NEWLY APPOINTED O.S.M. DIRECTOR VISITS WV

By Cindy Rank

When Robert Ururn, new Director of the U.S. Office of Surface Mining, met with members of the W.V. environmental community in March he promised to return to see first hand some of the acid problems they discussed.

He kept that promise at the beginning of June when he spent a day and a half looking at AMD (acid mine drainage) sites in the southern part of the state with representatives of WVRC and other conservation, sports and community groups.

The tour was arranged to highlight the 4-Ps of AMD: the FAILURE TO PREVENT acid by failing to deny permits where acid is likely to occur, the FAILURE TO ADJUST BONDS when acid does occur and the cost of reclamation increases, the FAILURE TO TREAT acid water at sites where bonds have been forfeited and the state is responsible for reclamation, and the FAILURE TO PROTECT lands and waters where the state improperly releases a company from its responsibilities for reclamation.

On the first day, the group visited several sites in the Tygart Valley watershed that were examples of the 4-Ps. They travelled from the Gray Run area where abandoned mine lands continue to degrade the mainstream of Tygart near Elkins, to the Middle Fork where the Kittle Flats area has destroyed County Fork and main Middle Fork for the next 40 miles downstream to Andoa State Park, to the Buckhannon and Tennille and ILUM where treatment is the fine line between life and death for the Tygart downstream of the mouth of the Buckhannon, to Sandy Creek where community groups forced the state to treat water at the forfeited F&M mine sites that eventually flow into the Tygart Lake.

The second day the group visited Valley and Omega, both mines in the Morgantown area. Later that day Ururn met with WV DEP (Department of Environmental Protection) Director Dave Callaghan then attended the Rivers Symposium and appeared on a local public TV call-in show on June 3rd.

Ururn returned to W.V. the following week to join the DEP mine tour of some of the big mountain top removal sites in the southern part of the state where contemporaneous reclamation and durable rock fill were the focus of concern.

Though he offered a sympathetic eye and ear, spoke strongly of enforcing the law, and appeared willing to do the right thing when it comes to the 4 magic Ps of AMD, Director Ururn has yet to see the fine line between life and death for acid problems.

The final chapter is yet to be written and the details are always the most difficult.

If You Build It They Will Come

by Bill Rogeht

Last October over 300 ORV users from 14 states came to Logan County for a two day off-road riding event. Besides turning around the countryside, the event also featured a parade with fire trucks and ambulances from surrounding areas. The town also held a "street festival" after the parade with string band music and food booths.

This event was carefully engineered by the Hatfield-McCoy Recreation Development Coalition, Inc., headed up by super-lobbyist Jeff Moore, who also represents the WV Garbage Haulers and the Motorcycle Industry Council among others. Moore has done his homework, getting politicians on board. His newsletter, the Hatfield-McCoy Update (come #1) announced that a Memorandum of Understanding was very shortly going to be signed between several of the groups he represents, Mingo County Development Authority, the US Bureau of Land Management, the National Park Service and the US Army Corps of Engineers. US Representative Nick Rahall announced at the big fête held at Chief Logan State Park on June 7 that his subcommittee on Roads and Transportation had inserted language into some bill authorizing the expenditure of $100,000 for trail lands for the Hatfield-McCoy Recreation Area. Moore has been at the Legislative session in Charleston the last few years trying to get bills passed to create an off road trail system for motorcycles and 4 wheelers. Strong opposition to the pro ORV bills (fueled by fear of trails on public lands) killed them. Last session Moore et al got a bill passed that releases landowners who grant a license, covenant or lease to a governmental entity from liability for accidents occurring on their land.

Moore's newsletter also announced that a feasibility study will be undertaken by a qualified professional contractor to secure that the Hatfield-McCoy Recreational Area will be implemented in accordance with the highest quality standards so that it "will always be a welcome asset for the community."

Here are some other interesting quotes from Moore's Newsletter: "The Hatfield-McCoy Recreation Area, a pilot project which may ultimately provide thousands of miles of well marked recreational trails for off-highway vehicle enthusiasts, horseback riders, bicyclists, and others, on private land, continues to progress to reality in southern West Virginia."

(Continued on page 3)
from the heart of the mountains—

by Cindy Rank

WYOMING COMES TO W.V.

As incredible as it may seem to those of you who know how my flesh crawls when I get within a mile of any source of Acid Mine Drainage, let me tell you how amazed...appalled...overwhelmed...humiliated...bewildered...perplexed...confused...sickened...angered...horrified...dismayed I was by the spectacle of the massive mining operations now being conducted in Southern W.V.

We routinely acknowledge that there are two major environmental problems associated with mining in W.V.: acid mine drainage (AMD) primarily in the north, and huge mountain top operations with durable rock fills in the south.

I've seen AMD in many settings, know how people and communities have suffered from it, know how difficult it is to convince regulatory agencies to enforce the laws that are meant to prevent such destruction of our water resources.

But nothing could have prepared me for the sights and sounds of the recent DEP Office of Mines and Minerals tour through some of our southern counties - not articles by Paul Nyden in the Gazette, not pictures of the giant dragslines out West, not even Bob Gates' film "In Memory of the Land and People".

I venture to say that as recently as ten years ago no one could have imagined, or would even have suggested, the enormity of the mines we visited in Nicholas, Fayette, Kanawha, Boone and Logan on June 7th and 8th.

Enshrouded in my memory are headlines in the early 1980's in Upshur County boasting that the Island Creek Tennille Complex was to be the "LARGEST surface mine east of the Mississippi". ...As you well know, I have no love for the Tennille operation or the destruction it has left in its wake, but it is dwarfed by its behemoth brothers to the south. Giant drag lines like those used out West are taking down hills and shifting them into nearby valleys at a rate that must mystify the authors of the "mountain top" removal provisions of the Surface Mine Act....

Standing on the edge of a Grand Canyon-like landscape with 18 splits of coal exposed along a 600 foot wall that extended from high above to far below our level on the canyon ridge, I couldn't help but wonder how these sites comply with the intent or letter of either the Clean Water Act or any Surface Mine laws.

Everywhere we went the scene was similar. Within a 360 degree viewing range, mountains were being ripped apart and dumped into valleys burying miles of headwater streams. These large refuse piles are then molded into hill-like mounds, and seed and fertilizer glued on, presumably to fulfill the "approximate original contour" (AOC) requirements of the law.

If it was confusing for me to imagine that this might be acceptable as AOC, it really boggled my mind that so little is known about future groundwater supplies (especially the shallow or perched pockets that support so many families in rural W.V.) in these porous refuse mountains, and that such widespread filling of stream beds is an acceptable impact to the hydrologic regime of the area.

I have no doubt that grass will grow. (Remember this is an industry that has been known to boast that, with enough glue and fertilizer, it could grow grass on telephone poles.) And trees are growing on the older areas (4 years is the oldest we saw on the tour). But how long or how strong the vegetation will be years from now, or how much of the original ecosystem will reestablish itself is not yet known.

Surely these vast projects are engineering feats to rival the seven wonders of the world, but the significant alteration of the earth mass is experimental at best. And this experimentation is not just on one or two sites, but seems to be the wave of the future in southern W.V. (All of course moving fullsteam ahead before the results of the initial experiments are known.)

If the legalities are questionable, the economics are even more astounding. While it's understandable that the Clean Air Act has shifted attention to the lower suffer coal areas of southern W.V., it is still puzzling to think that even 18 splits of coal can yield enough money to make it profitable to purchase giant size draglines whose 100 yard buckets alone cost $500,000 to buy, then every 45 days another $200,000 to refurbish, and teeth that must be replaced at $150 apiece every 2 days, and electricity bills that cost anywhere from $80,000-$100,000/month just to run the shovel, not to mention all the regular trucks, shovels, dozers, loaders, and other miscellaneous (see page 3)
Mountain Bike Race on North Fork Mountain Trail????

The Conservancy has just received this request from the Potomac District Ranger for comments on the use of North Fork Mountain Trail for a Mountain Bike Race. You all may remember the excellent article by Bob Stough in the church Issue of the VOICE on North Fork Mountain and its Old Growth Forest. I am very nervous about this intrusion into one of the last wild places in West Virginia. As a mountain bike rider myself I know how much damage a bike can do, especially breaking downhill. Please notice that over 100 bikes are expected this year, with the sponsors wanting to repeat and expand the race in future years. Comments are due by July 10. Better write yours today.

Hello,

The Pendleton County Visitor’s Committee has applied for a Special Use Permit authorizing them to conduct a mountain bike race on August 21, 1994. The proposed race would run on the North Fork Mountain Trail from US Route 33 to a point south of High Knob, then leave the trail on private lands to County Rd. 9. The route then passes through National Forest lands to the Roy Gap road. Length of the race course on National Forest land is 6.8 miles and is shown on the attached map. They anticipate over 100 mountain bike racers will participate, and they would like to repeat or expand the race in future years.

Before determining whether or not a special use permit will be issued, we would appreciate receiving your comments concerning use of the proposed bike race route on National Forest land. Please have your comments to the above address (Potomac Ranger District, HC 59, Box 240, Petersburg, WV 26447 304-257-4488) by July 10, 1994. Additional information may be received by calling Dick Vanderzoot at the above number.

Thank you for your interest in the Monongahela National Forest.

Nancy Feakes, District Ranger

Kumbrabow Trial May Be Reopened

The plaintiffs in the Kumbrabow State Forest lawsuit have been granted a hearing by Kanawha Circuit Judge Charles King, to allow them to present their arguments on having the case reopened. The plaintiffs contend that the Deputy Chief of DNR’s Wildlife Resource Division, Gordon Robertson, stretched the truth about the wildlife inventory done (or not done) for the Clay Run Timber Sale on Kumbrabow State Forest. Under oath Robertson had responded to a question about the existence of an inventory, implying that the DNR’s Natural Heritage Program staff had completed one.

In my humble opinion the bureaucrats just plain lied and tried to deceive the judge into thinking that the DNR had done a wildlife survey. I have filed two Freedom of Information Act requests and have only received the ramblings of high ranking DNR officials.

The trial will be held on July 14, at the Judicial Annex of the Kanawha County Court. by Bill Ragette’

Richard diPreteoro (new WVHC Administrative Assistant) at site of lime drum structure being constructed on the Blackwater River above Beaver Creek

WVHC Hires First Administrative Assistant

by Richard diPreteoro

I’d like to take this opportunity to introduce myself as WVHC’s first Administrative Assistant. This job was created to expand upon the duties of the membership secretary and provide assistance to the President.

As an important part of my job I will stimulate, encourage, and generally wheedle articles out of the WVHC committee chairs, organizational directors and others for the VOICE. To each of the chairs and organizational directors I will send a special plea to write a piece for the VOICE about your committee or organization. Send it, if possible, on an IBM formatted disk as ASCII text to Bill Ragette at the address listed in this issue. If not possible to send on disk, send it on paper, handwritten or otherwise, to me and I will prepare and send it on to Bill.

The deadline is generally the next-to-last Friday of each month. I will be calling you all to ask for commitments to write articles.

I plan to use volunteers as much as I can to further these goals. Please consider where you might help. For example, author Judy Roddy is using her expertise and experience in the publishing industry to help place Guides and VOICE. She also will be working with WVPH Alert.

Here is the job description prepared by a committee of the Board:

Membership

- Maintain computerized membership roll. Send out membership renewals.
- Deposit membership dues. Prepare monthly reports for Treasurer and quarterly reports for Board. Devise and implement membership development ideas, working with Membership Committee, VOICE editor and board.

Endowment Fund

- Use a variety of fund-raising techniques to increase endowment fund.
- Maintain bulk mail permit. Pick up and recycle mail (Currently handled out of Charleston). Respond to inquiries, coordinating with Membership Chair (thank-you to special donors, info requests, etc.) Provide mailing labels to Committee chairs and board. Maintain supplies of stationary, membership and endorsement forms and other items (hats, shirts, decals, patches, etc.)
- Assist Spring and Fall Review coordinators with mailings.
- Facilitate communication and networking between Committee Chairs and new members with specific interests.
- Maintain official books and records of the Conservancy.

Estimated time: 15-20 hours per week.

Pay: $500 per month.

Mountain Bike Race on North Fork Mountain Trail????

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1994 RIVERS SYMPOSIUM AT A GLANCE

By Cindy Ronke and... The Appalachian Rivers and Watershed Symposium was held in Morgantown June 3 and 4th. It was a jam packed two days full of information, discussion and even a bit of time for socializing.

It was timely happenstance that river guide Randy Robinson had made available a revealing video of the recent Acid Mine Drainage (AMD) blowout at T&O coal company at Muddy Creek on the Cheat River. That video highlighted the acid problem that plagues over 2400 miles of WV waterways. But the symposium dealt with a great number of other threats as well and explored ideas for future use and protection of the rivers of the region.

It would be ludicrous to attempt to summarize the myriad of presentations from the symposium, but we would like to reprint here the brief but eloquent welcoming remarks made by Roger Harrison, Executive Director of the W.V. Rivers Coalition and member of the WVRC Board of Directors. Roger's comments reflect the breadth of concerns and depth of feelings that pervaded the entire two days. Thanks to Roger and the many other people who helped the Rivers Coalition, the WVU Division of Forestry-W. Lee Hardinge Heritage Project, and the WV Department of Commerce, Labor, and Environmental Resources put on what is hopefully the first of many such symposia.

By Roger Harrison

Someone once said "rivers are the ribbons that tie the people to the land". Nowhere is the tie to rivers stronger than in Appalachia, and especially here in the heart of Appalachia, West Virginia. Most people associate mountains with Appalachia, but rushing down those mountains, through hallowed hollows and esmerald valleys, there is a labyrinth of rivers. Not just any rivers - but some of the most remarkable rivers in the nation. Cherokee, Seneca, and Shawnee peoples used the bottomlands along the rivers, for hunting and fishing. The rich river valleys of Appalachia drew white settlers who made a living from the streams and the waters. Later, rivers were the corridors along which railroads were built.

From the beginning rivers attracted use. Today, rivers are refuges of recreation and sources of drinking water. My connection to rivers goes back to childhood days along the Braid of the Potomac River. It was there during the summers where I led a privileged childhood-not privileged in the sense of wealth but privileged in the sense of having the opportunity to fish the waters and scramble the shores in the headwaters of the nation's rivers.

Later, I helped finance my college education at a full-time river guide on some of America's famed white-water rivers nestled right here as West Virginia. For me, it was always satisfying to guide people, literally from around the world down the rapids of the New, Guyule, and Cheat Rivers, but I often look for granted my connection to the river, to feeling a sense of peace and belonging. That is until a hot summer day in 1992.

During the heat of the 1992 Presidential primary race, candidate Jerry Brown seized a photo opportunity to run the New River with conservationists from around the state. Along with Brown were two Los Angeles gang members who had never ventured out of the inner city. One was a member of the Crypters, the other a member of the Bloods. You'll remember this was just after the LA riots. After a typical beautiful day on the river, I turned to them and asked what they thought of the river.

One looked at me and said "I did not know there was a place like this!"

He was amazed at the mountain ridges, the most stands of trees, the energy of a free-flowing river.

I will never forget that day. Through the experience of two young men from the opposite extreme of America, I came to appreciate more the rivers of my home. But rivers attract use.

Many of the byproducts of our modern industrial world end up in rivers.

Acid rain, situation, acid mine drainage as one author put it - "continue to serve our future generations from their inheritance". In West Virginia alone over 2400 miles of our streams are degraded by the potent witches brew which is acid mine drainage running streams sterile of aquatic life. And it is quite disheartening that many people in West Virginia and other parts of Appalachia still must drive miles for clean drinking water.

This symposium is about the challenge to people that rivers present. As home to some of America's best whitewater, some of the Earth's best trout streams, and world class warm water fisheries, West Virginia is beginning to recognize that rivers can be the cornerstone of sustainable economic development.

As Tim Palmer has written "a mood in the nation is changing. Rivers are now worth something."

It's fitting that West Virginia is the site for the first Appalachian Rivers and Watershed Symposium. West Virginia really is the "rivers state".

Many of the major river systems in the Central Appalachians have their headquarters in West Virginia and as a result we share a great responsibility for the care we give our rivers.

We know that rivers are unhindered by political boundaries. Many of the problems we face here in West Virginia are common in many Appalachian States. In the next two days, we hope to reevaluate the past and identify solutions to the ongoing challenge of caring for our rivers and waterways.

Through this historic gathering, it is my hope and the hope of the West Virginia Rivers Coalition, that people from everywhere including south-central Los Angeles, continue to be amazed at our rivers.
Why We Shouldn't Mine Acid-Producing Coal

by Richard diPresto

The following is based upon a talk Richard gave at the Appalachian Rivers and Watershed Symposium June 1, 1994, in Morgantown as a representative of WVRC.

In this brief article, I hope to present a broad perspective on coal mining and use. Maybe because I'm a geologist, I take a long and global view of these issues. I want to help provide a basis for formulating coal development policy as it relates to the creation of new acid mine drainage sources, right here at home.

Unfortunately, we still have to mine coal. We failed to make the decision in the past to get away from coal so we're still stuck with it for the foreseeable future.

But my message today is simple: we don't have to mine acid producing coal and therefore we shouldn't.

We don't have to mine acid-producing coal

Why do I say we don't have to mine acid-producing coal? Two reasons: we will never even come close to mining all of our coal. And only a small fraction of our coal produces stream-killing acid when mined.

How can I say we will never come close to mining all of our coal? All our statistics tell us that we have at least twice as much coal worth at present mining rates.

In my judgment, at least four issues, relating to the environmental effects of coal use, will restrict its use long before it could all be mined.

These issues are:
1. Global climate change

Coal is the worst of the fossil fuels in terms of carbon dioxide produced on a unit of useful energy. Coal produces 80 percent more than natural gas, for instance. Coal mining is the third leading source of atmospheric methane which, pound for pound, is 20 times as powerful a greenhouse gas as carbon dioxide.

2. Acid deposition

Even "low" sulfur coal contains copious amounts of sulfur. For example, there is about one ton of sulfur in each railroad car you see going by. Sulfur is relatively easily removed from oil, and natural gas has little or none to start with.

3. Toxic deposition

Most naturally occurring elements are found in coal. The peat swamps, where coal was laid down, served as excellent filters for the water passing through. As a result coal burning emits small but significant amounts of such potent toxins as mercury. Such toxins have been shown to bioaccumulate down through the food web in peat mosses. Coal mining, burning, and waste disposal are sources of excess radioactivity, meaning levels greater than background. For example, researchers have found radon gas in drainage areas over mined areas compared to nearby unmined areas.

4. Drainage and waters where mining occurs

Land disturbances for mining coal do alter mining-connected land disturbances within a day's drive. How can we deny them (and all the $55 they supposedly will spend in our area) access to the Monongahela National Forest? The riding has begun and no permit has been denied.

Environmental Impact Study has been completed. Will the feasibility study proposed by Moore et al. be updated? Will the public have any input into the creation of what amounts to a whole new road system running through the back woods of West Virginia? Nick Ralph, as a major supporter of this Trail System, needs to hear about your concerns. We're him today asking that an EIS be done before any more events take place and the public is denied the right to present their answers?

At a couple of stops I ask about the people who might want to live there in the future. The answers were usually predictable and familiar. "Oh, people don't live here anyway." Or, "only old Joe Blow over on that ridge..." And I couldn't help but think of all the people I know who live across the street from town who are perfectly satisfied to be blessed with small amounts of easily accessible good water and I tried to imagine families on these newly created refuge pole hills drilling 600 feet to the nearest porous layer of rock that might support/contain/trap sufficient amount of groundwater.

In a state whose future may be lost not just with the battles of city life and with people from the east coast who are anxious to settle in more rural areas away from the hustle of city life and public water supplies, it would be wise to give more serious thought to this.

Mine Site in Southern West Virginia - photo by Cindy taken on recent Mine Tour

from the heart of the mountains

(left page) equipment that are needed as well. And future land use? Rangely - Hay - Pastersland - Forest - fish and wildlife habitat - and development was suggested.

River Valley Dam Property.

Condensation of private land, while not the preferred method land acquisition, was mentioned as probably necessary by Lincoln County Commissioner Paul Doncan.

I don't know about you, but I'm a little nervous about thousands of miles of trails with thousands of miles of Off Road Vehicles form untapped different states tearing around them. Who will maintain them? How can we avoid soil erosion, habitat losses, dust and noise pollution? What will be the effects on wildlife, especially Turkey and Bear and all the other species that prefer remote habitat undisturbed by humans? Once the stands under a federal railbanking agreement.

"We've spent $3.5 million fixing the tracks to railroad grade standards following the 1983 flood," said Leslie McClary of Hibbler, who lives next to the abandoned railroad track. That process could prove extremely costly, since the relocated trail must meet railroad grade and right-of-way requirements.

"It think there needs to be some sort of noise protection," she said. "But it's been almost 10 years since the Flood. There are alternatives to a Greenbrier River Trail that have been built long before now."
Dolly Sods and Otter Creek - Further Degradation

Intro by Don Gaspar

There is a plan to build a coal-fired electric power generating plant 4 miles south of Cumberland, MD. This new plant would be "state of the art", reducing environmental impacts maximally. Still the 180 megawatt co-generation facility is predicted to liberate into high air sheds 1,419 tons of sulfur dioxide (SO2) every year. The US Forest Service as Federal Land Manager of the Class I air quality area of Dolly Sods and Otter Creek Wilderness Areas, just over 50 miles away from this Warrior Run Proposed Plant, has opposed any further amount of acid deposition on these sensitive areas. They conclude that emission increases within the region would contribute to existing adverse impacts on water and aquatic, terrestrial and visual resources.

The regional office of the USFS has strongly supported this position, The Monongahela National Forest in March 1994 had prepared a difficult paper justifying their courageous position. The USFS is to be congratulated. The purpose of this paper has for reaching implications for all sulfur emissions. This is the way the system is supposed to work, and it all begins with the silent Monongahela speaking up in defense of its (our) wilderness areas. We must be sure this voice is heard.

The following report has been excerpted from a paper by the staff of the Monongahela National Forest, adapted by Don Gaspar.

The Dolly Sods Wilderness and Otter Creek Wilderness are Class I air quality areas located in Randolph and Tucker Counties, in eastern West Virginia. These wildernesses are administered by the USDA Forest Service, and located within the Monongahela National Forest. Both areas are located in an area of previously unglaciated mountains and valleys, in the eastern highlands of the Allegheny Plateau. Both are heavily forested, predominately by an overstory of second-growth northern hardwoods and Allegheny mixed hardwoods, with red spruce in the higher elevations. These wilderness areas are home to a wide variety of game and non-game wildlife. The Virginia northern flying squirrel and Cheat Mountain salamander are two special species. Aquatic perennial streams in these wildernesses are acidic and unpolluted, with little or no acid neutralizing capacity (ANC), and many have elevated aluminum concentrations. Most of these streams do not support, or only seasonally support, native brook trout. The West Virginia DNRF maintains a stream liming facility on Otter Creek in its headwaters to maintain trout and other fish populations.

The Pennsylvania in Virginia bedrock is the overwhelmingly dominantly bedrock type within these wilder¬nesses. It occupies the upper elevations in the watershed area of both (more than 85 percent of Otter Creek Wilderness, and more than 50% of Dolly Sods). Streams that arise and flow through the Lower Pennsylvania rocks tend to be too acidic to support fish, while streams influenced by Mississippian-age rocks have improved water quality and are more suitable for aquatic life. Some of the Allegheny and Potomac strata contain pyrite, which produces sulfide and acid as it oxidizes. Acidifying materials in the bedrock of these watersheds are a source of natural acidity in the streams in these two wildernesses.

In addition to natural sources of acidity, both wildernesses receive the highest acid load from atmospheric deposition of all Class I wildernesses in the northeastern United States. Precipitation is among the most acidic in the nation. Precipitation averages 55 inches a year in Dolly Sods and Otter Creek, with average annual pH of 4.2, but pH below 4.0 is common during summer months.

Of primary concern is that acidifying substances in atmospheric deposition are contributing to acidification of soils and surface waters, by nutrient and aluminum and nutrient leaching. Sulphate (from sulfur in coal burn in electricity generating plants) is the ion of greatest concern because it is present in greater concentrations in deposition, but nitrate (from coal fired plants and vehicles) in deposition also is important in the acidification processes.

The accumulation of large amounts of nitrate (sulfur and nitrate) from deposition over time in the terrestrial ecosystem means that eventually the land acidity capacity will be reached. Additional sulfate and nitrate ions cannot be retained in the soil, and they leach through the soil, carrying cations to the groundwaters. In some of these soils, calcium losses typically accelerate first, but eventually other cations will be lost as more sulfate and nitrate are added and not retained. Thus, base cations become necessary for fish productivity are being lost. When a large percentage of base cations are lost, acid cations (hydrogen and aluminum) replace the base cations as the pairing (pairing with the sulfate and nitrates in acid rain). Aluminum becomes available for leaching when the soil becomes very acidic, because Al becomes soluble when soil pH drops below 4.5. At the Parsons WV experimental station, USGS researchers Edwards and Helvey documented in 1991 a trend of increasing electrical conductivity in stream water since about 1970, in a control (untrated) watershed within the experimental forest. It was reported that most of this increase was due to leaching acid and calcium exports over time. These nutrient losses in stream flows were originating in the terrestrial soils, therefore represent real losses of soil productivity and nutrients for terrestrial vegetation.

In soils like the very acidic ones in Dolly Sods and Otter Creek, base cations will be in a limited supply. Continued nitrate and sulfate deposition will result in fewer base cations remaining on site due to leaching losses by the same mechanisms described above, especially during spring flows. As more and more aluminum is lost, soil becomes increasingly acidic, because hydroxide soil minerals are not replaced when aluminum is dissolved.

Aluminum analysis in spring baseflow samples shows that dissolved aluminum and monomeric aluminum are very high in these streams. In most of these wilderness streams during the spring, dissolved aluminum concentrations are 200 micrograms per liter or higher. At four sites the aluminum exceeded 300 micrograms. Inorganic monomeric aluminum is considered to be the worst toxic form of aluminum for aquatic biological effects, the threshold of toxicity being 200 micrograms for brook trout and even lower for other organisms. Many of the wilderness streams already exceed this level for the inorganic aluminum.

Our research reported that the average load of acidity in Dolly Sods and Otter Creek already exceed expected, due to acid deposition. West Virginia DNRF has a long-term trend of increasing stream acidity and fish population effects in poorly-buffered mountain streams. Some of these streams show a recent loss of fish due to acidification processes.

The pH and ph of Red Creek and its tributaries area presently below both the chronic and episodic red line values, as are river tributaries of Otter Creek. Without the State's liming facility, the pH and ANC of Otter Creek would be below the red line values. As stated in the Forest Service Eastern Region's screening documented the aquatic ecosystems of the Otter Creek and Dolly Sods Wildernesses are under considerable stress due to a combination of natural and deposition-derived acidity. Additional acidic loadings from S and N are acidifying the aquatic ecosystems, and will jeopardize the existing populations of fish and other aquatic organisms.

Our precipitation data collected nearby in Parsons, WV by the USDA Forest Service, Northeast Experimen¬tal Station, documents that precipita¬tion in this area is among the most acidic in the nation. The average annual pH of Precipitation is 4.2, and commonly falls below pH 4.0 in the summer months. The wildernesses are in a region of high precipitation, which averages 55 inches per year. The combination of high precipita¬tion and high acidity means that these wildernesses are exposed to a very heavy load of acidifying pollutants, primarily sulfur.

Water quality data collected recently in Dolly Sods and Otter Creek demonstrate that aquatic ecosystems are being severely stressed by acid conditions. Water monitoring conducted between 1991 and 1993 demonstrated that all streams located primarily in the Pottsville Group (Pennsylvanian-age bedrock) are presently below both the chronic and episodic red line values, and ANC is extremely low or negative. Even the most pristine watersheds show signs of Dolly Sods, and flows from some of the Mississippian-age Mauch Chunk bedrock, maintain acidic water conditions (pH 4.8 to 5.7) during dormant season, and pH falls below 4.0 during summer runs. When Red Creek leaves Dolly Sods Wilderness, after mixing with poorer quality tributaries, pH is even lower. Smaller tributaries remain highly acid year round. Yellow Creek in the Otter Creek Wilderness is routinely below pH 4.0. The evidence indicates that aquatic resources in Dolly Sods and Otter Creek are presently under considerable stress from acidity, and concentrations of acidifying substances, are among the highest in the nation. The water resources of these wildernesses are showing signs of these stresses. Most water in both wildernesses are extremely low pH and ANC, and springtime aluminum levels are above the toxicity threshold for some aquatic species, including eastern brook trout.

It is the cumulative impact of sulfur and nitrogen from other sources, as well as acidifying substances of Dolly Sods and Otter Creek Wilderness Class I areas is adverse. We cannot at this time...
Dolly Sods Addition??

by Don Gaspar

Red Creek of Dry Fork of Cheat heads up just beyond Dolly Sods Wilderness. It originates at 4,000 feet elevation draining Dobbins Slashes wetland and flows south. The two forks drain each side of Blackbird Knob in a shallow, high basin between Allegheny Front Mountain and the Potomac drainage on the east, and Cabin Mountain and the Canaan Valley and its Blackwater River on the west. Northwest of the divide is the Steny River headwaters.

Red Creek proper drains southwest for about six miles, and its Left Fork for four miles, through a four mile wide gently-rolling highland between the two mountain ranges to their confluence having dropped only to 3,500 feet (about 80 feet per mile). There are about 35 beaver ponds in these forks, so there are flatter stretches. Bogy, ponded headwaters has produced a dark reddish stained color that has given Red Creek its name.

This recent acquisition to the Monongahela National Forest includes the knob itself that can be seen from Red Creek for half a mile above Laurel Cabin and the Wilderness Boundary. The whole watershed of the Left Fork and Alder Run of Red Creek are now entirely included in the National Forest. In these ten miles of Red Creek and tributaries lie 35 beaver ponds.

These so warm the flow that there is no native brook trout in upper Red Creek. In this warm water, the creek chubs and common white-eye suckers dominate, reaching 8" and 11". It is too warm for the Blackwater Dace to do well. These are the only native fish presently inhabiting upper Red Creek. About 1970 a Pearl Dace was collected in one station in the very head of Red Creek, but not in about 40 other stations. Temperature of streams.

Otter Creek and Dolly Sods:

(from previous page) Quantitatively demonstrates the changes in the aquatic community for the proposed plant (Warrior Run) alone. The composition of the aquatic systems in these Class I areas may exceed the current state of scientific knowledge for predicting direct and indirect effects from a single source. However, it is only reasonable to conclude that the proposed emission increase will not serve to benefit the aquatic systems which is presently being adversely impacted.

Soils with high acidity can have significant vegetative stress. First, the leaching nutrients are in short supply, and second, the excessive soil solution aluminum concentrations inhibit root functions, coating the roots and inhibiting nutrient uptake. Excessive aluminum and hydrogen ion disrupt root exchange processes and also disrupt mycorrhiza functions and colonization increases.

Lichen sulfur and nitrogen content since 1967 are believed to be due to air pollution influences, although there is no noticeable effects on the lichen flora or growth rates. These lichen survey results provide an additional piece of evidence that sulfur and nitrogen pollutants are accumulating in the wilderness environment, even though they are not specifically impeding the lichen community at this time.

Vegetation is one of the air quality related values of these two wildernesses. The above information and research/survey results provide evidence of ecosystems under stress from air pollution. We believe that we are experiencing damaging effects on vegetation and soils from existing levels of air pollution.

The Forest Service analysis documents that there is a strong indication that sulfur and nitrogen pollutants in deposition are causing undesirable soil chemistry and nutrient availability changes. These soil impacts are very likely having adverse impacts on vegetation within the wilderness Class I area. Our resource information is not adequate, however, for us to make an impact determination based on terrestrial resource effects at this time. We expect that as our understanding and data base of terrestrial resource conditions and effects improve, we will be able to make a more definitive determination. However, despite this, we feel strongly that additional sulfur and nitrogen pollutant loadings within this mid-Atlantic Appalachian region should not be permitted.

It is our belief also that viability at Dolly Sods and Otter Creek Wildernesses has already been impaired. We believe that these levels of sulfur and nitrogen are high enough to contribute to degradation of viability and reinforce our concern that viability conditions not be further degraded by emissions of sulfur and nitrogen.

We further believe that the only way to improve the air quality situation at Dolly Sods and Otter Creek is to take steps to reduce emissions within the region. Permitting additional source emissions increases within the region at this time will not accomplish.

Monongahela National Forest Hiking Guide Now Out

Edition 6 of Monongahela National Forest Hiking Guide is now available. This edition is bigger and better than ever, with 368 pages, 96 pages of maps, 49 photographs, 177 trails totaling 112 miles, and a new full color cover. West Virginia Highlands Conservancy is the publisher. Authors are Allen deHart and Bruce Sundquist (same as edition 5). Allen has hiked all the trails of the Monongahela N.F. over the past few years. Bruce was the editor for the first four editions. The hiking community and the U.S. Forest Service provided trail reports and photographs. Edition 6, like edition 5, also provides information for ski-touring and backpacking.

The growing through of visitors and the public at large regard the Monongahela National Forest as a 'Special Place'. And indeed it is. The hiking, backpacking, and ski-touring opportunities it provides are among the best in the eastern U.S. The more outstanding areas are becoming known far and wide - Otter Creek Wilderness, Dolly Sods Wilderness, Cranberry Back Country, Spruce Knob, North Fork Mountain, Saylor's Mountain, Laurel Fork Wilderness, Cranberry Back Country, Cranberry Wilderness, among others.

Profits from the sale of these guides support a wide variety of worthy environmental projects in the West Virginia Highlands Conservancy.

To order your copy of Edition 6 of Monongahela National Forest Hiking Guide, send $11.45 (this includes $1.50 shipping and handling) to West Virginia Highlands Conservancy PO Box 306 Charleston, WV 25321

West Virginia residents must add $0.60 sales tax. (total of $12.05)

I have included a check or money order for the amount of__________________________ to WVHC for ____________ copies of the Monongahela National Forest Hiking Guide.

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The Highlands Voice, July 1994 - Page 8

The Rise of the Zebra Mussel

Swan Song for Native Clams?
By Norman Kilpatrick

West Virginia's waters are home to a good number of native mussel species, including the pink mucket mussel, the sandshell mussel, the clubshell mussel, the northern riffleshell and the rubercladed-bloom poorly mussel.

The pink mucket mussel lives in at least the lower Elk River, the upper Kanawha River and in some "pools" of the Ohio River, according to the US Fish and Wildlife Service. The Service is still developing information on the different species found on or near the Ohio River in the Kanawha River islands. We are also losing millions of them to the Zebra mussel.

These fresh water clams all risk at risk due to man-made pollution, ranging from mine drainage to human waste, still discharged into the Ohio River. The Zebra mussel is the greatest threat to our lakes. Thus, it was in 1985, in Lake Michigan. From that tributary of the Mississippi they have been spread to the Illinois River, the Ohio and the Kanawha River, according to the Corps, and now company staff have talked with.

Zebra mussels use their huge numbers, once they reach a large mass in a body of water, to remove so much food, so that they may starve native mussels. They also attach in large colonies to the larger local clams, thus reducing their ability to move and otherwise messing up their life cycle.

Lake Erie has seen large "kite" of native mussel types due to the Zebra. Their numbers in the western part of that huge body of water near our lakes. They have also the cleaning of Lake Erie water near the Town of Monroe and other similar places in due to the activities of the Zebra, which eats plant and animal materials that generally make lake water clarity.

To date, the zebra is not known in the Monongahela River or the major lakes of West Virginia, such as Bluestone, Stonewall, Sutton or Summersville.

Zebra have thin shells, and are eaten by some fish, such as the fresh water drum (sheephead), catfish, and certain types of ducks. The fresh water drum could be stocked and released by the West Virginia Dept. of Natural Resources, but is not at this time.

Arkansas is trying to keep the Zebra out of its Arkansas River and tributary streams. However, no such campaign is being attempted by West Virginia or the Mon River and our lakes.

Natural foes, chemicals that kill the larva, physical removal from the boat hulls, changing water at bait shops and safe disposal of the imported water, are all ways to combat the Zebra.

A Fish & Wildlife official told me that the only sure way to save the Ohio River mussels form death at the hands of the Zebra is to remove them from the rivers and raise some of them in Man-made holding areas. Surely, this tiny (less than 2 inches long), striped, import needs to have a program established to combat its invasion.

It seems that the Highlands Conservancy is the most likely candidate to push the State and the private commercial and pleasure boating interests into and awareness of this threat to our waters. Better to prepare than to try to play "catch-up," as has been the case in Lake Erie, to the great detriment of the native mussel of the body of water.

Membership Benefits

* 1 year subscription to the Highlands Voice

* Special meetings with workshops and speakers

* Representation through WVHC efforts to monitor legislative and agency activity

The WVHC, at age 27, is the oldest environmental group in West Virginia. The Conservancy has been influential in protecting and preserving WV's natural heritage. Your support will help WVHC to continue its efforts.

Dolly Sods Trees

Promises and lies

(From page one) State Forests managed for ALL West Virginians. About that time the Governor asked one of his superintendents to get a committee together to deal with this problem. The session comes and goes - no committee, here comes summer, still no committee. All these promises, why did I believe them in the first place??!

VUG,INIA'S forests are now a part of the State Forests. The WVHC, a 27 year old group, continues its efforts.

Craig Sims
December 93

WVHC Summer Board Meeting will be held at Kumbrabow State Forest on July 16 at 10 am. Everyone Welcome. A tour of the Clay Run Sale Site will be offered after the meeting.

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Dolly Sods Trees

Spruce

Jutting from the rock
With backs to icy wind.

Stark

Evergreen soldiers
Surviving winter's cruelty.

Strong

Clinging to life
For unknown reasons.

Dwarf

Lovers of high-country
Through ice bound seasons.

One side

A sacrifice made
To bitter winter cold.

Flattened

Strange you endure.
Still small, you are old.

Nourished

By the briefest of summers,
It has been enough.

For you are here.
Growing footloosely lop-sided,
Standing stunted and proud
Among the Blueberries.

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