



# The Highlands Voice

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## Conservancy Prevails in Supreme Court

by Paul Nyden  
from the Charleston Gazette

The Division of Environmental Protection may soon spend at least \$1 million more a year to treat streams damaged by acid mine drainage. Acid and iron pollution turns streams orange and kills aquatic life.

The state Supreme Court ruled unanimously this week that the DEP has a mandatory, non-discretionary duty to spend at least 25% of the money in the Special Reclamation Fund to treat acid mine drainage.

"This is a complete victory for our clients. This opinion could not have been any stronger," said lawyer Phil Scott. Scott and Pat McGinley, a West Virginia University law professor, represented the West Virginia Highlands Conservancy in its case against the state agency.

DEP Director David Callaghan said he doubts the opinion will change what his department is already doing.

"We have always taken the position we had a moral obligation, as caretaker of the state's resources, to treat acid water at bond forfeiture sites to the maximum extent possible with the financial resources we had available," Callaghan said.

When coal companies abandon mines without reclaiming them, the state's Special Reclamation Fund cleans up those mines. Forfeited reclamation bonds, environmental fines and a special industry tax all go into the fund.

Since it was created a dozen years ago, the fund has always been short of cash. Because of that, the state is unable to reclaim all abandoned mines.

Currently, the DEP spends about \$1 million a year on acid mine drainage. Most of that amount goes to treat water at two large abandoned mining complexes in Preston and Upshur counties, which will require treatment for decades. The DEP also treats water at another 15 mines.

Scott said the opinion will force DEP to spend at least \$2 million a year to treat acid mine drainage.

The Special Reclamation Fund collects between \$8 and \$9 million. Callaghan said DEP currently spends about \$1 million, between 12 and 13 percent of the total to treat polluted water.

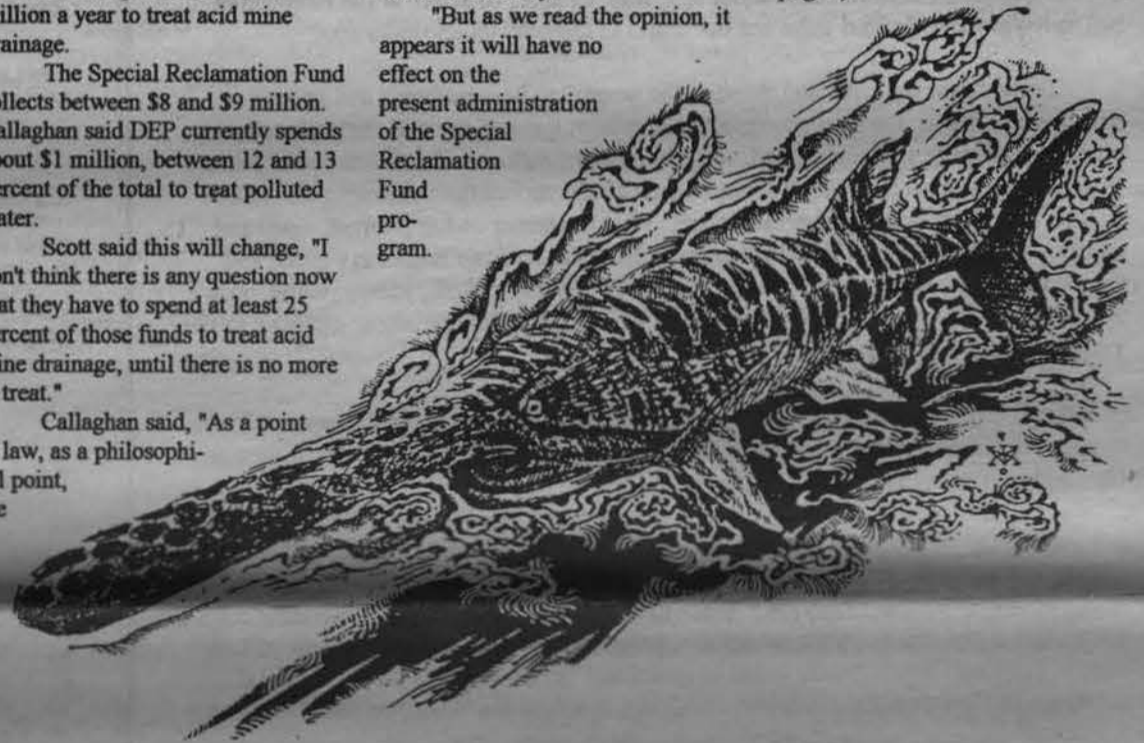
Scott said this will change, "I don't think there is any question now that they have to spend at least 25 percent of those funds to treat acid mine drainage, until there is no more to treat."

Callaghan said, "As a point of law, as a philosophical point, the

court characterized these duties as non-discretionary.

"But as we read the opinion, it appears it will have no effect on the present administration of the Special Reclamation Fund program.

It still allows us discretion (see page 5)



## Ecosystem management - Fire and Smoke

Paddlefish - by Vince Packard

Coming to a National Forest near you - by Bill Ragette'

I headed out of the highlands yesterday all the way over to the hills of southern Ohio. Staff of the Wayne National Forest had offered a tour of the new management project that was supposedly guided by ecosystem management. No timber has been 'offered' on the Wayne for almost two years since yours truly and three others successfully appealed four timber sales (err - management projects) and the sales were withdrawn. Tour members consisted of the Bluegrass OA team leader (Ralph Miller), the Forest Biologist (Rosemary Boyle), two folks from Ohio DNR (Gerry and Mark), and two gentlemen from industry (Oil and Gas and Sawmill/Pallet Maker), both named

Jack.

The official purpose of the project is Oak/Hickory Regeneration and the acceleration of the succession of an even aged stand to an all aged forest. Many foresters and others are concerned about the gradual loss of Oak Hickory Forest in the East and the open Oak woods that the regionally scarce *Ruellia carolinensis* and *Carolina Thisle* require.

### The Walk

We first visited an opening that the FS has been maintaining for 40+ years by using controlled burns. The opening lay on a dry south-facing ridge. A few Oaks and Hickories were growing in the field, two pines had died due to the fire, several small persimmon trees were resprouting with last year's stem destroyed by the fire. The field was dominated big the Big Bluestem

and other native grasses. According to the Biologist all the grasses were native. We then walked along the ridge through a white pine planting to an open oak woods. The trees were thick and maybe a foot in diameter on the average, yet the canopy was open, where some of the fire damaged older trees had fallen over. Nothing grew in the understory over 6 feet high. This area had been burned thoroughly for several years by some marijuana growers (now in jail). The fires had evidently been fairly hot, but a good number of oak and hickory seedlings were growing up. No rare plants were encountered.

Next we visited the actual site of the proposed project. On the south facing part of the ridge the Oaks and Hickories were much more crowded and larger in size with a more closed canopy. Saplings of all heights filled the canopy, but none of them were Oaks or Hickories. Sugar and Red Maples were predominant. Rosemary wondered how they ever grew there as there were none of these species in the canopy. Ralph expressed his concern that Oaks and Hickories were going to be lost from the site. He had a map of tree cover in Ohio just prior to settlement, showing all of southeast Ohio in Oak/Hickory forests. He said that with

our focus on fire suppression, Oaks could no longer regenerate. To compound this problem most all private timber owners were having their Oaks cut because they were worth so much, and were leaving red maple and beech and other non-desirable trees to take over and dominant the private lands. Of course acorns and nuts are very important to wildlife (especially turkey and deer) and Oaks are valuable to industry, but Ralph claimed his main concern was to maintain this endangered habit - open oak forests.

The Environmental Assessment for this Project, pulls together some research of oak decline and the role of fire in maintaining these woods. Evidently the Native Americans burned the woods all over the east on a regular basis to maintain oaks, increase game and provide a more open woods for travel and visibility. Without this constant burning the percentage of Oaks and Hickories would be considerably less today. My mind drifted back through the years, when the natives with much study and attention and celebration would burn the woods in the proper seasons and intervals to assure their survival.

### The Talk

While in the woods, Ralph was

explaining to us the concepts of ecosystem management, how the FS had been directed to understand and incorporate ecological processes in their management of the forests. Gerry added that humans were part of this ecosystem, and the various benefits to people, (especially the economic benefits to the local folks) could not be left out of the picture. I thought this was so absurd, the Forest Service has been considering almost nothing else for decades, and now when the FS was beginning to talk about other aspects of the forest, everyone gets (see page 8)

### Coming Soon

Fall Review -Canaan Valley

October 14-16, 1994

Watch for more information in your mailbox and in the September issue of the VOICE:  
MAKE PLANS TO BE THERE!!

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*---from the heart of the mountains---*

by Cindy Rank

of trees and towns

One of the perks of being president of the Conservancy is that you get to choose where to hold winter and summer Board meetings. Basically that means an opportunity to have the meetings at places that are special to or somewhat convenient for the president.

For me these past six years, that's been a real treat ... going to Woodlands in 1989, introducing a few people to Holly River State Park, driving that mere hour to meetings at the WV Rivers Coalition office in Buckhannon. But I think this past weekend's meeting in Kumbrabow has to top the list of my personal favorites.

Since weather is unpredictable and thunder storms highly likely during these dog days of summer, I headed out at about 6:30 a.m. in order to arrive at the picnic area before 8 o'clock so I could stake out our claim to the only tables under roof.

Truly, "over the river and through the woods" to Kumbrabow i did go .... And what a drive it was: the mist rising in the first faint light of day and the early morning bird song greeting a swooping owl, some hefty sized turkey and a dozen young bucks who bounded across the road or froze in their tracks as i came near, racks all velvet against the dew covered backdrop of trees. And the forest - what a forest! - still and quiet in the morning mist, hemlock and oak majestic in those rich heavy green and deep bark colors of the wet woods, mushrooms everywhere - red, yellow, white, brown, and the stream lined with delicate pink and white rhododendron bloom attentive to the gurgling of the water moving along at their feet.

All in all it was a great day, from my early morning rising, to sipping a thermos of hot coffee in the damp coolness of the forest, to a good meeting, full of discussion on a wide variety of issues.

I'll always be grateful for days like that, partly because i'm proud to be associated with WVHC and the important work it's been doing these past twenty seven years, and partly because i consider myself blessed to be able to spend quiet reflective time in places like Kumbrabow. It's a luxury that many of us can't or don't often take advantage of in today's hustle-bustle world of speed and busy-ness. But travel to WVHC meetings in the forest and elsewhere continues to afford me that opportunity.

Our perspective on life is so much influenced by the places we live and the company we keep, that, for me at least, driving through backroads like those between home and Kumbrabow provides a healthy balance to spending hours on the Interstates and at meetings in Charleston.

Of the 28 miles of road from home to the picnic area in Kumbrabow, some 5 miles is paved, the rest is gravel and/or dirt (hence the driving time of one and a half hours) and all of it is through wooded areas with only a bit of pastureland and a handful of small reclaimed surface mines. The road winds from Canaan through Hell Run to Pleasant Dale and on to Selbyville, Newlon and Turkey Bone before entering state owned forest land.

Driving through all those trees and small communities along the way immersed me in thought not only about the trees, but also about the people who live among them.

First, the trees.

After crossing Hell Run i passed the grownover haulroad that was built for the Holly Grove mine site back in the late seventies and i breathed a sigh of relief (as i usually do at that point in the road) for yet another year that our world has been spared the ravages of acid mine drainage from development of the coal reserves in the Little Kanawha Headwaters area.

But my sense of satisfaction was tempered by the unavoidable questions raised by nearby timber operations that speak of other potential threats to the area. Is the "timber bill", the Logging Sediment Control Act of 1992, sufficient to protect the overall health of this and other wooded headwaters areas in the state? -- Especially in light of the onslaught that will be spurred on by ventures like the Apple Grove Pulp and Paper mill on the Ohio River in Mason county and the TJM (Trus Joist MacMillan) engineered wood plant in Upshur county and the OSB (Oriented Strand Board) plant planned for Heaters in Braxton County, etc?

Granted, the current impact is not extensive enough yet to be (see page 7)

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and  
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# WV Mountain Stream Monitors, Rejoining the Struggle!

by Jason Huber

## OUR FIRST MEETING IN TWO YEARS

Howdy folks! As you may or may not know, West Virginia Mountain Stream Monitors (MSM) has been reorganizing. MSM is a community based, grassroots group, which is dedicated to preserving the quality of West Virginia's surface and groundwater. After a long, two year sabbatical from the struggle, MSM decided to get back on its feet. Our first meeting on June 25 was both encouraging and educational. Topics of discussion at this meeting ranged from organizational structure, to the chemistry of acid mine drainage (AMD), to Celtic water deities. As the meeting began to wind down, we recognized that a consensus had developed regarding two issues.

Primarily, everyone agreed that the amount of pollution in West Virginia's surface and groundwater had reached crisis proportions. For examples, a representative from the Mid-Ohio Valley expressed concern over the seemingly impossible battle to clean up the once majestic Ohio River; residents from Morgantown, who had researched the history of Deckers Creek, noted the overwhelming amount of raw sewage and other pollutants in this historically unique creek; white-water rafting guides from the Bruceton Mills\Albright area voiced their concerns over acid mine drainage (AMD) in Muddy Creek and Cheat River.

Secondly we agreed that merely identifying these issues will do nothing to restore the quality of our surface and ground water. We knew we had to organize and take action. We brainstormed about tactics, strategies and possible projects MSM could become involved with. Several ideas were mentioned including: providing communities and schools with workshops designed to educate and train people about stream monitoring, starting a news letter, networking with other organizations and possibly taking legal action. MSM was definitely encouraged by the amount of interest which was expressed. We knew our reorganization effort would be a success!

## OUR SECOND MEETING

Our second meeting was on July 14 in Albright, West Virginia. The turnout was wonderful. There

was a strong showing by citizens from the Albright area, along with representatives from Down Stream Alliance (DSA), MSM, and the West Virginia Rivers Coalition. The meeting began with Richard diPreto demonstrating pH testing methods on Muddy Creek. We then returned to the Cheat River Canyon Campground for the rest of the meeting. The discussion which followed produced two exceptional ideas.

First, several people expressed interest in forming a broad based coalition of groups and individuals which would deal primarily with issues affecting the Cheat River water shed. This coalition would be named the Friends of the Cheat (Friends).

The group tentatively agreed that the Friends' mission would be to "preserve and restore the natural quality of the Cheat river water shed." This mission statement was tentative because several groups and individuals who wanted to participate in forming such a group were unable to attend this meeting. Therefore, in order to be as democratic as possible, everyone agreed that this statement could be revised, if needed, at our next meeting.

Secondly, seven individuals and five groups decided to intervene in an appeal brought by T&T Fuels, Inc. regarding fines issued over acid mine drainage (AMD). In order to have a better understanding of this intervention, some history about T&T is necessary.

## WHO IS T&T FUELS, INC. ANYWAY?

T&T owns at least two inactive deep mines around Albright. Recently one of these mines "blew out" and began spewing AMD into Muddy Creek, which joins the Cheat. A segment of Randy Robinson's video of this blow out was shown on public TV. The state responded by fining T&T for the drainage. In addition the state placed T&T on a permit block list. This meant T&T could not receive any new mining permits until the drainage was treated. T&T began treating the water so that it would meet effluent standards. The state removed T&T from the permit block. However, the fines remained. T&T appealed the fines to the West Virginia Surface Mine Board. MSM has received a copy of the appeal. T&T basically

argues that a lot of the drainage coming from their mine is actually drainage from an adjacent, inactive mine not owned by T&T. Therefore, T&T should only have to treat a relative proportion of the drainage. (MSM feels this argument is unfounded in both fact and law). As a result of this appeal the Board scheduled a visit to the mine site July 19 and a hearing on July 21. MSM contacted the Board to request permission to attend the site visit. The Board said that in order for people to attend they would either have to get permission from T&T's lawyer or intervene in the appeal. An intervention is a legal tactic by which third parties who are effected by the appeal can become a party to the hearing.

## THE INTERVENTION!

MSM presented the idea of intervening to the meeting. What resulted may be a precedent-setting event for community groups in our region. Seven individuals and five groups, MSM, DSA, American White Water Affiliation, and Ohio Valley Environmental Coalition decided to intervene in the appeal.

Several issues made the concept of intervention attractive. First, intervening parties do not have to have a lawyer (luckily, because we did not have one).

Second, an intervention would allow citizens to attend the site visit, present evidence at the hearing, and have an opportunity to comment on any settlement made between the state and T&T. Third, an organized intervention would show T&T that the community was no longer going to tolerate their destructive mining and post-mining practices.

The day after this meeting, MSM filed the motion to intervene. That Monday MSM was informed that the hearing and site visit were continued at the request the state. This provided MSM and the Rivers Coalition with the opportunity our request that the hearing be held in the local area as opposed to Nitro. The hearing is now scheduled for Sept. 7. Although we are not sure of the location, rumor has it that the hearing will be held in the Albright area. (Ah yes, a small, very sweet victory.) MSM hopes to have more information about the appeal at the next Friends\MSM meeting on July 28, 6:00 at the Cheat Canyon Campground in Albright (see page 6)

# Kumbrabow, still waiting

Readers of last issue are probably sitting on the edge of their seats after having quickly scanned this issue for the results of the hearing where we were going to nail the lying bureaucrats to the forest floor. As you may remember, Gordon Robertson, DNR's deputy chief for wildlife resources testified that they had done a survey of the Clay Run Timber Sale Site, but all evidence pointed to the fact that they have never done any such survey and have only the slightest idea what lives up there.

Well, I've sad news to relate, but I'll tell it all truly. The counsel for the plaintiffs had been against reopening the trial all along. We had to have a special meeting to convince him to go after the bureaucrats. Now, I think he agreed in order to humor us. The night before the hearing he called me up and reported that Coastal Lumber (the would be purchaser of the Kumbrabow Timber) had filed a motion to become a party to the suit, in order to protect their interests (even though the Forestry Chief had signed the contract with Coastal while the court ordered injunction was in effect). Our lawyer felt that if Coastal would enter the fray with their paid experts our chances of winning the case would be lowered. The plan, that night, was to argue against their motion to enter the suit and to proceed with our case that Robertson had perjured himself.

The next morning as I was going out the door to attend the hearing, the phone rang. The plaintiff's lawyer called and said he had talked the plaintiffs into dropping the motion to reopen the case and that there was no reason to attend the hearing. He said that was going to show up anyway and ask that our motion be withdrawn. I was pretty upset, because I don't like to see state employees lying under oath and getting away with it. But I'm not one of the official plaintiffs...

Later that day, Norm Steenstra called me and said that he had attended the hearing, not having received my message about the hearing being canceled. He told me that he was the only one from our side there, no plaintiffs and no lawyer, only a whole slew of folks from the Division of Forestry and Coastal Lumber. He felt that we looked real bad, asking for the hearing and then not showing up. Coastal made its motion to be included in the suit, and because no one was there to oppose the motion, the Judge said he was inclined to accept it. Everyone said that were looking for a speedy resolution to the trial and that was that. And we are still waiting for the decision. Stay tuned. - bill r



## CONSERVANCY NEEDS VOLUNTEERS FOR ENDOWMENT FUND

The Conservancy needs volunteers with financial planning expertise to help manage the Endowment Fund. The Fund was established in December, 1985, and quickly accumulated over \$16,000 in capital. Since then, no capital has been added but interest has accumulated and the balance in the fund stands at over \$22,000. Recently the Board of Directors agreed to try to manage the fund more actively to produce income for the purposes of the Conservancy as envisioned when the Fund was established. If you have ideas, energy, expertise, or or course, money, to offer to this worthy effort, please contact Endowment Fund Chair Richard diPreto at 264 High St. Morgantown, WV 26505; 304/296-8963 voice; 296-8623 fax.

## DAVIS AND ELKINS WILDERNESS COOP MAKES DONATION TO CONSERVANCY

The Wilderness Coop of Davis and Elkins College completed a 20-mile bike ride on Earth Day to benefit the West Virginia Highlands Conservancy. They donated \$125 to be used on any local issue the Conservancy sees fit. Thanks very much to the Wilderness Co-op!

## CAN YOU HELPIN MORGANTOWN OFFICE?

Here is a chance to give some of your time to promote the values and issues of the Conservancy. Our new administrative assistant, Richard diPreto, is looking for Conservancy volunteers. He wants help with envelope stuffing, data entry, research, phone calling, newspaper clipping, etc., in the Morgantown office of the Conservancy located at 264 High Street. Any amount of time from one hour to several hours per month will help a lot. Please call him at 296-8963

## CONSERVANCY RECEIVES COMPUTER AND PRINTER

Apple Computer, Inc., and the Environmental Support Center have donated a new Apple LC-3 computer and Laser Writer Select 300 printer to the Conservancy. The equipment is valued at \$2500. The Conservancy received the award as a result of an application made last winter by Richard diPreto in conjunction with the Citizens Coal Council. For at least the present, the computer will be set up and used in the Morgantown office of the Conservancy at 264 High Street. Stop by to see it and say hello!

# The Governor's New Promise

In response to last month's article on the Governor's failure to follow through on his promise to form a committee to study ways to increase public involvement in the management of our state forests, the Governor said he was still serious about the project and that they would

proceed shortly. The Governor had assigned the task to one of his Supersecretaries, John Ranson. But because this was almost at the same time as he dissolved that position, the committee got lost in the shuffle. The governor now wants the committee to take the broadest

possible view of timber management in our state, on both private and public lands. I just hope its not an attempt to divert attention from the immediate problem of no public input on public lands. If nothing happens by next month we can call the Governor a liar once again. - bill r

# Femmes Fatales of Twilight

Here is another chapter from George Constantz's extraordinary book - **Hollows, Peepers and Highlanders**. Fireflies have always been a grand show for me. Certain viewings will always stay in my memory - the river of fireflies in the Great Smokies and the waves of light in my garden - ask me about them sometime. But George's tale adds another whole dimension of eons and events way beyond our own little lifetimes. Order this book from Pine Run Ecological Laboratory, Rt 1 Box 469, High View, WV, only \$14.- bill r

By George Constantz

Summer in Appalachia has its share of magical moments. For me such a time comes when I squeeze out through my second story window, settle on the porch roof, and survey the firefly meadow.

Here come real stars to fill the upper skies,  
And here on earth come emulating flies  
That, though they never equal stars in size  
(And they were never really stars at heart),  
Achieve at times a very star-like start.  
Only, of course, they can't sustain the part.  
-Robert Frost, Fireflies in the Garden

In his poem "Fireflies in the Garden," Robert Frost is so taken by the spectacle that he flirts with equating fireflies and stars, but in a final line of reflection, he demurs. Poetic license is fair, but he was wise to change his mind, for beneath the twinkling pageant is a society of liars and cannibals.

Fireflies are a family of beetles that emit light from specialized tissue in the ends of their abdomens. Male fireflies typically crisscross an area, flashing rhythmically. Females remain stationary on the ground or in a bush and responds to males with their own flashes. When a male receives an answer, he hovers and orients his lantern toward the female. Eventually, he lands near her, and they mate.

Each firefly species has its own unique male signal and female response. Between species the signals and responses vary in the color, number, duration, modulation, rate, and intensity of the light emissions, the rate of repetition of the pattern, and the speed, altitude, time, season, habitat, and maneuvers of flight. All this variety enables us human observers, with practice, to identify many species by their flashes alone.

It seems counterintuitive, then, that only the timing of the flash has been shown to play a role in a firefly's ability to identify a member of its species. For males, the parameters of timing involved in this communication include frequency, duration, and pause between flashes. The most critical characteristic of the female's response is her delay in answering the male's flash. The time lag preceding a female's response varies among species from three to nine seconds.

Before we allow this scene of firefly behavior to get complex, let's explore a basic, no-frills example: *Photinus pyralis*, the most widespread species of firefly in North America. Males of this species begin flashing at dusk, typically about three feet above the ground. Each flash lasts about one-half second, and the male repeats it about every seven seconds. Emitted during the upswing following a short swoop, the flash looks like an upward arc of light. On the ground, receptive females answer with a one-half-second flash three seconds after

the male's. His visual display is not meant to attract a female of his own species, rather to persuade a receptive female to reveal her location.

Add the research findings of Dr. James I. Lloyd of the University of Florida and the plot thickens. In a firefly meadow, males greatly outnumber females. Because competition for mates is keen among males, a male spends much of his time searching for females. When answered, he must reach and mate the female before other males converge. Given this much, we could logically conclude that natural selection should favor males that locate, reach, and copulate with receptive females as soon as possible. The catch is that the male's bright advertisement and scramble for mates make him vulnerable to exploitation - by other fireflies.

Of the three major genera of fireflies in North America, two (*Photuris* and *Photinus*) carry on a complex, intriguing relationship. (A warning: Keep these two genera straight.) Let us first focus on the behavior of fireflies in the genus *Photuris*.

Prior to mating, a virgin *Photuris* versicolor female answers almost exclusively the triple-pulsed flash of males of the same species. About three days after mating, she takes a station on or near the ground, stands erect with her jaws open and begins to mimic the flash response characteristic of females of other species. She even imitates the latency credibly. No longer interested in mating, she is now a predator. When her successful flash response attracts a male of another species, she pounces on and devours him. In such femmes fatales, mating seems to induce the switch from receptive virgin to voracious predator. Apparently, something transferred with the sperm initiates the transformation.

This type of predation, called aggressive mimicry, has been reported for ten species of *Photuris* fireflies. At least three more species are suspect. In fact, further research will probably reveal that most species of the genus *Photuris* can switch on predatory behavior.

The females of some *Photuris* species prey on males of more than one species. So far, the extreme example of this type of versatility is *Photuris versicolor*, whose females prey on males of at least 11 other firefly species. These virtuosos readily adjust both the form and timing of their flashes in response to different male flash patterns.

Females of various *Photuris* species have been caught ambushing male fireflies in Appalachian locations from Massachusetts to Georgia. As this story continues to unfold, aggressive mimicry will almost surely be found throughout the entire Appalachian chain.

Why do *Photuris* females prey on other fireflies? Fireflies spend the first few years of life as larvae in the soil, then live as adults for only one to four weeks. Food acquired as larvae permits females to produce some eggs, but protein gained via predation augments their fecundity. Thus, through aggressive mimicry, a female firefly increases the number, and possibly quality, of the eggs she produces.

The risk of falling prey to aggressive mimics has led to the evolution of counter adaptations in males. *Photinus* males (that's the other genus) do not just fly directly to a responding female; instead, they fly close, hover, back away, re-approach, and flash repeatedly. The male's ambivalence reflects a



Drawing by Peggy Kochanoff from *Hollows, Peepers, and Highlanders*

deep conflict. Should he pursue a seemingly receptive female and risk the predator's jaws, or dally and lose the copulation to another male? The male's compromise: if he lands, he does so several feet from the female and then approaches cautiously on foot.

For the male, the risk of being eaten is significant. In *Photinus collustrans*, for example, males are answered by up to five times as many predacious *Photuris* females as by females of their own species. In one study, 16 percent of the males lured by females were duped and eaten.

Aggressive mimicry by *Photuris* females may be the reason that males of most *Photinus* species fly at twilight rather than at dark. If a *Photinus* male can spy the silhouette of a larger *Photuris* female, with a shape and stance different from that of his own females, he can stop short of the poised jaws. *Photuris* females of several species have evolved another predatory tactic - serial predation. Guided by their prey's luminescence, *Photuris* females attack flying male fireflies at night. These

"sidewinder hawkers" sometimes use the aerial strategy together with aggressive signal mimicry.

And it gets even more bizarre. The males of one *Photinus* species display an alternate mating strategy that exploits aggressive mimicry. The normal flash pattern of *Photinus maccdermotti* males is two short flashes two seconds apart. While he is on the ground courting a female, a male sometimes injects a flash into the last one-quarter of the interval between the flashes of an approaching rival male. The timing of these injections matches the flashes that the predacious females of two *Photuris* species occasionally and apparently by mistake emit. Thus, the courting *Photinus* male appears to be mimicking the accidental injection flash of predatory *Photuris* females. Injected flashes slow the approach of converging males, thereby extending the first male's sexual monopoly of the female. This neat trick is an example of the mimicry of a mimicry.

Even the males of some *Photuris* species exhibit mimicry, although not for predatory

# Gauley River Recreation Area - Draft EIS

## Now Open for Comments

By Mary Mary

The Gauley River of WV runs through a canyon-like gorge which is as tall as 500 feet in places. Vegetation is diverse, and the roughness of the gorge has sheltered some stands of virgin timber. There is one federally threatened plant species located there, Virginia spirea, and 5 category two species; Barbara's Buttons, Allegheny Woodrat, Cerulean Warbler, Eastern Hellbender and the Fine Scale Saddled Darter. State listed species include a plant and 5 animals.

The gorge, however, is far from being untouched by man. Gas wells and abandoned coal mines abound. Last year, when I was camping at the Gauley, clearcutting was happening on one side of the river and strip mining was occurring on the other. The Gauley is famous for its white water rapids, and many rafters visit. It is a strong mixture of man and nature and we seem to be trashing the place overall.

The National Park service is in the process of forming a management plan for this newly designated National Recreation Area. All of their 4 proposed alternatives include providing public access to the upper, middle, and lower Gauley for white water rafters. The plan is to buy already developed access, with the existing number of river access not being exceeded.

Most of the land in the recreation area is privately owned, and a lot of it is held by coal, gas and timber companies. The only way to ensure protection of the area is to buy the land. The only alternative which proposes no development (Status Quo Alternative) does not include buying any land to protect the area.

Alternative B, the NPS choice, includes a visitor center, lunch site, and expanded camping area at the dam site on upper Gauley. The middle Gauley will have at least 2 access points, 2 lunch stops, and a camp site for boaters. There will be a boat access for the

lower Gauley. Also planned are a picnic area, hiking and "interpretive" trails, a few other administrative buildings and lots of parking.

The NPS has zoned several areas for their outstanding natural features. This includes the river corridor sections of the Gauley, where there is no railroad, old growth forest, and the Meadow River which runs into the Gauley and has no flood control. It is these areas that contain concentration of rare & threatened species. The NPS proposes minimal development in these areas: trails, camp sites, interpretive waysides and exhibits, and small parking lots.

With the popularity of the Gauley with rafters, it is inevitable that many people will visit the park. How much development will protect the river by limiting disturbance and how much will improving access be a cause of destruction of a special environment through increased visitor-use? A big part of the rafting experience is the fact that you are floating

downstream into a wilderness. Lunch stops, trash cans, porta-potties, camping areas, interpretive trails and improved access is only going to spoil this. Why civilize the place? The outstanding natural feature subzone is a place where no development should be encouraged, and the same places should be on the top of the list for land acquisition.

The boundaries of the recreation area only encompass the view-shed from the river. It would be better if the area was bigger, encompassing some of the hills in the river bends. This would provide more of a barrier zone in a place that has a lot of mining and timbering activity.

Comments on the recreation and management plan are being accepted until November 7, 1994. Write to

Superintendent Joe L. Kennedy, Gauley River Recreation Area, PO Box 246, Glen Jean, WV 25846, 304 465 0508

## WVEC Meeting: Woodlands, Phase 1

Nestled in peaceful surroundings at Woodlands Institute near Spruce Knob, the West Virginia Environmental Council met last month to form a cohesive vision for the state of West Virginia. This kind of meeting was a first for us. We avoided using words such as "legislative session" and "worst-case scenario." We changed our focus from issues to an overall picture of what kind of world we want.

Guided by poet Devon McNamara and West Virginia's Poet Laureate, Irene McKinney, and inspired by Ruth Blackwell Rogers' Hopi Creation Story, we found ourselves looking at the way things could be in a totally different way. Through small group discussions, field trips, relaxing in the woods and talking to old and new friends, we talked about our dreams. Lots of teens and pre-teens talked about what kind of world they wanted, and what kind of world they feared they were going to get. The weekend tapestry, rich with threads of ideas, then was put on the loom.

Sunday morning, we met to weave our collective vision. It seemed that everything discussed revolved around education. We discussed life-centered education and appreciation of the natural world. The first gathering of the state-wide environmental community at Ripley in 1989 listed education as a concern. We poured our efforts into educating lawmakers. Unfortunately, that's not nearly enough, nor does it do much to change values over the long haul.

The WVEC theme for the upcoming year, beginning with our annual conference in September 1994, continuing through E-Day, the legislative session, and Earth Day, is Changing societal values through EDUCATION. We'll be meeting for Woodlands, Phase 2, in September for our annual conference. We hope you'll be there and help us put our dreams into action.

Kim Baker  
WVEC President

### "Changing Societal Values Through Environmental Education"

#### 6th Annual West Virginia Environmental Council Convention

September 9 - 11, 1994

Woodlands Institute near Spruce Knob

Join educators, environmentalists and policy-makers as we examine ways to integrate green values into the education system.

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purposes Some Photuris males duplicate the male flash of species that may be prey of their own Photuris females. They restrict the decoy signals to the habitats, seasons, and daily periods of the prey. If a hunting Photuris female answers and approaches the imitating Photuris male, he quickly grabs and inseminates her. Thus, Photuris males exploit their own female's mimicry to increase the odds of gaining a copulation. Since mating causes Photuris females to change form males seeking to prey-seeking, males pursuing this strategy run a serious risk of being cannibalized.

Variation exists here too. Males of Photuris species can mimic the male flash patterns of two or more Photinus species. Some Photuris males can shift back and forth between their own species' flash pattern and those of other simultaneously active species. This also seems to be a strategy for increasing the pool of potential mates.

Understanding the last layer of complexity requires Herculean concentration because it combines the ideas of injection flashes and

males mimicking males. When a predatory Photuris versicolor female mimics the flash of Photinus macdermotti females, the predator may produce extra flashes that mimic the injected flashes used by males that are competing for females. Such injections are made during the last 0.6 second of the rival's flash pattern. By mimicking competition flashes, Photuris females draw more Photinus males to the general area and thereby improve their chances of a successful hunt. This is an example of a female mimicking a female

## Supreme Court

(from page one) in managing the financial resources of the fund," Callaghan said.

"We certainly do not take any issue with any of the contents of the court opinion," he added. "If there are any areas where we are not in full compliance, we will amend our program."

mimicking a male that is mimicking a predatory female.

How did such a complex, interdependent system of behavioral mimicry evolve? Apparently, a step-by-step evolutionary arms race is responsible. Initially Photinus may have produced only simple flashes of fixed duration, whereas Photuris may have shown variability. The latter presumably demanded a higher order of neural processing by the female, which in turn may have allowed the evolution of changeable female responses, the prerequisite

for predation. Opportunistically, the males of some prey species may have incorporated deceit in their mating signals to maximize their own mating success.

We knew all along that fireflies were not very much like stars. But when I contemplate my firefly meadow now, my mind vacillates between the romance evolved by twinkling lights and the logical fatalism provoked by ambush. The bard was right in withdrawing the parity, but for reasons far more intricate than he may have suspected.

Callaghan said West Virginia is "the only state that spends any money to treat acid at bond forfeiture sites."

Cindy Rank, President of the West Virginia Highlands Conservancy, criticized Callaghan for telling legislators last year that DEP is not required to treat acid water problems.

"This decision means he can't lie to the

Legislature or auditors anymore. He has a mandatory duty to treat water. We also continue to believe that the state remains liable for water treatment at all forfeited sites," she said. ♦



# Garbage- What To Do With It?

by Frank Young

Cities, county solid waste authorities and private haulers of garbage are scrambling to find facilities and equipment to dispose of garbage.

Why the scramble now? Because about thirty landfills currently in use are to close by September 30. These landfills are now environmentally obsolete.

With fewer and more distant landfills available, garbage collectors and haulers must make arrangements to meet the crunch. The situation will likely impact recycling programs as well as garbage disposal.

Equipment to haul larger trash payloads more efficiently and able to do so within legal weight limits is being aggressively sought by collectors and haulers and marketed by sellers. Some traditional "route" collection trucks haul only a few tons of trash to local landfills a few miles away.

But with distances to legal landfills becoming forty or more miles from

pickup areas, larger trucks must be used to maintain efficiency of transport. Even then, tipping fees (costs for dumping) are higher at the remaining facilities. This is partially because of the market related to a diminishing number of landfills and also because of the costs associated with composite liners and other components of landfills to comply with current laws.

In my own county, two options are being considered. Our nearest landfill will be in neighboring Wood County. Some advocate a garbage "transfer station". This is a facility where local collection trucks dump at a central collection point. There the trash is compacted for transfer on large trucks to a landfill some distance away.

Some transfer stations can be elaborate and expensive with an end "product" that can be hauled great distances with considerable efficiency, once loaded and on the road. Trailer loads of trash weighing perhaps 25 tons result. This is usually the type facility used in interstate hauling of trash.

Another type transfer station simply provides a ramp where traditional "route" collection trucks dump their loads into transfer trailers to be hauled to the landfill. Compaction at this type facility is not as great. Fifteen or twenty tons of garbage per truck leaving this type transfer station bound for the landfill is normal. If the facility only takes in 15 or 20 tons per day, this lower cost transfer station is adequate. Its entire daily volume can be hauled to the landfill at one load.

Yet another approach is being considered. In the case of a town that collects perhaps only 10 or 12 tons of trash per day, yet another approach is being pursued. Instead of a transfer station, use of larger route trucks for door to door garbage pickup is an option. The truck, after picking up the days trash, proceeds to the landfill. The truck carries about twice as much trash as the traditional "route" truck. But only one trip to the landfill is necessary where two were required for the smaller collection trucks. As the distance to

landfills increases, fewer trips are of more significance.

The disadvantage of this larger collection "route" truck approach is that a crew must load twice as much trash before the truck is full. This can push crews past limits because landfills usually stop accepting trash by mid afternoon so that daily cover can occur, as required by law.

Whatever approaches are considered, most everyone agrees that costs of garbage disposal is going up. Some municipalities are considering getting out of the garbage collection business altogether. Private haulers, some of whom provide no benefits and only minimum wages to employees can do the job cheaper than the cities that do provide benefits and better wages.

Another fallout issue related to the landfill closings is recycling of trash contents. The higher costs of garbage disposal cause recycling more of the waste stream to look attractive. But other economic realities kick in at the same time. As the amounts of recycla-

bles on the market increase, the amounts paid per pound for the recyclables decrease.

Also, in counties whose landfills are closing, direct revenue losses will occur. The fifty cents per ton the county solid waste authorities were receiving per ton of garbage disposed of at the landfill will now go to the county where the garbage is actually landfilled, not to the generating county. Some of these solid waste authorities have used some of these moneys to help offset the costs associated with recycling. That money will now be unavailable to the trash generating county and recycling efforts may therefore become even less of a priority.

A period of several months, or perhaps years, will probably be required for the economics of the garbage disposal changes now taking place to even out.



## Federal Affairs - Biodiversity Protection Act Tested on House Floor

Wise, Rahall, Mollohan vote for clearcutting and road building in roadless areas

from Save America's Forests

For the first time in nearly two decades, the entire US House of Representatives faced a major vote on clearcutting and road building on federal forest lands. Since 1976, the powerful pro-timber members of Congress bottled up this issue in committee. All members of Congress were able to hide this issue and avoid taking any personal responsibility for this national outrage, the disgraceful clearcutting and destruction of our National Forests.

Representative John Bryant, the author of HR 1164, the Forest Biodiversity and Clearcutting Prohibition Act, offered an amendment to the Montana Wilderness Act, 2473, on the floor of the US House of Representatives.

While HR 2473 would designate one million acres of federal lands as Wilderness, it would lower the level of protection for over 4 million acres of wild and roadless forests not designated as Wilderness. The Bryant amendment proposed to ban clearcutting and road building on these 4 million acres of forest, saving these forests and hundreds of millions of tax dollars.

Bryant is a great forest protection hero. He was willing to risk his political standing in

Congress by going around the committee structure in order to educate Congress and the American public and build for a win in the future. And Bryant was willing to stand tall against the powerful timber industry, which last election financed successful campaigns defeating the four leading pro-forest members of Congress.

Bryant's amendment received 142 votes. While this was not enough to win, it was a huge and historic breakthrough. This is the first time since the passage of the National Forest Management Act in 1976 that serious, large-scale legislation to stop clearcutting and road building in our National Forests was put to a vote in front of the entire House of Representatives. Bryant's previous effort to bring this issue to the floor last year was foiled by parliamentary shenanigans. But with the Forest Biodiversity and Clearcutting Prohibition Act closing in on 100 cosponsors, the Democrats could not refuse Bryant the chance to offer his amendment this time around.

Bryant spoke brilliantly in favor of forest protection. During his speech, C-SPAN viewers across the nation witnessed a huge photograph of a Forest Service clearcut in Montana that our office prepared for Bryant. In addition Bryant was able to lobby all 435 representatives at one shot. Videotape copies of the amendment proceedings and Bryant's dramatic floor speeches are available for \$10 from Save America's Forests, at 4 Library Court, SE, Washington, DC 20003, (202)-544-9219

## The New Guidebook to Coopers Rock State Forest

Each year 350,000 people visit Coopers Rock State Forest, located east of Morgantown, West Virginia. These visitors ask: Why are wooden rails imbedded in the trail to the Trout Pond? Why do deep trenches crisscross the forest? Who built the massive stone and log picnic shelters that lend the forest such graceful yet rustic charm? How was iron made in the stone furnace that looks like an ancient temple? Visitors also want to know how the

canyon was carved out and how the huge sandstone boulders that make up the Overlook were formed. Is the forest really home to bobcats and bears? What rare mollusks live in the forest?

The new Guidebook - "A Guide to Coopers Rock State Forest," by Judith Rodd answers these questions and more. Readers will learn where Indians carved their arrowheads, why George Washington crossed the Cheat and rode his horse through the forest and where the trains were repaired that carried timber off the mountain in the 1920s.

The guidebook has updated large format maps, which show the best trails for cross country skiing and

mountain biking, the best spots for birding, and where to go study life in a mountain stream. Descriptive, detailed trail guides show the way to rock outcrops, cascading waterfalls and cool mountain hollows - and to the special habitats of the green salamander, mountain spleenwort, and eastern woodrat. The guide's thorough and accurate natural history sections are being used as a basis of a woodland study curriculum.

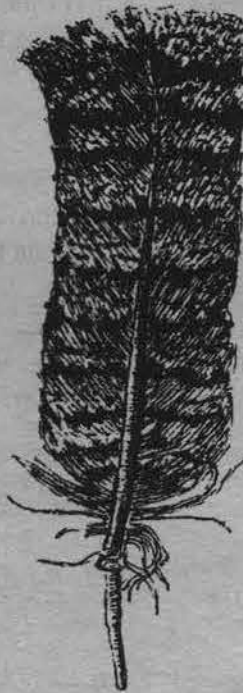
To get your copy, ask at your local book or outdoor store. Or to mail order, send \$10 per copy to Barn Echo Press, Route 1, Box 78, Moatsville, WV 26405

## Mountain Stream Monitors Reborn

(from page 3) APPALACHIANS AND OUR FUTURE - The re-organization of MSM, the formation of the Friends of the Cheat, the organized intervention in the T&T appeal, and general resurgence of environmental activism in North Central West Virginia indicate what Appalachian organizers and activists have been saying for many years. The fate of Appalachians is inherently connected to the fate of our ecosystem. Any force that threatens to destroy our environment, threatens the vitality of our culture and state. This consciousness of connectedness is one of the forces which drives the

struggle for environmental justice in our region and the world. MSM is proud to rejoin this struggle. Strugglin' in Appalachia, Jason Huber-law student and summer organizer with MSM

Anyone interested in joining MSM, the Friends of the Cheat, or participating in any of the events or projects mentioned in this article should call or write the MSM office at: Mountain Stream Monitors 264 High St. Morgantown, WV 26505



## International affairs

this news item from newstnet - talk.environment. item 7184

Keiko, the 7000 lb 21 foot orca whale that played Willy in the Warner Bros film "Free Willy" is in sad shape in a dolphin tank in a Mexico City amusement park. His dorsal fin has collapsed and he has worn his teeth down from gnawing at the sides of the tank. The whale suffers from chronic skin infections from the poor quality of the water in the tank. Meanwhile, Warner Bos is planning a sequel called Free Willy 2. Of course they are going to have to use another whale this time since the first one is in such sad shape.

# Further Adventures of Volunteers vs ATVs in County Park

by *Midnight Counsel*

The Circuit Court of Wood County has refused to remove Jeff DeVol from his position as resident of the Wood County Parks and Recreation Commission. Fifty nine citizens had petitioned the Court for Mr. DeVol's removal because of what appeared to be a conflict of interest.

Mr. DeVol serves as both President of the Wood County Parks and Recreation Commission and as an officer in the West Virginia Off Highway Vehicle Association. He also owns an interest in a retail business which sells all terrain vehicles and accessories. The petitioners had contended that these multiple roles and activities created a conflict of interest which should result in the forfeiture of Mr. DeVol's office.

This decision is only the latest in an ongoing controversy concerning the use of Mountwood Park by all terrain vehicles. At 2600 acres, Mountwood Park is the largest county park in West Virginia. Through an agreement entered

into in 1990, the Wood County Parks and Recreation Commission turned over 290 acres of the park to the exclusive use of the West Virginia Off Highway Vehicle Association to build and maintain all terrain vehicle trails. A subsequent amendment to the agreement expanded it to include a total of approximately 1500 acres dedicated to all terrain vehicle trails.

Many citizens of Wood County, including an organized group called The Volunteers of West Virginia, have been critical of the use of the Park by all terrain vehicles. Their complaints have included inadequate erosion control, cutting of

trees, poor maintenance on the trails, and the exclusive use of the trails and that portion of the Park by members of a private club, the West Virginia Off Highway Vehicle Association. Their concerns were partially addressed in February, 1994, when the Wood County Parks and Recreation Commission voted to cancel the agreement giving the West Virginia Off Highway Vehicles Association an exclusive right to use the trails. The problems with inadequate erosion control, cutting of trees, poor maintenance of the trails, etc. remain.

In the action just decided by the Circuit Court of Wood County, the petitioners used a procedure by which fifty citizens may petition for the removal of a public official. They contended that being a member of the Parks and Recreation Commission, an officer in the West Virginia Off Highway Vehicle Association, and an employee and part owner in a business selling all terrain vehicles presented a conflict of interest.

Mr. DeVol contended that he was not a member of the commission when the agreement to allow all terrain vehicles in the Park was made.

While this is true, the petitioners contended that the relevant statute prohibits the existence of a conflict. It makes no difference whether one actually exercises the power one has over the contract. Simply having the power over a contract in which you have an interest is enough.

Still pending is a counterclaim in which Mr. DeVol contends that the fifty nine people who signed the petition requesting his removal libeled and defamed him. Those who signed the petition are confident that their activity was protected by the freedom of speech and that the counterclaim will be dismissed. Mr. DeVol is represented in the counterclaim by former West Virginia Highlands Conservancy President Larry George.



## from the heart of the mountains

(from page 2) recognized as the threat it promises to be. Even the hoards of log trucks that daily sway around our bend in the road haven't made an obvious dent in the ridges of trees between Upshur and Webster counties - at least not as far as you can see from county roads. But, the closer you get, and the more time that elapses, the more apparent the impact becomes. Even on tree lined I-79 there are a few hints of what is to come: a couple of timbering jobs, one not so bad but with the jagged look of selective cutting, and another one that looks like someone just let loose of a dozer on the hillside.

Beyond the questions about logging on private lands are the questions about timber practices on the small percentage of West Virginia forestland that is publicly owned. The presence of our "heroes of Kumbrow" at the summer meeting (i.e. the Marshall family and the likes of John McFerrin and Andrew Maier) are constant reminders of the urgent need for a sane timber policy for state and federally owned public forests in West Virginia where there is growing reason to consider preserving larger uncut areas and leaving private holdings to be managed for the greatest monetary yield through wood products. Then, there are the people who live among the trees.

Tucked in the wooded areas all the way to Kumbrow are neighbors who live in any number of small communities far from towns and public water supplies, communities of people whose lives and lifestyle are oftentimes forgotten, unknown or simply disregarded in conversations and meetings about regulation and policy in Charleston.

The voice of the hills and hollows is barely audible midst the din of many debates over lessening standards of air and water quality, or evaluating clean up measures required of this or that industry, or building roads through 'uninhabited' stretches of the state...and yet these are the nooks and crannies of West Virginia that are often the most directly effected by those decisions.

As West Virginia continues to grow and city areas expand to meet the needs of new developments (like Clarksburg with the FBI Fingerprint Center), I fear that voice will become even smaller and the words of Joni Mitchell will ring more true than ever:

"OOOOOOO...Don't it always seem to go,  
that you don't know what you've got til it's gone....  
They paved paradise to put up a parkin' lot." ♦



(this poem comes from the place exploiters called the Dobbins Slashings in the Dolly Sods)

## at coyote glade

drunk on plum wine and bog water,  
we stay up until the last embers  
fade away among the ancient stones  
over the bright autumn stars bloom  
over the vast dreaming glade.  
we've talked half the night,  
but nothing's fixed,  
the old forests are still falling  
to make tabloid newsprint,  
as our tired eyes slowly open  
all the way to Andromeda  
spiraling in the spruce crowns,

and we resolve to topple  
the microwave tower, put out  
the blinking bloodshot eyes  
and let our fur grow long  
in the deepening snow.  
from the far ridge  
a lone coyote howls,  
echoing down the empty valley,  
and we howl back, we howl  
like brainless crazy mutants,  
and then the whole coyote tribe  
starts madly yipping and howling,  
and we all sing wildly together  
under the whirling stars.

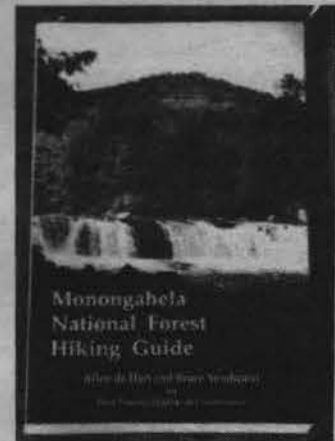
Bob Stough

## 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 totalling 812 miles, and a new full color cover. West Virginia Highlands Conservancy is the publisher. Authors are Allen de Hart 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 throngs 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, Flatrock Plains, Roaring Plains, Blackwater Canyon, Spruce Knob, North Fork Mountain, Shaver'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 \$.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.

Name: \_\_\_\_\_

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City, State, Zip: \_\_\_\_\_

# Fire and Smoke - "Ecosystem Management"

(from page 1) freaked out that they'll forget about human needs.

Then the Jacks spoke up. Sawmill Jack, (always friendly, using my name every time he spoke to me), said that the Wayne, properly managed, could produce 20 million bd. ft a year, that the Plan had called for a compromise cut of 7.5 million, but the supply had completely dried up since the appeals. He complained that FS had never cut more than about 4 million per year since the plan had come into effect. Oil and Gas Jack told us that the land in the his school district was 33% owned by the federal government and that since timber receipts had stopped coming in school funding had been drastically reduced. The federal government doesn't pay land taxes and they believed that federal ownership of land was hurting their tax base and blocking economic development. Most of the recreation dollars were going to the nearby city of Marietta in a different school district.

I tried to respond by saying that although I agreed that the Feds weren't paying their fair share, but if the land was returned to private ownership and people and industry moved out onto it and more tax revenue came in, that there would more services that the county and schools would have to provide. I told them how poor our schools were in Lincoln County and we didn't have any federal ownership to blame our lack of money on. They agreed that maybe they were using the Feds as a scapegoat.

I have been thinking for a while that this

concentration of federal lands in a few counties, the fact that the Feds don't pay tax, and that they offer a percentage of revenues (mostly from timber sales, but it could be from recreation fees) is really a set up to insure that local communities will always have to press for more timber cuts on federal lands. I believe we should spread our national forests around. Each County in the country having 10% (or 25%)?? of their land area in national forests. That way the 'burden' would be spread around, we wouldn't have to drive so far for our recreation, and a greater variety of ecosystems could be incorporated in the National Forest System.

I was greatly amused when the Jacks attempted again and again to show me the wisdom of their logic. They compared the forest to a garden that does better when weeded. Why not allow the experts to manage the forest to maximize timber? I tried to explain that they were only looking at the forest as a tree farm, but I don't believe we communicated. They asked me what I would be happy with, and were a little shocked when I told them an end to logging on the national forests. I tried to explain how only Public Forests could be left alone, that for the most part private timber land owners must manage their lands for timber production (hopefully taking into consideration the long term health of their forest). They asked if I was not happy with the 13,000 acres of 6.2 areas (future old growth). I said that I sure was, but that the 13,000 out of the 200,000 in the Wayne and 5 million acres of forest in Ohio was

too small a percentage. I tried to explain the beauty of Old Growth.

When we passed a large, fallen, rotten tree, I asked them if they thought it was a waste or valuable for mushrooms (what a great year for mushrooms around here), erosion control, habitat for salamanders, humus accumulation. When the discussion came to gypsy moths, they wanted my opinion as what I would do, as a sawmill and forest land owner, when the moths came through my area. Jack #2 said we should lay on the DDT, but wouldn't answer if he would mind wiping out hundreds of other insects species.

We were all very polite and agreed we needed more of this dialogue, but I'm afraid they aren't retreating, only digging in and arming themselves for the next go round when the Plan comes up for revision. I told them we needed to work together to see that private land owners manage their woods to maintain oaks and forest health, that that would serve both our interests.

## The Fire and the Smoke

So the FS wants to burn the woods and thin them well to save this endangered ecosystem (open oak woods). The rhetoric is all there, but what it comes down to is a million board foot timber sale with ecological excuses. Old Growth is many times more scarce than Oak/Hickory woods, but the Oak restoration project is the one that proceeds - 200 acres of oak regeneration in this OA.

Another 400 acres will be selectively cut, for the ecological purpose or moving this area into

a 'more natural state'. The trees are mainly all the same age after the land was clearcut at the turn of the century. All of a sudden the FS feels this even agedness is unnatural and wants to cut 600,000 bd. ft in order to increase the age diversity. But this thinning, while diversifying tree ages, would delay for years, the return of a healthy forest with plenty of 'large woody debris'. Same old business, new excuses. Ralph says that the FS can only process about one of these projects a year, that's 1,000,000 bd. feet rather than the 3 or 4 they previously cut and the 7.5 million the industry supposedly compromised on.

We said our good-bys, hoped we might 'enter into dialogue' again. On they way back to the district office we (FS staff and myself) stopped to view the Ruellia growing by the roadside (not in an open oak woods) - One Wild Petunia hidden in the masses of bee balm, along a dusty road.



Wild Petunia, *Ruellia Caroliniensis*  
from *Flora of West Virginia* by  
Strausbaugh and Core

## Meanwhile Back on the Mon

Wayne National Forest is using fire to simulate natural forces (and what a happy coincidence then have to cut a million board feet to do it). Yesterday I received a notice from the Cheat River District Ranger. He is proposing that they remove all salvageable timber from 30 acres hit hard by a march 93 windstorm. This storm is a natural process, restoring biodiversity, openings, large woody debris - ecosystem management at its best, and all the FS can think of is selling the timber out of it. Whatever the reasoning, its still - get out the cut. - bill r

## The Role of Fire in Oak Regeneration

by David Van Lear and Janet M. Watt  
the following is the abstract and conclusion  
from their paper presented at the Oak Regen-  
eration Symposium

Fire has played a dominant role in sustaining oak forests. Oak species have biological adaptations, such as thick bark, a tenacious ability to resprout repeatedly following top-kill, and resistance to rot, which enable them, better than their competitors, to withstand a regime of frequent fire. Fire functions to encourage establishment of oak regeneration by: (1) creating favorable conditions for acorn caching by squirrels and bluejays, (2) reducing populations of insects which prey on acorns and young oak seedlings, (3) xerifying mesic sites through consumption of surface organic materials and exposure of the soil to greater solar radiation, and (4) reducing understory and

midstory competition from fire-intolerant species. The ability of oaks to continually resprout when numbers of other sprouting hardwoods have been reduced by fire may allow oak to accumulate in the advance regeneration pool. Improved response to oak seedling/sprouts to release and enable them to dominate when stand-disturbances create conditions favorable for rapid growth. Based on biological adaptations of oak to fire, ecological functions of fire, and fire history, tentative guidelines are presented for using fire to promote oak regeneration on better sites. Effects of wildfires and intense fires in logging debris on establishment and development of oak-dominated stands are discussed.

Oaks in the Southeast are being replaced by other species on better sites where oaks were once dominant. The fire history of this region, biological adaptations of oak and other species to

fires, and ecological function of fire in oak ecosystems strongly suggest that oak replacement on these better sites is largely the result of a fire regime different from that which existed in the region in previous millennia. Until the past half century, frequent fires apparently allowed oak regeneration to accumulate and develop in the open understory of mature stands at the expense of shade-tolerant, fire intolerant species. When the overstory of these stands was either completely or partially removed by various agents (wind, insects, wildfire, Indian clearing, Harvesting, etc.), conditions were created which allowed advance regeneration dominated by oak to develop into mature stands dominated by oak.

If oaks are to be maintained as a dominant overstory species on good quality sites in the southeast, foresters will have to either restore fire to some semblance of its historical role as a major environmental factor or develop methods that simulate the effects of fire. It will be essential for foresters, as well as the public, to recognize that fire was a major factor shaping the composition and structure of many forest ecosystems. ♦

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