chmiel	33	289.3
40. Mike Manes	25	284.6
41. George Rockett	42	274.6
42. Michelle Thompson	31	274.25
43. Tammy Brown	31	271
44. Roger Brown	28	249.8
45. Kieutien Manes	21	245.6
46. Midori Wakabayashi	23	242.3
47. Steven Campanelli	14	238.7
48. Noelle Schwartz	22	235
49. Cameron Smith	27	230.75
50. Beverly Eccles	38	228.5
51. Cindy Crosser	20	224.7
52. Richard Kowal	26	224
53. Bill DeStefano	9	223.9
54. Marguerite Hayes	38	221.6
55. Marty Mersky	26	220.2
56. Diane Ullmer	26	213.6
57. Rob Splaine	22	213.2
58. Janet Remig	27	205.75
59. Richard Hudson	25	202.5
60. Patricia Merkel	24	198.18
61. Margaret McDonald	28	197.35
62. Kathy Kindness	27	196.5
63. Kathy Hughes	22	184.3
64. Jeanna Nelis	22	183.9
65. Phil Mulligan	17	179.3
66. Joanie Schultz	19	176.3
67. Peter Jarrett	25	176.25
68. Scott Holloway	26	173
69. Judy Farrell	10	171.5
70. Carolyn Reynolds	22	170.9
71. R. Phelps	17	166.64
72. Allison Hudson	21	164.5
73. Leo Connolly	23	164.5
74. Dorothy Knaus	20	163.25
75. Doug Espenlaub	18	159.2
76. Jesse Gusler	15	158
77. Rand Salani	14	157
78. James Bloom	19	155.85
79. Lynn Fraser	19	155.85
80. Jackie Ford	27	155.5
81. Theresa Berntsen	18	155.3
82. Jennifer Percival	27	153.5
83. Deane Bartlett	20	152.35
84. Susan Schmitt	17	152
85. Priscilla Estes	19	147.6
86. Michel Daage	15	147.6
87. Malcolm Preece	18	144.75
88. Lisa Lombardo	17	144.2
89. Gloria Reisman	21	143.1
90. Debby Walsh	25	143
91. Paul Schott	16	141
92. Mary Morley	18	139.15
93. Nancy Marciniak	18	136.75
94. Justin Fried	10	135.4
95. Jose Ibarra	9	135
96. Weston FennerIV	9	134.94
97. Mary Wilson	17	134.15
98. Ira Rubinstein	21	131.9
99. Dave Hoke	17	131.3
100. Sharon Yates	11	130.7
101. Annette Sheldon	19	130
102. Glenn Shoup	13	130
103. Lisa Schustak	16	128.15
104. Jude Hanrahan	20	128
105. Lennie Steinmetz	18	128
106. Rebecca Groulx	21	124.02
107. Sal Cannistraci	20	123.7

Most active leaders

Four or more leads

Michael Ahern	Jean MacFarlane
Joan Aichele	Mike Manes
Barbara Beatrice	Jeanne Mantell
Sue Bergmann	Denis McCartan
Gregory Bernet	David Mong
Theresa Berntsen	Phil Mulligan
Susan Bickford-Martin	Joseph Nanfara
Barbara Blythe	Adrian Noble
Tammy Brown	Rich Pace
Steven Campanelli	Eric Pavlak
Geraldine Chmiel	Jennifer Percival
Eleanor Conwell	R. Phelps
Cindy Crosser	Malcolm Preece
Stan deRiel	Larry Priori
Bill DeStefano	George Rockett
Richard Einstein	John Rogers
Judy Farrell	Karen Rossino
Justin Fried	John Rowen
Cindy Friel	Rand Salani
Jeff Fritzinger	Paul Schott
Karla Geissler	Noelle Schwartz
Reed Goossen	Daniel Schwartz
Jay Gross	Annette Sheldon
Jesse Gusler	Tom Sherwood
Richard Hudson	David Stein
Phillip Hunsberger	Lennie Steinmetz
Jose Ibarra	Bill Steinmetz
Peter Jarrett	Diane Ullmer
Raun Kercher	Midori Wakabayashi
Mark Kern	Jill Watkins
Kathy Kindness	Julia Watson
Richard Kowal	Linda Watsula
Robert Liston	Susan Weida
Christine Loch	Barbara Wiemann
Edward Loch	Amy Williams
Lisa Lombardo	Ann Wolf
Dan Loughner	Sharon Wunner

Name	#activities	mileage
108. Hil Feusi	17	123.65
109. Susan Mosley	15	122.8
110. Joanne McDonald	15	120.75
111. Cindy Friel	17	120
112. Mike Pfeffer	12	120
113. Gregory Hartman	13	115.2
114. Steve Clifford	10	112.8
115. Rich Weber	11	110.6
116. Pat Weber	11	110.6
117. Blase Hartman	6	110.5
118. Barbara Beatrice	21	109.5
119. Carol Broadbent	18	109
120. Carolyn Bovell	11	105.7
121. Robert MacMillan	18	105.4
122. Sue Bergmann	16	104.7
123. Jen Rizzo	11	104.6
124. Marcia Comstock	15	104.4
125. Kirit Amin	16	104
126. Sharon Wunner	13	101.7
127. Kyle Conrad	13	101.5
128. Ellen Berry	12	100

Three nasty bugs that are harming our environment

By Mike Manes

It is springtime, time to get outdoors, time to enjoy the rebirth of plants. It is a time to watch the flowers of spring rise, to observe the leafing out on trees. It is also a time for invasive plants, nasty and destructive insects, and poison ivy. Plenty has been written about the beautiful wonders of spring leading to the wonders of the warmer months of the year. Unfortunately, I will write about something less pleasant, those tree destroying insects and diseases that have changed the ecology of the Delaware Valley.

In the first of two articles I will discuss three species of insects, each one of these attacks a number of types of vegetation. They have changed the forests, lakes, streams, meadows and wetlands that AMC members past and present have loved. There are numerous such problems, but I will limit this discussion to three of the worst insect pests in the history of the Delaware Valley.

Spotted Lanternfly (SLF) (*Lycorma delicatula*)

In early October of 2018 my wife and I decided to take a six mile hike at Green Lane Reservoir. A hike near home that we were doing about once a month, sometimes leading AMC-DV hikes there. About half way through the hike we stopped at our favorite lunch site, by the Ward Road parking area.

Quickly we were swamped by Spotted Lanternflies, each of us squashing about a dozen flies in a matter of minutes. We could see the SLFs swarming overhead. These insects appeared to be most interested in several staghorn sumac bushes. I stopped leading hikes at Green Lane due to this experience.

At numerous outdoor locations in the Delaware Valley one will see warnings about the SLF.

The SLF is a native of East Asia that had its first recorded finding in our area in Berks County, Pennsylvania, in September 2014. It has since spread through southeastern Pennsylvania and adjacent areas of New Jersey and Delaware.

The SLF has been found to feed on over 70 species of vegetation. The three states in our chapter's area along with Virginia, Maryland and New York have in place quarantine laws and request viewers to report certain sightings of SLF. The quarantine laws are basically to prevent SLF from spreading. This is particularly concerned with eggs since the insects will deposit them on flat, movable surfaces, not only on trees or other vegetation. Reporting of sightings varies by county and sometimes by township. The details on both reporting and quarantining are continually being updated. Please consult the applicable state's website for Pennsylvania, for New Jersey or for Delaware.

Spotted lanternflys on a red maple tree in Berks County, PA.

If this article had been written a year ago, it would have discussed as a method of prevention the use of a tape barrier, sticky side out, on trees. Now this method is not mentioned by either New Jersey or Delaware, Pennsylvania has modified this method considerably. Solutions to problems that appear ideal at first often have secondary effects that are not so great. If you find SLF or any other infestation on property that you have control of, please follow the latest recommendations

Pennsylvania Lanternfl y info for homeowners
extension.psu.edu/spotted-lanternfly-management-for-homeowners

New Jersey Lanternfly info
nj.gov/agriculture/divisions/pi/prog/spottedlanternfly.html

Delaware Lanternfly info
agriculture.delaware.gov/plant-industries/spotted-lanternfly/

recommendations include the use of chemicals. In the case of the sticky tape on trees the problem is it not only catches SLF but also will catch beneficial insects and may catch small birds and climbing animals.

Let us look at the recommended procedures if you encounter the SLF in various stages of its life cycle, from eggs to flying menace. The first step is to learn to recognize the insect in all stages including the eggs. Know what seasons to look for different stages in their development. Check any movable surface for eggs, including the surface areas of your car

Then **Stop. Scrape. Squash**. Ask yourself should I report this? If yes, to whom? Take a look at the website for the state you are in as shown above and follow their instruction.

Hint: When squashing a lanternfly, approach it from the front. Like a housefly, they can't take off backwards. They are slower than houseflies, and fairly easy to squash. — Ed,

Continued on next page

Nasty bugs, *continued from previous page*

Japanese Beetle *(Popillia japonica)*

The first recorded finding of the Japanese beetle was in New Jersey in 1916. From the starting location, the beetles have spread at a rate of about 50 miles a year. They now inhabit most of the eastern United States and adjacent areas of Canada. This beetle has been observed to dine on over 300 different species of plant life. Fortunately there are many biological controls that attack this beetle. In areas where the infestation has been established the biological controls are established quickly. Japanese beetles are usually most destructive in the newly spread areas.

The best known biological control is one called milky spore disease (*Paenibacillus popilliae*, formerly *Bacillus popilliae*), a bacterial disease that attacks and kills the grubs of the Japanese beetle.

This beetle has two fronts on which it will attack vegetation. Grubs consume roots of grasses, adults attack leaves. The adults usually attack in mass, devouring the fleshy contents of the leaf with the veins remaining, leaving skeletal looking remains.

Above: Japanese beetle life cycle, Joel Floyd, USDA.

Top: gypsy moths destruction on Pinchot Trail, Mike Manes photo.
Gypsy moth, adult and caterpillar. USDA photos.

Gypsy Moth (*Lymantria dispar*)

The gypsy moth was introduced into North America in Medford, Massachusetts, in 1868. The purpose of this introduction was to experiment with silk production. As of now the moths have spread south to North Carolina and west to Minnesota. They are also in southern Canada, in the provinces of Nova Scotia through Ontario.

Like the spotted lanternfly and the Japanese beetle, the gypsy moth has a large number of host trees and is capable of defoliating a large area. I have attached to this article a photograph taken on July 3, 2006 to show the damage that can result from a large infestation of this moth. Please notice that the deciduous trees have no leaves, however the understory is still quite green. If the understory was not included in the photo one would think the photo was taken on January 3, not July 3. This photo was taken in Pinchot State Forest (formerly Lackawanna State Forest) about 15 miles east of Wilkes-Barre.

As with Japanese beetle, there are several predators of the gypsy moth, but the moth can still do considerable damage even in areas where predators have been established. An example is in the photo above, This area was first invaded by gypsy moths in the early 1970s, there were major problems in the same area in 2006 and 2007.

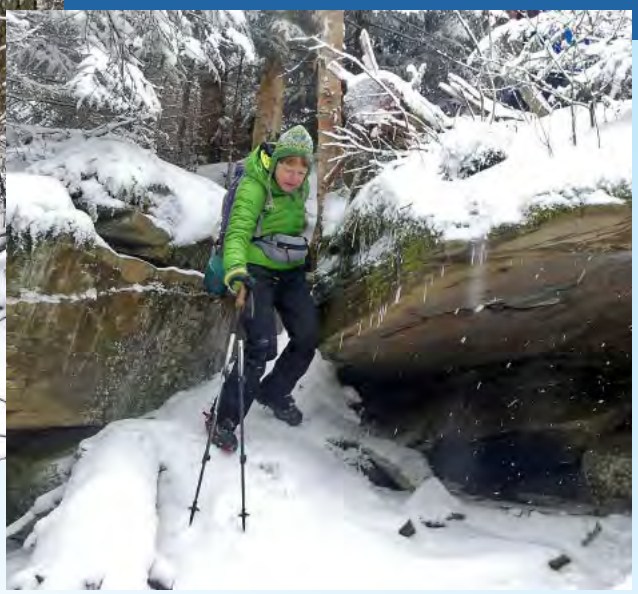
There is a secondary problem with the gypsy moth caterpillar. Some people are sensitive to a chemical in the hairs of the caterpillar and this produces a poison ivy like rash. This reaction may be direct or indirect, with the possibility of the chemical being windborne.

Summary

I have tried to introduce you to three of the most destructive insects to the forests of the Delaware Valley. All three of these find multiple hosts. I plan to have another article in the next Footnotes where four species specific infestations will be described.

Two of these will be insect infestations, emerald ash borer and hemlock woolly adelgid. The other two are fungus diseases, Dutch elm disease (DED) and chestnut blight. If you think the insects discussed in this article were bad, please wait and read the next episode.

Catskills Hikes Winter 2020



Photos on this page by Rich Pace

Catskills Hikes
Winter 2020

Above photo by Lennie Steinmetz
Others by Monika Jaeger