

Appalachian National Scenic Trail
Georgia to Maine

National Park Service
U.S. Department of the Interior



Adventure Guide

For Teens

**The Appalachian Trail
in Delaware Water Gap
National Recreation Area**



Explore, Learn, Protect

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Ready. Set. Hike...



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The Making of Delaware Water Gap

The Delaware Water Gap is one of the most strikingly beautiful and geologically interesting features of the Appalachian Trail. The Delaware River, which runs in a northwest to southeast direction along the border between Pennsylvania and New Jersey, cuts across Kittatinny Ridge, which runs in a northeast to southwest direction from New York to Maryland. The ridge is part of the valley and ridge district of the Appalachian Highlands Region consisting of a series of folded rock running predominantly parallel to the East Coast.

Delaware Water Gap National Recreation Area spans across the Delaware River and into two states — New Jersey and Pennsylvania. The recreation area is managed by the National Park Service and provides excellent recreational opportunities, such as canoeing, hiking and climbing. The Appalachian Trail runs through the recreation area for approximately 22 miles from New Jersey into Pennsylvania.

The Delaware Water Gap is all about Geology. So let's start out with a brief review.

Geological Time Scale

Remember the Geologic Time Scale? It divides geologic history into eons, eras, periods, and epochs.

The rocks we see at the Delaware Water Gap are primarily from the Silurian (408–438 million years ago) and the Devonian (350–408 million years ago) periods of time.

What era do these time periods fall within according to the geologic time scale?

Formation of the Appalachian Mountains

During the Paleozoic Era the site of the Appalachian Mountains was occupied by a Mediterranean sea in which sediments accumulated to a thickness of about 40,000 feet. The deposits were then folded due to plate tectonics and then uplifted due to changes beneath the earth's surface.

GEOLOGIC TIME SCALE

EON ERA	PERIOD	EPOCH	Present	
Phanerozoic	Cenozoic	Quaternary	Holocene	0.01
			Pleistocene	1.6
	Tertiary	Neogene	Pliocene	5.3
			Miocene	23.7
			Oligocene	36.6
		Paleogene	Eocene	57.8
			Paleocene	66.4
			Cretaceous	144
	Mesozoic	Jurassic	208	
		Triassic	245	
Permian		286		
Paleozoic	Carboniferous	Pennsylvanian	320	
		Mississippian	360	
		Devonian	408	
	Silurian	438		
	Ordovician	505		
	Cambrian	570		
Precambrian	Proterozoic		2500	
	Archean		3800	
	Hadean		4550	

(From *Decade of North American Geology, 1983*)

AGE IN MILLIONS OF YEARS BEFORE PRESENT

Plate Tectonics

The basic idea of **plate tectonics** is that the earth's surface is divided into a few large, thick plates that move very slowly either away from one another, past one another or toward one another. Related to the idea of plate tectonics is the concept of **continental drift**—the idea that continents move freely over the earth's surface, changing their positions relative to one another; and **sea-floor spreading**—the sea floor forms at the crest of the mid-ocean ridge and moves horizontally away from the ridge.



At the end of the Paleozoic Era, the Appalachian Mountains were probably high, rugged mountains rivaling the modern Alps. But a huge rift, or break in the earth's crust, occurred during the breakup of the super-continent Pangea. What is now Africa began to move away from what is now North America. Using the map below, can you identify the continents of Africa and North America?

During the 225 million years since the Paleozoic era, the uplifted formations have been subjected to weathering and erosion. These processes resulted in the erosion-resistant gray sandstone and “conglomerate” rock called the Shawangunk Formation that we see today. This rock forms the magnificent cliffs of the Delaware Water Gap.

Water Gaps: What Came First...The River or the Gap?

The Delaware River runs through this ridge and has carved a geologic feature known as a water gap. One theory is that streams and rivers of the area went through a process of “capturing”. The headwaters of the first river eroded their way north to the area of today's gap. Finding a fault in the rock, the headwaters worked their way through the ridge to the north side. There they “captured” the flow of the streams and rivers on the north side of the ridge, slowly eroding their way through the gap. At this time the Delaware River was hundreds of feet higher than today.

What is the definition of a water gap?

How would you describe the Delaware Water Gap for a new Appalachian Trail Guide?



Take A Hike

There are many great hiking trails in the Recreation Area including the Appalachian Trail.

The Appalachian Trail runs in a Northeast/Southwest direction and parallels the Delaware River. The ridge has one name in Pennsylvania and another name in New Jersey.

What is the ridge called while hiking in New Jersey?

What is another name for the ridge when hiking in Pennsylvania?

Elements to Consider when Planning a Trip (from Leave No Trace, Inc.)

1. Identify and record the goals of your trip.
2. Identify the skills and abilities of the participants.
4. Select destinations that match the goals, skills, and abilities of the participants.
5. Seek information about the area your group plans to visit from land managers, map.
6. Check the normal weather patterns and temperature ranges for the area during the time of year your trek is planned. Get a projected weather forecast the night before departure. Adjust your plans if necessary, considering the knowledge, experience, and preparedness of the group.

Leave No Trace Principles

1. **Know Before You Go**—
Be Prepared.
 2. **Choose the Right Path**—
Stay on the Trail.
 3. **Trash Your Trash**—
Pack it in. Pack it out.
 4. **Leave What You Find**—
As you found it
 5. **Be Careful With Fire**—
Use a camp stove.
 6. **Respect Wildlife**—
Never approach, feed, or follow
 7. **Be Kind to Other Visitors**—
Listen to nature and avoid loud noises.
- Care for Special Places
Visit Leave No Trace, Inc.
www.lnt.org
for more information

7. Choose equipment and clothing for comfort, safety, and to follow Leave No Trace principles. Include these outdoor essentials:

a. Extra clothing	h. Maps and compass	m. Small trowel for digging a cathole
b. Extra trail food	i. First aid kit	n. Small strainer or one-foot square piece of fiberglass screen for removing food particles from dishwater
c. Rain gear	j. Watch	o. Gators for muddy trails or trails with loose stones
d. Pocketknife	k. Sun and insect protection	
e. Matches and fire starters	l. Camera with zoom lens for photographing wildlife at a distance	
f. Camp stove		
g. Water Bottles		
8. Axes and saws are not needed for collecting and preparing wood for a Leave No Trace fire. Downed, dead wood is gathered from the ground and broken by hand.
9. Plan trip activities to match the goals, skills, and abilities of the group.
10. Evaluate your trip upon return; note changes to make next time.

Pack out everything you carried in, even what you would consider to be organic material. Coffee grounds, fruit, or egg shells may seem to be harmless. However, anything you leave behind is not part of the natural environment of the Delaware Water Gap. Fruit waste such as apple cores, orange peels, banana peels, etc. are biodegradable. However, if left behind what impacts might these have on wildlife and on other people's experience?

One of the Highlights of the Appalachian Trail in Delaware Water Gap National Recreation Area is the view from Mt. Minsi. Below is a description of the Appalachian Trail up Mt. Minsi. (Adapted from the Keystone Trail Association's *Pennsylvania Appalachian Trail Guide*. (Bold numbers display the mileage for each section.)

Detailed Trail Data — North to South

- 0.0** From the hikers parking lot continue south along the Appalachian Trail.
- 0.2** Pass Lake Lenape on the right. A blue-blazed side trail on the left reconnects with the A.T. at 0.4 miles.
- 0.3** Bear left off of gravel road. The gravel road leads up the mountain and to a side trail to Table Rock with a view of the Water Gap. For the next two miles follow blazes carefully because there are many unmarked trails branching off of the A.T.
- 0.4** Blue-blazed side trail to left reconnects with A.T. at 0.2 miles.
- 0.5** Council Rock. Down the Delaware River, the tilted strata of Mount Tammany on the left side of the Gap is said to show the profile of Chief Tammany.
- 1.1** Cross Eureka Creek and turn left, ascending.

- 1.3** Lookout Rock. Double back and follow switchbacks carefully along rock faces. At the top of the rocks is a view north to the Pocono Plateau, and Big Pocono.
- 2.0** Panoramic view of the Delaware Water Gap and the surrounding area of Pennsylvania and New Jersey.
- 2.3** Summit of Mt. Minsi. Trail follows a gravel road along the crest.



Using this description and the map on the following page, plan a day hike up Mt. Minsi. Would you consider the hike to be easy, moderate or difficult?

Is there a loop hike you can plan using a trail connecting to the A.T. or would you prefer to hike up and back on the A.T.?

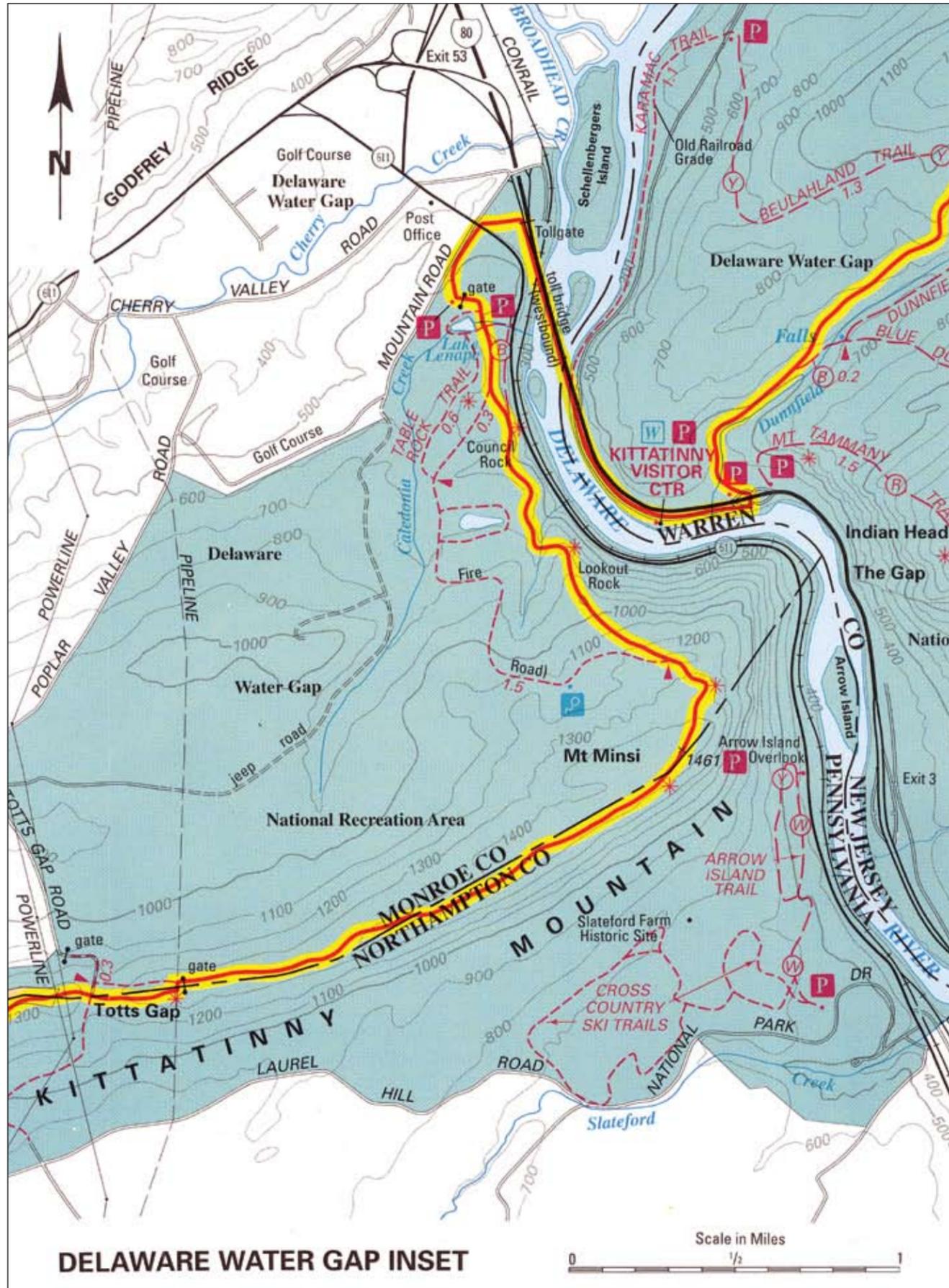
How many miles is your planned hike?

How much water should you plan to take?

What sites will you see along the way & Can you find those sites on the map?

What are some other items you should always have in your daypack?

After your hike, describe your experience.



ACTIVITY
3

The Wildlife

The ridge and valley region of the Appalachian Mountains serves as an invaluable environment for wildlife. The ridges serve as “globally significant” migratory paths for hawks, eagles and millions of songbirds as they find their way south for the winter months. The Kittatinny Ridge has been designated as an Important Bird Area encompassing over 500 square miles. Hawks and other birds of prey take advantage of the ridge’s updrafts to find their way to their winter homes much farther south. The ridge is also the largest uninterrupted forested area in eastern and central Pennsylvania.



What breeds of hawk are commonly seen while hiking along the Appalachian Trail in Pennsylvania and New Jersey?

What songbirds might you expect to see?

Wildlife Safety

Wildlife you might encounter in the Delaware Water Gap Area: Check off all that you see.

- | | |
|---|------------------------------------|
| <input type="checkbox"/> Black Bear | <input type="checkbox"/> Opossum |
| <input type="checkbox"/> Turkey | <input type="checkbox"/> Skunks |
| <input type="checkbox"/> Whitetail Deer | <input type="checkbox"/> Squirrels |
| <input type="checkbox"/> Raccoons | <input type="checkbox"/> Rabbits |
| <input type="checkbox"/> Snakes | <input type="checkbox"/> Insects |

Are there others you can add?

When hiking and camping in any wilderness areas, remember to dispose of food properly by burial or other means. Never take food into your tent with you. Never attempt to feed wildlife.

Preventing Tick Bites

- Avoid tick-infested areas, avoid sitting directly on the ground, and stay in the center of paths
- Wear light-colored long pants and long sleeves when you venture into grass, woods, garden or beach area so you can more easily see ticks
- Tuck shirt into pants and pants into socks to thwart a tick's effort to crawl onto your skin
- Use EPA-approved tick repellents. Wash-off repellents when you return inside
- Do frequent tick-checks, including a naked full body exam upon returning inside

What serious disease can deer ticks carry?

Match the following wildlife tracks with the correct image:



ACTIVITY 4

A Thru-Hiker's Journey

Read the following journal entries and answer questions.

Ben Reuschel, A.T. Thru-Hiker, 2004

Trail Name: Officer Taco

Thursday, December 11, 2003

Phewwwwww...

Minutes ago I finished my last exam for the fall semester at Grand Valley State University. Now my attention shifts from papers, homework, and quizzes to mail drops, menus, and gear prep.

Back in 1998 I read a book, you may have heard of it—*A Walk in the Woods* by Bill Bryson. I was 14 at the time and just stuck the idea in the back of my head.

This whole plan to hike became a reality on a section hike of the A.T. in Great Smoky Mt. National Park this past spring break. Less than one day hiking in the Smokies, convinced me that I had to accommodate for this trip. Easy enough; add another year of school!

As I planned to drop the ball on my parents, I did not believe that they would take me seriously. I figured they would scoff and just pass it off as a "phase". Mom carried more of a worried tone and I am not sure exactly what my father thought. By early summer boxes from backpacking supply stores routinely kept showing up on our doorstep, addressed to me. I do believe that they got an inkling that I was legit.

Sunday, February 1, 2004—Day One

Weather: Cold and windy but sunny all day.

Breakfast: English muffins w/peach jam and instant oatmeal

Lunch: Snickers bites from Lauren's grandma

Dinner: Chili w/Fritos and cookies and cream pudding



Trail description: Mostly downhill according to the maps but all I remember are the climbs. Clear views.

Wildlife: Birds and squirrels

Complaints: Pack too heavy; sad to leave Lauren and Andy; cold at the shelter Where to begin....

If only I could have put today's weather in my pocket and save it for later. Just gorgeous. My friends Andy and Lauren really helped me get packed up in a hurry. By 11:30 we had the shelter register signed and we headed up Springer.

The time spent on the summit was pretty emotional. The last mile toward the parking lot was with minimum words spoken. Speaking only seemed to make someone cry. I thought that once we got to the parking lot and we would part ways things would be easier. Both Lauren and Andy had kind words to say. I did my best to speak, but it was useless. I told Andy, "I'm going to Maine".

There in the parking lot I left them and never looked back. I would guess that I sobbed for a good half mile. I could not stop thinking about the friends I was leaving behind. They mean more to me than I thought possible.

The afternoon went by really fast, thankfully. I really felt my pack weight for the first time ever. This was also the first time I have ever carried 50 lbs. I met Steve as he was resting just before Chester Creek. A super nice British man.

Steve was a paramedic with the British Royal Army for 12 years. He served part of his time as the EMT for the royal family. Here is the emotional and inspirational part... Ten years ago while on duty he was struck by a train. They removed part of his brain and he was unable to walk for four years. He says that his balance is almost non-existent and he fell six times already. Remind me to never ever complain about anything ever again. I think we all fell asleep by 8p.m. Steve said to me just before lights out "to wake me up if I snore". Steve was snoring within ten minutes of saying that. I was just happy to know the poor chap was breathing!

Questions

Would you consider hiking the entire A.T. as a thru-hike (all at once)? Yes No

Would you hike it in sections? Yes No

What are your reasons?

Monday, April 26, 2004—1,300 Miles Later...

Morning weather: Rainy and cool

Afternoon weather: Steady rain all day

Evening weather: Rain stopped I think

Breakfast: Chocolate cupcakes

Lunch: Ham buns and a Boston creme pie

Dinner: Hamburger Helper potato stroganoff

Trail description: The climb out of the gap was short and steep and once the ridgewalk began the rocks became present once again. They were tough again today. The worst ones were the big boulder-hopping stretches where the rocks were very slick. They really slowed me down. The rocks continued up into New Jersey. I have heard from several sources that the first 40 miles of NJ are tough. Only 30 more to go!

Animals: Deer and lots of squirrels

Money spent: \$4.95 for the creme pie and \$12 for the bunk room

Biggest complaints: After about 20 miles my feet are totally busted big time.

Thoughts: I had everything packed up when I went to bed except for breakfast and my toothbrush. Efficiency is one of my biggest liabilities. It bugs me that after 3 months on the Trail it still takes about 45 minutes to pack up in the morning. I was hoping to whittle that to like 20 minutes but I have only attained that goal a couple of times. Always room for improvement.

The rocks were bad again today but I closed out PA and only have 30 miles left until the meadows start again. I had my first and only fall in PA. I sat stunned for a second and hauled myself up to find myself alright. The scary thing was that I was moving slow and taking my time. It just goes to show you that the rocks are unforgiving.

I picked up a package at the Post Office in Delaware Water Gap. I got my fleece top back and I sent my windproof home, should save about 5 ounces. I have yet to need the windproof asset. I also got a new t-shirt to replace my blue one which I wore the back out of. My mom tossed in some drawings from my nieces. I headed back out of town and across the bridge into New Jersey.

The NJ rocks were just as bad as the worst of PA. This in addition to passing the 20 mile mark for the day started my feet hurting. There is something painful about hiking 20 miles every day.

The road leading to the Mohican Outdoor Center was a welcome sight. I took a nice long shower then went over my food drop. After making sure I had adequate supplies I made dinner in the kitchen. I went with Hamburger Helper because it is the hardest to clean up after on the trail and I might as well take advantage of the sink and soap.



Tuesday, April 27, 2004

Morning weather: Sunny, breezy, warm
Afternoon weather: Mostly sunny, warm
Evening weather: Cloud cover, 42 deg

Breakfast: Vanilla CIB, OCP, Falcone "cookies" with honey
Lunch: Candy bars, ritz crackers and peanut butter
Dinner: Cheddar potato soup with Ritz crackers, cookies and cream pudding, lemonade

Trail description: The rock density was about average, the climbs mild, descents uneventful, views much the same.

Animals: A snake. At first I thought maybe a timber rattler in the yellow phase but the tail showed no signs of a rattle. Even if immature the tail would at least be off color. I have never seen a copperhead but this seemed too yellow. It eventually grew tired of being looked at and semi-coiled up. Then it puffed out its head and neck cobra style and made a loud hissing noise. I figure that will give it away to someone.

Thoughts: Besides the snake, today was uneventful. The weather was perfect. The sun bright and the wind just strong enough to keep the sweat off you. The only real issue today was that my heart wasn't in my hike. Today it was work. Even though the terrain was rocky but overall favorable, it wasn't fun like it has been.

Part of it was missing contact with friends. It isn't that I'm lonely, just the day-to-day monotony is getting to me. It would be nice to have someone around who is going through the same thing.

When I look and see that I have already done 1300 miles, I can't believe it. It seems like yesterday I left Springer. 860 miles to go, that seems like such a small number, but to my busted feet it might as well be a thousand-mile bed of nails.

What really eats at me is the fact that today I quit 5.8 miles short of my goal. I wanted to push onto Mashipacong shelter but my feet would have none of it. I am a goal oriented, achievement seeking type of person. Even though I had no reason to make it there other than because I said so, I still feel like I failed today. I take my goals so seriously.

Thoughts of Ben's A.T. Journal

What were some of Ben's challenges and/or sacrifices?

What would you miss the most if you hiked the A.T.?

Sunday June 20, 2004—That's All She Wrote...

Weather: Clear in the morning, clouds rolled in but were high, so the views were never obstructed. It stayed right at 40 degrees the entire day. Strong, stiff winds, not enough to knock you down but sufficient to shift your balance and suck energy out of you.

Breakfast: Pop Tarts, granola bars
Lunch: granola bars
Dinner: 1 large bacon double cheese burger pizza from Dominos

Trail Description: Up and up, all the way. Although it wasn't the hardest climb for me on the trip, it was the steepest, longest climb on my hike. The first 2 miles aren't so bad. Then the boulders and drops get bigger. Once the trees disappear it gets sick. Basically a boulder scramble for the next 1.5 miles or so until you reach the Table land, where it is rocky but relatively flat. The final 1.5 miles are nothing.

People: Michael, Gina, and Dad.

Biggest Complaint: I was sleepy tired a lot of the day. Also very hungry later in the day. Which was satisfied by Krispie Kremes and Dominos Pizza.

It still didn't feel like it was my last day on the Trail, but I was happy to know that for the foreseeable future I would be back in a controlled environment

I was surprised that it wasn't harder for me, emotionally. It didn't seem like the end of the journey. Just another day. My sister caught the last 10 minutes or so of my hike on video. I had my composure until my dad came over and shook my hand. Then it was Feb 1 all over again. But the wind dried tears quickly. Or just plum blew them right off, hard to tell.

It was a little eerie, the feelings moving through me as we headed down the hill. It just didn't feel like I had done anything special. Maybe it will set in soon.

We got back to the van about 12 hours after we left. I polished off a half dozen Krispie Kremes and then signed the log book at the Ranger station. I simply scribed, "That's all she wrote."

You can read more of Ben's journal at: <http://www.trailjournals.com/entry.cfm?id=51047>

2006 update: Ben graduated from Grand Valley State University, and the Police Academy. He is now a Police Officer in Holland, Michigan.



More Thoughts of the Trail

Now that you have read sections of Ben's journal, has your answer to the question of whether you would consider hiking the trail changed? Yes No

If so, what changed your mind?

If not, was anything confirmed for you?

What would your trail name be?

Do you think people need the Appalachian Trail as a national resource? Yes No
Why?

Congratulations!

You are now an Appalachian Trail Jr. Ranger.

Show your completed guide to a Ranger at the Dingmans Falls Visitor Center, Dingmans Falls Park Headquarters, or Kittatinny Point Visitor Center and get your Appalachian Trail Jr. Ranger patch.

