



The Highlands Voice

NON-PROFIT ORG.
U.S. POSTAGE PAID
PERMIT NO. 2831
CHAS., WV 25301

Published by the West Virginia Highlands Conservancy

Vol. 28, No. 6 - June/July 1995

Earth Police

by Private Ragette'

Do you ever get frustrated writing letters, comments, appeals to your elected and appointed officials? How about when Senator Byrd tells you that your concern is his concern, but unfortunately it's not in his power to do anything about it? Or when you have worked days on an appeal of a timber sale and they just dismiss it? Have you expressed your outrage about the sweet secret deals between the Governor and Parsons and Whittemore, only to be told you were an extremist who cared nothing about jobs? Now I'm not telling you to quit harassing and educating government and industry officials, but perhaps you are ready to take that next bold step; to join that elite corps who are Reclaiming Civil Authority - the Earth Police.

My first brush with them was but a few weeks ago, at the Heartwood Forest Council. It was late Friday evening and I had painstakingly finalized and posted the agenda for the next day. I was exhausted and ready for that next beer, when this couple, who were watching me post the agenda, quietly asked why their workshop was not listed. Even though they were out of uniform, I could feel the 'Command Presence' that told me I had better get things right or there would be heck to pay. So we quickly found a location and under (3a) we entered a new workshop - "chip mills". We also found time to have Leaf address the whole council on law enforcement.

Leaf and Cielo Myczak. Their address is Chattanooga, but they live on the rivers and waterways of Tennessee southward. They built their

own all wooden sailboat and cruise around looking to investigate and cite earthrapers and other no good corporations and individuals who have lost harmony with the planet. Leaf founded the Earth Police to give him the authority to take the law into his own hands, the law of nature that is. He carries no gun, but is armed with his wit, a citation book, a broken cellular phone and fast running shoes. Their motto is One Planet, One Precinct. Their Division is the Global Riverkeepers, Riverkeepers for short.

Well, Saturday after lunch, we were treated to the full command presence of the Riverkeepers. Ah, if only all policepeople were as witty, hilarious and compassionate as Sergeant Myczak (sorry if I have your rank wrong, Leaf). He was good cop/bad cop all in one. His spiel alone was worth the whole forest council registration fee. (Too bad for those of you who couldn't make it to the Forest Council. You'll have to travel to Alabama and the Bankhead National Forest for next year's event, and who knows if the Earth Police will show up, they certainly have enough to do to keep thousands of cops busy).

Leaf found the uniform abandoned in a Laundromat. He had the Riverkeeper Patches and photo IDs made, I don't know where he got that big shiny badge. He keeps the badge and his Riverkeeper ID in this nifty billfold and has practiced long and hard polishing that movement of whipping it out and presenting it open to unsuspecting night watchmen and mayors and corporate polluters. I especially liked the lami-

nated photo ID hanging by a clip from his shirt pocket, the cool patches on both shoulders and on his ballcap.

We learned lots of cop secrets. One is that the buttons on the shirt were fakes. Underneath was a zipper. Another was that the smaller the nameplate the more important the person. Leaf suggested always using "Office of" on all correspondence. A letter from the "Office of the Riverkeepers" is, by definition, more official. Leaf said it was imperative to have your own pen, that it looked pretty pitiful to have to borrow a pen from the criminal to write out the citation. He also mentioned that a cellular phone (or a coke can and a straw in a pinch) could add greatly to the command aura. There were lots more, but the most important for me was the idea of Command Presence.

We have been trained from birth to respect, or at least to fear and submit to authority. But despite all the nice rhetoric, their authority is maintained by force and violence. If you overstep the bounds the authorities have placed on you, their recourse is to use physical force, guns and violence if necessary. They get their Command Presence because they have the sanction of the state to use force, while you must submit or pay the price.

But Leaf has shown us that we can use the Command Presence without the threat of force. The Earth Police's authority comes from the laws of nature, from God if you will, from a great love of the Earth and a desire for humans to respect and live in harmony with the (see page 3)

EARTH POLICE

1 PLANET 1 PRECINCT
GLOBAL RIVERKEEPER DIVISION

* * * * *

NOTICE OF ENVIRONMENTAL VIOLATION

ISSUED TO Gaston Caperton

DATE 6/16/95 TIME 10:30 am

Ohio River

eco-system perpetrated against

YOU ARE HEREBY CITED

for

FAILURE TO DO RIGHT

under one or more sections listed below

- .01 Lying to Obtain a Permit
- .02 Ignoring Environmental Impacts
- .03 Pandering to Corporate Polluters
- .04 Promoting Disrespect for the Environment
- .05 Reprehensibly Irresponsible toward
 - a. soil @ water @ air d. other life forms
- .06 Blindly Self-Serving & Thoughtless
- .07 Defying Natural Laws
- .08 Promoting Greed and Over-Consumption
- .09 Greenwashing Your Image
- .10 Dangerously Unaware of Bio-diversity.
- .11 Other _____

IN ACCORDANCE WITH THE LAWS OF NATURE:
YOU ARE HEREBY REQUIRED TO MAKE IMMEDIATE
ADJUSTMENTS TO YOUR BEHAVIOR
THAT WILL BRING YOU INTO AWARENESS THAT
YOU ARE BUT A DEPENDENT AND SYMBIOTIC
PART OF ALL LIFE.

Forest Service proposes 1000 acres of Timbering in Cranberry Back Country

The "Opportunity Area" is called Little Fork. It lies adjacent to the Cranberry Wilderness and is drained by the Little Fork of the Williams River. Besides Kennington Mountain, it is the largest roadless area in the backcountry.

Very little cutting has occurred in the area since the original massacre around the turn of the century. According to Bill Schiffer, team leader from the Forest Service for this 'project set', the only cutting that has occurred since then was 24 years ago.

Bill said he was mailing out the scoping letter to interested parties on June 9. I'm not sure how much influence citizens will have though. Bill described the proposed actions (timbering and road building) as what they were "going to be doing".

The "proposed actions" include an improvement cut of 973 acres. This improvement is not a clearcut but will harvest about 1/3 of all trees in the area. Other actions include 57 acres of 'group selection' (a.k.a. clearcuts) of 3/4 to 1

1/2 acres each. So expect around 50 clearings scattered throughout the Little Fork drainage. The FS also proposes creating another 36 'wild-life openings'.

Most disturbing to me is the tremendous amount of road-building to occur in this currently remote and roadless area. Schiffer said they were going to build 5 miles of new roads and reconstruct 9.2 miles of road. Most of the miles of reconstruction will be equivalent to new construction since the 'old roads' have all but returned to a wild con-

dition.

If you treasure the Cranberry Backcountry, now is the time to get involved. Beth Little (653-4277) will head up the Forest Watch for this OA and plans an onsite visit this summer.

Unless major changes are made in the proposed action, several groups and individuals have promised to appeal and litigate this very dangerous intrusion into WV's largest wild area. Feel free to contact Beth or me (Bill Ragette' - 824 3571) for more information on how you can get involved.

Inside

- AMD - pg. 8
- Constantz - pg. 4
- Cooper's Rock - pg. 3
- Greenbrier - pg. 3
- Gypsy Moth - pg. 5,6
- Nat'l Forest Alert - pg. 6
- Thornwood - pg. 7
- Timber Salvage - pg. 3
- Wild and Scenic - pg. 7

---from the heart of the plateau---

by John McFerrin

No Putt-Putt Golf

This fall we had the Conservancy's Fall Review at Kumbrabow State Forest. It was fun. Even those who camped through the torrential down-pour Saturday night had a good time.

Kumbrabow State Forest is not for everyone. There are no water slides, T-shirt concessions, or video games. There is no putt-putt golf, laser tag, or outlet mall. There isn't even electricity.

But it is so peaceful and soothing. When we were there for the Fall Review the only sounds were the stream, the chattering of squirrels, and whatever chattering we contributed. There were no televisions blaring, no cars whizzing past. Just us and the woods.

We in West Virginia are fortunate to have such a place. It is a place where we can go if we just want to see birds, animals, and trees. I had heard there were warblers there; the weekend of the Review I saw warblers. I had heard there were big trees there; the weekend of the Review we hiked to see some fine old stands. It's not every state which is fortunate enough to have such a place.

It's not for everyone because that is not everyone's taste. If you want a serious outlet mall you have to go almost to Washington, D.C. If you want world class putt-putt golf, you have to go to Gatlinburg or Myrtle Beach. If you want to be scared senseless on a roller coaster, you have to go to Kings Island.

Gazillions of people go to outlet malls, Myrtle Beach, and Kings Island every year. I have personally visited all of these places and can report that I had fun at all of them (except maybe the outlet mall). That is the taste of the gazillions of people who go there every year.

The wonderful thing about a place like Kumbrabow State Forest is that it provides something for those of us whose taste does not run to roller coasters and outlet malls. It is a special place for people whose taste is for the quieter things. It is a special place for people who, if they want to just go sit in the woods, can just go sit in the woods. It is a place where someone can just enjoy nature without a lot of noise and clutter.

It is a place to get away from the clutter both literally and figuratively. It is very clean. I didn't see so much as a Big Mac wrapper the whole time I was there.

It is also a place to get away from the "clutter" that is part of daily life. There are no telephones. Without phones, nobody calls to ask if you want to put siding on your house. You can vaguely recall that we have a President and a Congress and a state legislature that on another day in another place seemed important. Out there they seem irrelevant.

It is for just this reason that we need places like Kumbrabow State Forest. We need places where people can get away from the clutter. We need places where people whose taste does not run to the whiz bang frenzy of many places people can visit. We need places for those of us who don't want to go some place where the entertainment is even more frenetic than the daily life they are escaping.

It's true that Kumbrabow State Forest is not for everyone. Just the same, it is important that we have it. We need some place for people who just want to where it is beautiful and peaceful. While there's not a video game emporium for miles, Kumbrabow State Forest offers something more important: serenity. It may not be everything for everyone but for those of us seeking beauty and peace, it is plenty.

Roster of Officers, Board Members and Committee Chairs

BOARD OF DIRECTORS

PRESIDENT: John McFerrin
114 Beckley Ave., Beckley, WV 25801 252-8733
SENIOR VICE PRESIDENT: Frank Young
Rt. 1, Box 108, Ripley, WV 25271, (304) 372-9329
VICE-PRESIDENT FOR STATE AFFAIRS: Norm Steenstra
1324 Virginia St., Charleston, WV 25301 W- 346-5891 H- 344-0150
VICE-PRESIDENT FOR FEDERAL AFFAIRS: Vacant
SECRETARY: Jacqueline A. Hallinan
1120 Swan Rd, Charleston, WV 25314 345-3718
TREASURER: Tom Michael
Rt. 2, Box 217, Lost Creek, WV 26385, 623-3447
PAST PRESIDENT: Cindy Rank
HC 78, Box 227, Rock Cave, WV 26234, 924-5802

DIRECTORS-AT-LARGE (Terms expire October 1996)

William P. McNeel, 1118 Second Ave., Marlinton, WV 24954, 799-4369
Andrew Maier, Rt. 1, Box 27, Hinton, WV 25952, 466-3864
Mary Pat Peck, 36 Meade St., Buckhannon, WV 26201, 472-3049
Joe Marshall, 108 3rd Street, Elkins, WV 26241 636-9555
Hugh Rogers, Moon Run, Kerens, WV 26276, 636-2662

DIRECTORS-AT-LARGE (Terms expire October 1995)

Sayre Rodman, 32 Crystal Dr, Oakmont, PA 15139, (412) 828-8983
Carroll Jett, Rt. 1, Box 22, Sherman, WV 26173, 273-5247
Don Garvin, PO Box 436, Buckhannon, WV 26201 472-8716
Gary Zuckett, PO Box 144, Pullman, WV 26421, 659-3193
Bob Marshall, 201 Virginia St. West, Charleston, WV 25302 345-5518

ORGANIZATIONAL DIRECTORS

NATIONAL SPELEOLOGICAL SOCIETY: Virginia Region- Judy Fisher
P.O. Box 276, Berkeley Springs, WV 25411 258-4974
PITTSBURG CLIMBERS: Jean Rodman
32 Crystal Dr, Oakmont, PA 15139, 828-8983
WEST VIRGINIA MOUNTAIN STREAM MONITORS: Jason Huber
MSM office: 264 High St., Morgantown, WV 26505, 296-8963
BROOKS BIRD CLUB: Mary Moore Riffenberger
Rt. 1, Box 253, Elkins, WV 26241, 636-4559
MOUNTAINEER CHAPTER TROUT UNLIMITED: Phil Rossano
Rt. 2, Box 375, Buckhannon, WV 26201 472-0942
WEST VIRGINIA RIVERS COALITION: Roger Harrison
49 W. Main St., Buckhannon, WV 26201, 472-0025
DOWNSTREAM ALLIANCE: Joan Sims
Rt. 5, Box 310 1/2, Morgantown, WV 26505, 296-8860

COMMITTEE CHAIRS

CANAAN VALLEY COMMITTEE: Linda Cooper
Rt. 5, Box 228A, Morgantown, WV 26505, 296-0565
MINING COMMITTEE: Cindy Rank
HC 78, Box 227, Rock Cave, WV 26234, 924-5802
PUBLIC LANDS MANAGEMENT COMMITTEE: Sayre Rodman
32 Crystal Dr, Oakmont, PA 15139, (412) 828-8983
Bill Ragette' - 144 Trace Fork Rd., Culloden, WV 25510, 824-3571
PUBLICATIONS COMMITTEE: Judy Rodd
Rt. 1, Box 178, Moatsville, WV 26405, 265-0018
ENDOWMENT FUND COMMITTEE: David Elkington
609 Farms Dr., Fairmont, WV 26554, 366-5906
RIVERS COMMITTEE: Donna Borders
Apt. 14, 1226 20th St., Parkersburg, WV 26101, 428-4746
HIGHWAYS COMMITTEE: Hugh Rogers, Moon Run, Kerens, WV 26276, 636-2662
MEMBERSHIP DEVELOPMENT: Carroll Jett
Rt. 1, Box 22, Sherman, WV 26173, 273-5247

ADMINISTRATIVE OFFICES

Richard diPretoro: Administrative Ass't 264 High St. Morgantown, WV 26505 296-8963, Fax 296-8623	Bill Ragette': Voice Editor 144 Trace Fork Rd Culloden, WV 25510 824-3571
---	--

The Highlands Voice is published by the West Virginia Highlands Conservancy, P.O. Box 306, Charleston, WV 25321. Articles, letters to the editor and other information for publication should be sent to the editor via fax, modem, disk or even hard copy via the US mail.

The Highlands Voice is always printed on Recycled Paper. Our printer uses 100% post consumer recycled paper when available.

Wild, Not Wasted, WV

by Kate Lambdin

The Heartwood Forest Council was the most educational, well organized and fun environmental conference that I've been to. One of the workshops was on direct action. We discussed the principles of non-violence, getting arrested and creative ideas to get noticed by the public and media. We planned an educational action for Memorial Day.

We printed (on kenaf paper) a leaflet discussing threats to WV Forests, rivers and air; the proposed Apple Grove Pulp and Paper Mill, Corridor H, and the continuing timbering and grazing of the Monongahela National Forest.

Most of us involved in the demonstration went to the New River Visitors Center next to the New

River Gorge Bridge. The Park Service was friendly, but they only allowed us 2 hours to leaflet and they restricted our activity to one area. We held up signs, talked with visitors, handed out leaflets and played music.

A small group went down to the old bridge across the New River and hung 2 large banners - WILD, NOT WASTED, WV and NO MORE TREES FOR TRASH. Memorial Day is one of the busiest rafting days of the year. Hundreds of people saw the banners. A third group went to the public take-out where many raft trips ended. They gave a brief statement and passed out more leaflets to the rafters before they left in the raft company buses. Hopefully we raised some folks environmental awareness and concern while they were out enjoying the beautiful WV day.



Photo: Langelle/NFN

Gas Drilling In Coopers Rock

by Richard diPreto

In the last Voice (May, 1995), Tom Rodd described a proposed purchase/swap of land within the viewshed of Coopers Rock Overlook. The deal would have resulted in Alamo Corporation purchasing 2,000 acres of land across the canyon from the overlook and then swapping those acres with the State for oil and gas drilling rights under the 12,000-acre State Forest.

But since that article was written, Alamo announced its withdraw-

al from the proposal due to unacceptable restrictions on its proposed drilling.

So the proposed Alamo gas drilling in Coopers Rock State Forest is dead, publicly. But what's going on behind the scenes? Rumors are flying that Charleston power brokers are trying to create another gas drilling deal.

If the State has the will, it can protect the view from the Overlook without rewarding a land speculator who lives on a yacht in Florida or

sacrificing the deep woods values of the Forest.

If you love the forest at Coopers Rock, rally around! Let Governor Caperton know that you DO NOT want gas drilling, industrial roads, and pipelines in Coopers Rock State Forest. Tell the Governor that you DO want the Overlook view protected.

Call him at 304/558-2000. Any other questions? Call Richard diPreto 296- 8963.

Earth Police

(from page 1) ways of nature and evolution. The uniform and other trappings set the stage for others to accept our authority, but unless we connect our hearts with our actions they won't fool many for long.

Its no easy step to move from years of accepting the Governor, the DEP Director, the Forest Service personnel as the authorities to the idea that we, when we are right and living true are the real authorities - that all these bureaucrats are only working for us and get their authority because we gave it to them. If they are not doing their job, we must take responsibility.

Of course we have no way of directly forcing others to follow the laws of nature. The Earth Police issue citations to inform the scofflaw and the media, letting them know just what crimes are being committed. The Earth police enter "private property" to collect data (soil or water samples or other information) from

industrial sites if the health of the Earth is threatened. The Earth Police can awaken the consciences of officials and polluters who have become inured to their daily disregard for nature's laws.

What inspired me most was Leaf's infectious joy. The old oppressive paradigm was shattered for him. What freedom, what happiness. We are in charge, it may take a few years or decades for the idea to reach all good souls, but it's inevitable.

The Earth Police are seriously considering opening up the academy for more recruits to form a new Division - Global Forestkeeper Division, Monongahela Section. To order your patches and receive training give me a call. Certainly Jim Page could use a few notices of violation for all the thousands of acres of clearcutting he has authorized in our National Forest.

Organizing Population Control Activist Network

It's time to organize a statewide network to do more about irresponsible population growth, improving education, etc.

Where and When - Saturday June 24, 2 PM at Waldamore building (large plantation type 4 column) next door to Clarksburg Public Library.

How to get there - Exit Rt. 50 (4 lane) at Chestnut St. Exit, turn toward downtown, turn left on Hughes Ave. (look for Salem-Teiko sign) before getting to the stop light, go 2 blocks to rear of library.

Please come and share your ideas.

For more info call Sandy Vasenda 291-2559 or Wayne Dunn 489-1929



ASTER divaricatus

Forest Watch Coordinator Sought

The West Virginia Chapter of the Sierra Club has received a \$5,000 grant from the Sierra Club Southern Appalachian Highlands Ecoregion Task Force to establish a Forest Watch Committee. This committee will develop a group of people interested in monitoring and influencing activities in the Monongahela National Forest, State Forests and State Parks.

A portion of the \$5,000 will be used to contract with a part-time Coordinator. This position would last approximately one year unless additional funding is secured. The duties of the Coordinator will include

- *Publish a newsletter.
- *Develop and maintain a mailing list.
- *Coordinate outings in the Forest issue areas.
- *Coordinate with other environmental groups
- *Attend meetings, including travel
- *Assist in other activities as requested by the Forest Watch Committee.

Prospective applicants should be computer literate, be somewhat familiar with the Forest Plan for the Monongahela National Forest and be capable of performing contract work (pay taxes, etc. themselves instead of an employer-employee relationship).

If you are interested in this position, please send a proposal to be received by July 31, 1995 to: Joe Carney, 111 Hayes Ave Charleston, WV 25314 (304) 344 2797

The Proposal should include information about why you are applying for this position, previous experience with environmental groups (paid or volunteer), how much time you will have available for this position, knowledge of the Forest Plan and Forest issues and your computer literacy. Please call Joe Carney if you have any questions.

Mon Forest News Cheat Ranger District

Jim Knibbs is the NEPA coordinator for the Cheat Ranger District. The Cheat plans to release at least three OA project sets this summer. The first expected is Indian Run by the end of June. This OA branches off from the infamous Rattlesnake Run OA, that was peppered with clearcuts over the last few years. Both lie just to the west of Otter Creek. Pam Merritt of WVEC, has arranged a site visit (dog and pony show perhaps) for Indian Run during the WVEC's summer get together on June 17.

Two other OAs scheduled for this summer are Location and Bear Heaven. Adam Polinski and Rick Landenberger of Sierra Forest Watch have targeted Bear Heaven for their scrutiny due to the high recreational use in that area (adjacent to the south of Otter Creek) and the past history of mismanagement at Bear Heaven. Call Rick (296-2320) if you are interested in this OA.

See other Monongahela News on pages 1 and 7

Trees and Caterpillars

being a chapter from
Hollows, Peepers and
Highlanders
An Appalachian Mountain
Ecology
by George Constantz

Much of the energy passing through an Appalachian ecosystem follows a single path. Arriving as sunshine, energy then flows through deciduous leaves, moth caterpillars, and fecal rain. This is why, by late summer, it is nearly impossible to find an intact leaf. A forest of holey leaves proves that caterpillars are exerting tremendous feeding pressure on broad-leaved trees. Yet the struggle between trees and caterpillars would not have become a dominant act in the play had trees served merely as passive targets. In their own subtle way, trees fight back.

Let us consider the larva's role in the relationship, focusing on the eastern tent caterpillar. Residing in the eastern half of North America from Nova Scotia to Florida, this well-known insect over-winters communally in egg masses on its principal host trees, cherry and apple. Deposited near branch tips the previous summer, eggs hatch as leaf buds unfurl. Because a female lays all her eggs, which contain fully formed caterpillars, in a single cluster, the "cats" that develop from one egg mass are siblings.

A few days after hatching, the caterpillars construct a tent near their tree's center, a site offering branches for support and a central position from which to forage. This permanent tent is enlarged several times a day to accommodate the growing larva. Cats enlarge the tent one layer at a time and the spaces between partitions provide room for up to 300 individuals during the morning and afternoon rest periods. Small circular openings in the tent allow entry and exit.

During feeding excursions to nearby leaves, the caterpillars secrete strands of silk. Collectively, the strands form a conspicuous silk trail that provides purchase on smooth bark. When a hungry caterpillar leaves the tent in search of food, it lays an exploratory trail chemical signal or pheromone. Returning from a successful foraging trip, it lays a recruitment trail pheromone by brushing the tip of its abdomen on newly deposited silk trails. Using an old trail, the caterpillar elevates its abdomen, leaving no chemical. Because they are able to discern the age of a pheromone on a silk trail, caterpillars can distinguish between trails to fresh foods, as well as the prompt abandonment of areas without young, tasty leaves. As cherry leaves age, they get tougher and drier, and provide less nutrition. As we shall see, from the tree's point of view these changes may

represent an adaptive strategy to protect itself from herbivory.

Tent caterpillars create a micro environment that allows them to be active on cool spring days. Like little greenhouses, tents admit solar radiation and retain some of the converted heat within the silk layers, maintaining temperatures up to 40 degrees Fahrenheit warmer than the surrounding air! By adding more silk to the bright side of the tent, cats enlarge their greenhouse in the direction of the sun. Eventually, these sophisticated larvae turn into short-lived, plain brown moths.

Albeit social and thereby efficient, the tent caterpillar is just one of thousands of species of Appalachian moths whose larvae eat tree leaves. Damage by insect herbivores decreases tree growth, seed production, and seed viability. Trees seem so vulnerable - they are a large target, rooted to one spot, without a fly-swatting tail. Yet by hook or by crook trees persist, in part through alliances with birds.

Birds lend trees a little help. At Hubbard Brook, New Hampshire, ecologists used netting to exclude birds from patches of striped maple, an understory tree. After several days of protection, the densities of moth larvae were significantly greater inside the cages than outside. The researchers estimated that birds, such as warbler, thrushes, and vireos, removed an average of 37 percent of the caterpillars from the understory. This effect was most intense from late June to mid-July when adult birds were feeding their demanding nestlings.

Bird predation most effectively controls insect numbers when the densities of caterpillars lie within a normal range. At such endemic population levels, birds reduce and thereby regulate the densities of larval moths on forest vegetation. During epidemic outbreaks, though, birds may take only 0.1 to 1.0 percent of the caterpillar biomass. The situation of caterpillars going amuck describes our current gypsy moth invasion.

Trees also get some help from larval parasites, which, like birds, probably make their most significant impact at normal levels of pests.

Trees have a defense problem, though. Compared to their insect pests, trees are long-lived and therefore evolve slowly. In the tree-caterpillar arms race, insects would appear to have the edge. How do trees persist in the face of rapidly evolving pests? We have recently discovered that trees deploy sophisticated chemical and genetic defensive weapons. For example, oaks produce tannin, an organic compound used in the process of tanning leather. When ingested as part of mature oak leaves, tannins bind proteins into indigestible complexes that inhibit the growth of moth larvae. In Vermont, leaves of red oaks that had

been defoliated by gypsy moth larvae two years in a row were drier, tougher, and had a higher concentration of tannins and phenolics, another natural insecticide, than leaves of undamaged trees. Gypsy moth larvae grow more slowly, produce smaller pupae and fewer eggs, and decline in vigor when they eat leaves of such defoliated trees.

These observations suggest that trees engage their anti-herbivore defenses fairly quickly. A wide variety of plants rapidly mobilize defenses in surrounding leaves and tissues after a herbivore bites. Some plants are induced to synthesize toxins that poison herbivores, others produce complex compounds that interfere with the attacker's growth cycle or digestive ability. Thus, a leaf's suitability as food is not so much a function of its primary metabolites, which contribute to the growth and maintenance of the plant's cells, but of secondary metabolites, compounds synthesized specifically for defending against herbivores. There is tremendous variation of secondary compounds among species. Such toxic chemicals can render an otherwise suitable plant repulsive to an insect. One type of inducible defense works as follows. After a plant is attacked, it releases yet unknown substances from the wound. These chemicals disperse throughout the plant and stimulate the production of molecules that impede the breakdown of protein molecules in the insect's gut. This makes poor food of the plant's leaves.

In Finland, researchers performed a series of interesting experiments on white birch, which is defoliated by the autumnal moth. Larvae that were fed undamaged leaves of shoots from which one leaf had been torn two days earlier grew more slowly and attained lower final weights than individuals that ate leaves from intact shoots. The biologists noticed that birch leaves in an area of heavy herbivory maintained an elevated concentration of phenolics for three years, while trees outside the zone maintained a normal level of phenolics. The level of resistance seemed to depend on the amount of damage.

In these studies it appeared that white birch induced two types of responses to insect predation: a resistance that was rapidly enhanced and rapidly lost in leaves of the current year, and a high resistance that lasted several years thereafter. The former tended to stabilize defoliator populations, whereas the time lag inherent in the latter may have contributed to population crashes and explosions.

Then the Finns made an astounding discovery. The growth, survival, and egg production of moths correlated positively with the distance between their food tree and the closest birch defoliated the previous year - the farther their food source



Peggy Kochanoff

was from the previously defoliated birch, the more successful the moths were. Incredibly, this suggested the presence of aerial chemical communication among nearby trees. A similar phenomenon has been reported in some trees of northern Appalachia. Perhaps this is a response to airborne chemicals released by the attacked trees. As I write, the possibility of a molecular early warning system among trees is being hotly debated among forest ecologists.

In Vermont, trees similarly inhibit gypsy moths. Gypsy moths reared on previously defoliated black oaks grew slower, produced lighter pupae, and had higher mortality than gypsy moths that ate leaves from unaffected oaks. These changes are great enough that they could influence the course of outbreaks.

Currently, inducible defenses are thought to spread to undamaged leaves on the same tree, to leaves on the same tree in successive years, and even to nearby trees. Not all biologists accept these ideas, though. Some assert that these defenses may be present, but that they have negligible effects on herbivore populations. They further counter that the studies, based in laboratories, are statistically flawed. I accept the ideas that defenses spread to other leaves within a tree and exert an influence in succeeding years in the same tree, but I question the evolutionary basis of inter-tree communication. Kin

selection may maintain aerial communication within a group of related individuals or clones, such as aspen and beech, but kin selection is less likely to work in a randomly interbreeding population, such as oaks and hickories.

In addition to inducing defenses, trees fight back in a totally different way - by being many individuals. To understand this idea, picture each tree as a population of buds. If a genetic mutation arises in a cell of a growing bud, the descendant cells will also carry the deviation. Mutations in buds give rise to different kinds of leaves, seeds, and defense compounds within a single plant. In essence, a tree becomes a mosaic of defense types as its buds evolve new variations.

Long life, large size, and annual regeneration of buds make it likely that variation will arise among different parts of an individual plant. Take the wildflower, spring beauty, for example: Different parts of single plants have different chromosome numbers. In one population, 68 percent of the individuals exhibited variation within themselves. Many biologists believe that this situation exists - and will be found - in trees, as well.

With two forms of within-plant variation - inducible defenses and genetic mosaics - trees present attacking insects with a complexity that normally prevents (see page 8)

The Gypsy Moth



A Reply To the Voice Article on Gypsy Moth Control Programs

by Charles Coffman, WVDA

Editor,

Your implication in the February issue of The Highlands Voice that the West Virginia Department of Agriculture (WVDA) has already driven, and is continuing to drive, some Lepidoptera species to extinction is of legitimate concern, but it is not supported by any documentation. Even with the significant increase in our knowledge of Dimilin in various ecosystems in recent years, we have no serious indication that species are being driven to extinction.

Concerning Dr. Linda Butler's (WVU) three-year study of Dimilin at the Fernow Experimental Forest, you state that "many species have not rebounded at all," when, in my understanding that populations, in general, are on the rebound and headed toward recovery. Based on our knowledge of insect ecology, this is exactly what we would expect, since insects are some of the most successful creatures on earth, perhaps the most successful. Their populations are extremely resilient. Given the proper conditions and suitable habitat, their substantial innate reproductive capacity enables them to colonize/recolonize an area relatively rapidly.

Concerning Dimilin itself, the

main reason for the WVDA's preference for it is its greater efficacy, when compared to Bt, which provides for a longer interval (usually three to five years) between treatments than with Bt (one to three years). The WVDA feels that, with respect to Lepidoptera, this may actually make Dimilin the better choice, because nontarget populations have more time to recover...

The point I am trying to make here is that we feel you have only scratched the surface of this issue, i.e. that the solution is not as simple as just using Bt. The fact is, that our concern for this aspect of Bt usage occurred to us very early in our efforts to address the gypsy moth invasion of West Virginia. In 1983, which was the first year for general suppression of gypsy moth in West Virginia, the WVDA treated 16,735 acres in the Eastern Panhandle. At that time, thinking we were being environmentally conscious, we chose to use all Bt. Post-treatment egg mass surveys, however, indicated that we were going to have to reapply at on about 40% of the acreage that we had just treated to reduce populations sufficiently below defoliating levels to avoid having to reapply it for several years. Since other states were having a similar problem with Bt and our resources to treat in the first place were limited, we did not

feel we could justify continuing this type of action, so we examined our other options more closely. Dimilin was a new material on the market at that time that had better efficacy and, in spite of having a broader nontarget impact range than Bt, we felt it had fewer nontarget impacts than the other alternatives on the market that were in common usage at that time, such as Sevin and Dylox.

In our 1984 suppression program, we split our usage between Bt and Dimilin. The results achieved that year have led us, in subsequent years, to rely, primarily, on Dimilin. Even though at formulations have been improved over the intervening years, the U. S. Forest Service's treatment monitoring database (the database that monitors gypsy moth suppression in all cooperating states) still shows a substantial difference between Bt and Dimilin efficacy in terms of population reduction, as evidenced by posttreatment egg mass densities. So it is not just a question of Bt costing more to apply in a given year, there is still a substantial risk that you will have to retreat again with the material in from one to three years, which puts more pressure on nontarget Lepidoptera populations.

Something else I need to say to demonstrate that we take the issue of nontarget impact very seriously is that for years our staff has met

annually with personnel of the Division of Natural Resources' Natural Heritage Program to go over proposed spray block maps looking for areas containing threatened and endangered species and species of special concern, with the goal of taking mitigating action wherever possible. These sessions have resulted in just such actions being taken. For example, when concern first arose over *Brachionicha borealis* (a species you mentioned in your article) a spray block on Elkhorn Mountain that was scheduled to be treated with Dimilin was switched to Gypchek. This switch insured that no impact would occur to the species from the landowner's gypsy moth cooperative suppression treatment with us. Another example, occurring this year, is of a landowner in the vicinity of a Virginia big-eared bat cave agreeing to switch a suppression treatment from Dimilin to Bt. In our cooperative landowner program, this type of decision ultimately goes back to the landowner. The important point here is that we are attempting to address this issue through our meetings with DNR personnel and have been doing so for years.

Concerning the part of your one statement that we have been spraying over 100,000 acres per year, the facts are that we have only sprayed over 100,000 acres three times in the 13 years (that's including

the upcoming treatments in 1995) since we started general suppression operations against gypsy moth. Granted, that the thousands of acres treated in those years that were less than 100,000 are still substantial figures, it is, nevertheless, important to look at the size of individual spray blocks in our programs. Over the years of our general suppression programs against gypsy moth, the average size of spray blocks in these has declined significantly. This is another factor that helps to mitigate the impact on nontarget species by leaving a smaller area for recolonization...

Concerning gypsy moth feeding habits and your comment that "they feed on the foliage of oaks and a few other hardwoods," it is important to point out that gypsy moth is known to feed on over 500 species of host plants and that in a substantial amount of West Virginia habitat, the only thing that might be left green in a heavy outbreak would be dogwood and mountain laurel.

We in the WVDA do not believe we are acting irresponsibly as you have suggested. Rather, we have attempted to weigh as many of these issues as we can against the alternatives and still provide environmentally effective and cost effective programs to the citizens of West Virginia.

Sincerely,
Charles C. Coffman, Director -
Plant Industries Division

Ragette' Responds

Despite Dr. Coffman's protestations, I still feel that there is a definite possibility that the WVDA spray program will wipe out Lepidoptera species. I'll be the first to admit that I don't have any documentation that proves species are being driven to extinction, but a review of what facts we do have shows it to be a real possibility.

In the second paragraph of Dr. Coffman's response he states that Dr. Butler's study of Dimilin at the Fernow Experimental Forest shows that "populations, in general, are on the rebound and headed towards recovery." At the time Dr. Coffman wrote this piece (April 9, 1995) the results of Dr. Butler's research were not even published, nor had he seen a copy of her report. Preliminary results are just being published now, in the Proceedings of the Fifth Annual Virginia Gypsy Moth Review. Her 3 yr. study at the Fernow show that herbivore, predatory and parasitic insects were negatively impacted for at least 1-2 yrs. The study also revealed that the chewing herbivores, which would include sawfly, caterpillar and beetles still showed significant reductions after the end of the 3 yr. study. The Dimilin treated areas in the Fernow study were 32

and 75 acres, which is very small compared to the areas sprayed for Gypsy Moth control.

What Dr. Coffman may be thinking of is the 3 yr. study Dr. Butler did at Cooper's Rock State Forest. In this study there was some rebound of populations; but because the Dimilin application in this case was proceeded and followed almost immediately by heavy rainfall, only 1/10 to 1/100th of a normal dose of Dimilin remained on the leaves.

I acknowledge that as far as the disjunct moth, *Brachionicha borealis* (which Dr. Butler first located), the WVDA has been very careful to preserve this rare species. (Dr. Coffman is to be applauded as well for trying to insure that the treatment blocks are as small as possible.) But the main problem is that we really don't know what other rare species occur in WV and where they are.

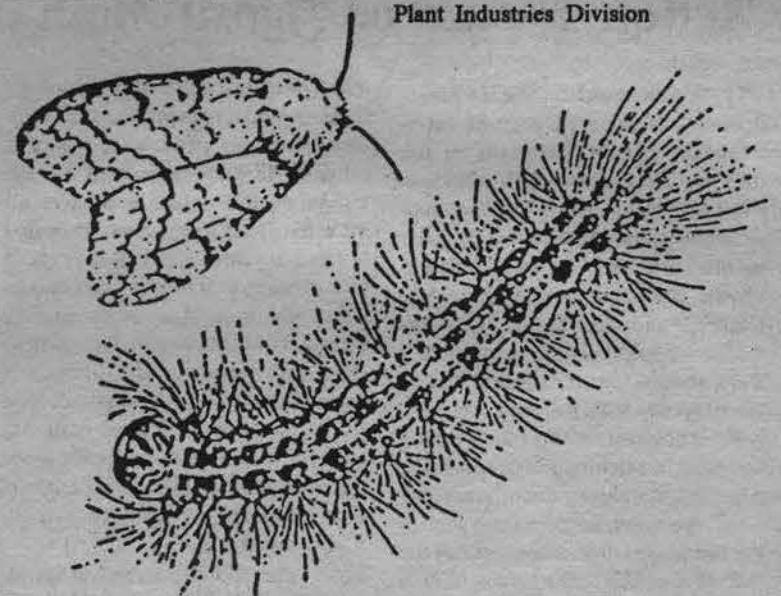
In a study of Moths Collected by Blacklight Trap at Cooper's Rock State Forest, West Virginia: a baseline study, Dr. Butler collected over 400 species of moths during a 3 yr. study with only one light used once a week throughout the moth season. Only one forest type was studied (a 50 to 60 year old Oak Forest with a red maple, cherry, birch understo-

ry). This is the main study of moths in WV.

What amazes me is that of the 400 species identified, 116 species were trapped in only one year. Some of these had but one representative. Surely if the study was continued for a few more years more (and rarer) species would have turned up. If more forest types were studied, many more species would likely be added. Dr. Butler also collected at traps in 26 WV counties (out of a total of 55). These trappings were not as extensive, with usually but one black light on 6 occasions all summer per county. Except for a few other studies, nothing else has been done to record our Lepidopteran treasures.

Of course it is hard to document Dimilin's effect on extinction if we have no idea of the rare species out there being sprayed. WVDA's Stop the Spread program literally blankets thousands of acres. Fortunately (?) they are using Bt for this. But then again Bt can cause problems, especially with heavy continued use to 'stop the spread' of the Gypsy Moth - certainly a Sisyphusian task.

I'll not argue with Dr. Coffman's spray acreage, whatever numbers you use, it's still many many



acres. One year the WVDA sprayed 300,000 acres. If the figures are going down, no one can be happier about it than me.

Dr. Coffman says that after 1984, when they used Bt and Dimilin in equal areas, they have used Dimilin because it worked so much better. Of course it does, but it also persists in the environment for 3 or more years, while Bt is gone in a week. Also Bt formulations have made giant strides in the last 10 years and the efficacy of Bt has greatly improved. Many states (and the US Forest Service) use Bt almost

exclusively.

Dr. Coffman feels that the WVDA is not acting irresponsibly, but is "weighing as many of these issues as we can against the alternatives..." I feel that Dr. Coffman is in a politically hot position under pressure by politicians, chemical manufacturers (who sponsored several of the breaks at the 5th Annual Virginia Gypsy Moth Review) and the WV Division of Forestry. Although he tries to balance all interests, he fails to give the moths the protection they deserve.

Getting Out The Cut



by Don Garvin

In their seemingly endless quest to "get out the cut," the US Forest Service has proposed a federal rule-making package which amazingly does all of the following: seriously limits opportunities for public input to the planning revision process, expands the timber base allowed for harvest activity, prohibits the reconsideration of some rivers for wild and scenic designation, makes it more difficult to revise existing plans, gives less protection to "sensitive" and un-listed plant and animal species, eliminates some special management requirements for wilderness and recreation areas, and increases the emphasis on clearcutting on federal lands.

All these changes (and more) are contained in a USFS 51-page notice of "Proposed Rule" which was published in the Federal Register on April 13, 1995. The document is the result of a several-year effort by the Forest Service to "streamline" the National Forest planning process and to "clarify" the National Forest Management Act.

Careful reading of the document, however, reveals that while couching the proposed changes in such euphemistic phrases as "streamline", "clarify", and "ecosystem management", this is actually an effort to maintain the status quo and worse - to limit the impact of environmental concerns on the Forest Service decision making process.

Forest Service concern about the planning process is an immediate one. Land and resource management plans for all but four of the National Forests were adopted in the 1980's, and most of those are now scheduled to begin the review process (the Monongahela is a prime example). Sensing that both representatives from industry and the environmental community will be seeking much more at the table during the revision process, the Forest Service has decided to short-cut that process - they call it "streamlining."

And although the basic NEPA (National Environmental Policy Act) provisions are maintained in these latest proposals, the Forest Service will in numerous instances eliminate several steps in the old planning provisions, resulting in fewer opportunities for public input. The loser, of course, will not be the timber industry, whose lobbyists are paid to attend meetings. With fewer opportunities to participate, the loser will be members of the general public, who may have to miss critical meetings because of their own work schedules.

The "ecosystem management" concepts contained in this proposal are strange, indeed. Like current congressional efforts to "devolve" environmental regulatory programs down to the states (where the national-based conservation and environmental groups will have less impact), the Forest Service proposes to eliminate several system-wide man-

agement goals and standards, such as the requirement to provide riparian area protection, and leave those decisions in the hands of the local Forest Supervisor. Yikes!

What true type of ecosystem management would greatly weaken the protective standards for "sensitive" species in the forest? Under this Forest Service proposal, only species listed as "threatened" or "endangered" would have to be considered during the planning process (and real protection of those species could be avoided by relying purely on existing wilderness or other protected areas, rather than by giving the species forest-wide protection). Limiting the planning process only to those species currently listed as "sensitive" by the US Fish and Wildlife Service, could result in no protection for literally hundreds of species of salmon and steelhead in the Pacific Northwest.

And how can the Forest Service claim it is adhering to principles of ecosystem management by expanding the timber base and eliminating economic consideration from the determination of that base? Yet these Forest Service proposals do just that by establishing that the "suitable base" consist of all forest land that is physically suitable, including protected lands such as wilderness and roadless areas. This change alone would greatly increase the amount of timber available to harvest in each forest. Eliminating economic considerations to determine

which lands are unsuitable for logging may, in fact, be a serious legal violation of the National Forest Management Act itself.

If all of the above isn't enough to turn your head, the Forest Service also attempts in this rule-making package to "clarify" the clearcutting language in the National Forest Management Act. The current NFMA language is, indeed, vague, and says that the Forest Service must insure that clearcutting (and other even-aged cuts) is used only on lands where "it is determined to be the optimum method." This language has, of course led to a lot of controversy and differing interpretations.

The current proposal would eliminate the nation-wide size limitations now placed on clearcuts, and would allow each individual Forest to determine size limits during the planning process. In addition, the proposed rule now reads as follows: "Clearcutting may be permitted only when it is determined to be the optimum method of timber cutting and the only practical method to accomplish one or more of the following purposes:

- (1) Establishment, maintenance, or enhancement of habitat for threatened or endangered species;
- (2) Enhancement of wildlife habitat or water yield values or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, fuel breaks, or similar developments;
- (3) Rehabilitation of lands adversely impacted by events such as fires,

windstorms, or insect or disease infestations;

(4) Preclusion or minimization of the occurrence of potentially adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health

(5) Establishment and growth of desired tree or other vegetative species that are shade intolerant (Writer's Note: this is the rationale most often cited to justify clearcuts on the Monongahela);

(6) Rehabilitation of poorly stocked stands due to past management practices or natural events; and

(7) Research needs."

WELL NOW, if the patented absurdity of clearcutting to provide habitat for endangered species or of clearcutting to rehabilitate damaged lands doesn't strike you as odd, then simply consider that those seven criteria listed above will basically enshrine the survival of clearcutting in every National Forest

Fundamentally, this proposed Forest Service rule is terrible in many regards. If you are concerned about the health of our National Forests, please take the time to write a letter expressing your opposition to "Proposed Rule 36 CFR Parts 215, 217 and 219 National Forest System Land and Resource Management Planning." Address your comments to: Director, Ecosystem Management (1920; 3 CEN), US Forest Service, USDA, P.O. Box 96090, Washington, DO 20090-6090.

Comments must be received by July 12, 1995

Action Needed on Gypsy Moth EIS - Write Now!

Background: The US Forest Service has released a Draft Environmental Impact Statement on the Cooperative Gypsy Moth Management Program. This will effect gypsy moth spray programs subsidized by the Forest Service on public and private lands across the US. The Draft EIS proposes to manage gypsy moths through programs targeting three areas of the US. These are, 1) the generally infested zone, primarily the northeast, south into Virginia and west to Michigan; 2) a transition zone, a band across Ohio, west Virginia and southern Virginia; and 3) the uninfested area, consisting of the rest of the US. Management will consist of suppression of gypsy moth outbreaks in the generally infested zone, slowing the spread in the transition zone, and eradicating spot infestations of gypsy moth in the generally uninfested area.

Management ultimately means spraying pesticides in each of these areas, but the environmental impacts depend heavily on the kinds of pesticides sprayed. The most environmentally damaging option is an insect growth regulator, diflubenzuron (trade name Dimilin). This compound is relatively non toxic to hu-

mans, but has extremely potent effects to nontarget species, with indirect effects on birds, bats, fish, and other wildlife species. Less damaging to wildlife is the biological insecticide Bt. Bt is a bacterium that is toxic to caterpillars (gypsy moth and nontarget butterflies and moths alike) which eat it while consuming foliage, but is much less damaging to other invertebrates. Relatively non toxic controls (Gypchek, pheromone flakes, or other biological controls) are available but are generally more expensive, labor intensive or otherwise restricted in their use.

Flaws in the EIS

The EIS has designed six alternatives that differ in WHERE gypsy moth spraying will occur, but these alternatives do not provide guidance in selecting WHAT to spray, or IF spraying is warranted, even though the EIS acknowledges that the environmental consequences depend on WHAT, if anything, is sprayed. Therefore, selecting the least environmentally damaging alternative is impossible. By default, the EIS will continue massive aerial spraying campaigns across large tracts of prime forest and wildlife habitat.

The alternatives also fail to

give guidance on when or how frequently to spray, and do not require monitoring for environmental damage from spraying. Because this EIS only describes the general gypsy moth program, it does not describe site-specific impacts. This will require individual environmental assessments of each spray area. This also prevents an assessment of the cumulative impacts of gypsy moth spraying.

Additional mitigation measures are needed to assure that impacts to biodiversity are reduced as much as possible. Many of the mitigation measures described in the EIS are overly optimistic or simply

won't be used in the real world pressures to apply pesticides over large areas in a short spray season.

What to do

Write comments to, or request EIS from: John Hazel, USDA Forest Service, PO Box 6775, Radnor, PA 19087-8775 (610-975-4150). Ask for a NEW ALTERNATIVE that:

- 1) minimizes environmental impacts of pesticide spraying by limiting spraying to the least damaging options;
- 2) limits frequency of spraying and size of sprayed areas;
- 3) requires monitoring for adverse environmental impacts of spraying and mandates a halt to spraying when

significant adverse impacts are observed;

- 4) considers the cumulative and long term impacts of spray programs;
- 5) avoids diflubenzuron sprays over ALL perennial streams, and
- 6) provides for more research on environmental impacts of gypsy moth control

Comments will be accepted until June 26, 1995 and are most useful when they recommend specific guidance to those who will later implement management programs, suggest usable mitigation measures, or identify specific concerns with the program as a whole. For additional information, contact West Virginia Sierra Club, PO Box 4142, Morgantown, WV 26504

Rare Species at a Glance

by Catherine Getty
from WV Nongame News

Grizzled skipper: (*pyrgus wyandot*) State status: Critically imperiled in West Virginia, 8 occurrences from WV.

Global status: Imperiled globally. General Description: The grizzled skipper is small with a wingspan of 7/8-1 1/4". It is dark brown-black above with two irregular bands of

white spots across the forewing. The hindwing above has two rows of partly diffused white patches. The body and inner 1/3 of the upper surface is covered with long, fine bluish hairs. The (ventral) side is olive in color with two and a partial third irregular white crossbands in zig-zag blotches. The fringes are boldly checkered. The grizzled skipper may be confused with the checkered skipper, *Pyrgus communis*, which is lighter

in color. Habitat: Open or semi-open shale slopes, logging roads, trails, power and gas line right of ways and edges in close proximity to woodlands. Global Range: Michigan southward through the Appalachian Mountains to southern Virginia and Kentucky. West Virginia Range: Hampshire, Hardy, Kanawha, Mineral and Pendleton Counties. Threats: Species has declined dra-



Pipeline Threatens Mon Forest

by Jim Sconyers

excerpted from the Mountain State Sierran

Thirty years ago six gas wells were drilled in the Monongahela National Forest. They were worthless. They never produced one cubic foot of gas.

Now some financial wizards want to rip a pipeline through the area. Say good-bye to Toolbox Hollow, Abe's Run, native trout...

The problem is, their plans would have tremendous impacts on the Laurel Fork Special area in Virginia's George Washington National Forest and on areas assigned special status for wildlife and nonmotorized recreation in West Virginia's Monongahela National Forest.

What They Want to Do to Our Forests

Build a thirty mile pipeline; yes, that was 30. And not just a pipeline; they will tear new 60 foot swaths in many areas. Of course, this is to allow roads to be built in many roadless areas. Roads carve forests into little parcels; they bring traffic and ORVs. Naturally, once the pipeline is in, it will have to be serviced regularly. There will be regular traffic all over the area. Moreover, once all of this has been done, there will be even more pressure for further gas exploration in these very sensitive areas.

What We Want

The Laurel Fork in Virginia is widely recognized for its rare plant and animal species, its diversity, and the unspoiled nature of this boreal ecosystem. Much of the West Virginia portion of the affected area has been designated by the Forest Service for "semi-primitive non-motorized recreation" and as habitat for wildlife communities that are not tolerant of disturbance.

These are special places, with special values. The disruption and fragmentation that this pipeline would bring are unthinkable. Habitat and prime recreation areas like this become scarcer and more precious every day. We must say NO to the pipeline! It should not be built!

More on Thornwood

While we are still waiting for the Environmental Impact Statement on this proposed gas pipeline project here are some comments filed by the Virginia Department of Conservation and Recreation.

The department's Biological and Conservation Data System (BCD) "documents the presence of natural heritage resources directly in the path of the proposed pipeline construction...Many additional rare species and natural communities occur in the vicinity..." The Division of Natural Heritage "is greatly

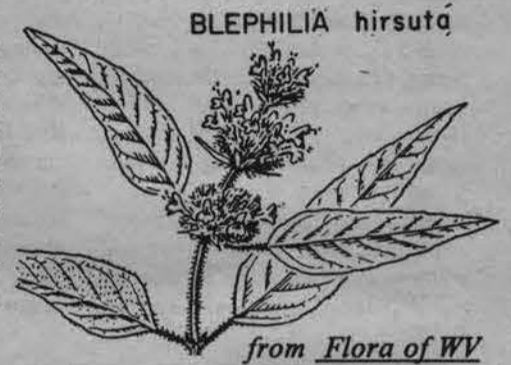
concerned that the proposed action may secondarily impact the natural heritage resources in the Laurel Fork Special Interests Area by creating conditions that will allow future natural gas exploration and mining."

"Occurrences of Blephila hirsuta (hairy woodmint) Cinna latifolia (slender wood reedgrass), and Milium effusum (tall millet grass) are documented along FS road 106 in the proposed pipeline construction area. BCD also contains records of Loxia curvirostra (red crossbill) and Martes pennanti (fisher) along this road..."

"In addition to the direct natural heritage impacts caused by pipeline construction, there is a potential for the presence of the pipeline to precipitate gas exploration and extraction from the Laurel Fork SIA. At least 24 species monitored as rare in Virginia occur in the project vicinity. These include rare plants, insects, birds and mammals... It is the presence of so many rare species that prompted DNH to recommend over 6000 acres in the Laurel Fork area as the Laurel Fork Special Interest Area."

"It is unlikely that the full spectrum of rare species currently documented in the SIA would persist in this area if gas leases were developed here. In addition to direct habitat losses from the conversion of forest to well sites, gas lease development could lead to forest fragmentation, increased noise, and a general increase in human activity in the SIA."

"Contrary to the management described for Managed Area 21,... the "unique biological values" of Laurel Fork can be neither maintained nor enhanced if gas leases are developed in this area."



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 \$12.85 (this includes \$2.90 first class shipping) to

West Virginia Highlands Conservancy
PO Box 306
Charleston, WV 25321

West Virginia residents must add \$.60 sales tax. (total of \$13.45)

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

Name: _____

Address: _____

City, State, Zip: _____

MNF Wild & Scenic Rivers Study to be Released!

The long-awaited suitability study of twelve rivers eligible for National Wild and Scenic Rivers designation will be available soon.

On April 27th, the draft Environmental Impact Statement

for the select MNF streams was sent to the printers. The study is to be released to the public late June, followed by a 90-day public comment period.

While I don't know what we will see in regards to a preferred alternative, the MNF ID Team that has been working on this study developed 8 alternatives - ranging from recommending no rivers for designation, to recommending them all. (The MNF has said it will be something in the middle).

To receive a copy, write or call: Buzz Durham, Public Service Group Leader or Kate Goodrich, Public Information Officer MNF Supervisors Office 200 Sycamore Street Elkins, WV 26241 (304) 636-1800

The West Virginia Rivers Coalition is encouraging everyone to provide comments on this document - the more specific points raised, the better. And if you are not happy

with any of the alternatives presented, feel free to develop your own alternative.

It is during this 90-day comment period that we (the public) have an opportunity to influence any changes that may be made in the final study document.

It is from the public input that a final environmental impact statement - FEIS - will be prepared. The FEIS will ultimately be forwarded to the Secretary of Agriculture, who may then make a recommendation to Congress for a decision.

Whether or not any river gets designated as Wild & Scenic depends upon Congressional action. We must work to get as much support as possible for Wild & Scenic Rivers! Especially statewide support - from all levels - to ensure that one of our Representatives will be interested in picking up this issue.

Note: The WVRC will be drafting a briefing paper, summarizing the contents of the DEIS, for those who are not interested in wading through the entire document. To obtain a copy of it, or for more information please contact: Pam Merritt, Conservation Director, West Virginia Rivers Coalition, P.O. Box 606, Buckhannon, WV 26201. (304) 472-0025(w) or (304) 478-4922(h).

matically in the eastern U.S. Specific reasons are not known. Drought, pesticide spraying and loss of habitat are possible factors.

Best time to look for the grizzled skipper: Last two weeks of April and the first two weeks of May. -Source: The WV Nongame Wildlife and Natural Heritage Program.

Editor's note - The Grizzled Skipper would be susceptible to both Gypsy Moth Sprays, but since their larva do not feed the same time as

gypsy moth spraying. Bt would have no effect on them, but Dimilin would kill. I hope the WVDA is keeping track of where this skipper still lives and avoids Dimilin there also.

WV Nongame News is a free quarterly newsletter published by the WV Division of Natural Resources. Write them at WV Nongame News, PO Box 67, Elkins, WV 26241

Mining Chief Hears Comment On Tough Water Laws

by Paul Nyden
Charleston Gazette
May 31, 1995

Robert Uram, national director of the U.S. Office of Surface Mining, visited Charleston on Tuesday to solicit comments about tougher clean-water regulations.

Don Garvin, a member of Trout Unlimited, offered a blunt assessment: "It is a figment of anybody's imagination that anybody in the coal industry cares about clean water," Garvin said. "Men have made a career out of preventing the right thing from being done."

Garvin praised Uram for new federal regulations that would require coal states to spend more money cleaning up abandoned mines and treating

acid mine drainage, which kills fish and other aquatic life.

"I think it is amazing that OSM is preparing to go ahead with this, given the national political climate," Garvin said.

David C. Callaghan, retiring today as state Division of Environmental Protection director, and coal industry leaders disagreed with Uram's plans to toughen water-pollution regulations.

Callaghan called OSM's requirements that DEP treat acid water from abandoned mines "extremely expensive and difficult."

Currently, West Virginia had a Special Reclamation Fund that pays for reclamation when coal operators abandon mines without reclaiming them. The SRF is funded by environmental fines and a special tax of

3 cents for each ton of coal mined in West Virginia.

Cindy Rank, a past president of the West Virginia Highlands Conservancy, and other environmentalists often argue that this reclamation tax must be increased.

Uram said a recent federal study shows West Virginia's reclamation fund had a deficit of \$22.2 million in June 1994.

Callaghan said OSM does not have the authority to require states to treat pollution or acid mine drainage from abandoned mines.

Callaghan charged that OSM has "embarked upon a piecemeal and subjective effort to hold different states to different standards at the subjective whim of various federal officials."

The OSM regulates coal mining in

Tennessee, where there is no state enforcement agency. Callaghan said OSM itself does not follow the stringent requirements there that it wants to impose on West Virginia.

Uram called acid mine drainage "the most important on-the-ground issue in the coalfields." He said Pennsylvania, the other major mining state with big acid drainage problems, had already "admitted to its liability for acid mine drainage."

In two recent decisions, the West Virginia Supreme Court ruled that the DEP has a "mandatory duty" to treat acid drainage at abandoned mines.

In passing the federal Surface Mine Control and Reclamation Act of 1977, Congress intended to guarantee all mine lands would return to productive use once mining is completed,

Uram said.

"Land cannot return to productive use if there is acid mine drainage in the streams. Congress obviously intended to have streams protected after mining," Uram said.

Washington D.C. environmental lawyer Thomas Galloway said he disagreed with Callaghan, but praised him for the "significant progress" the agency has made under his leadership. Galloway supported an increased reclamation tax.

Bill Rainey, president of the West Virginia Coal Association, said acid mine drainage is "not a problem today" at mines abandoned before 1977.

If the DEP were to treat acid mine drainage, it would have to raise millions of dollars more from the coal industry every year.

Clinton Vetoes Rescissions Bill, Upholds the Law



From: Western Ancient Forest Campaign June 7, 1995

President Clinton today vetoed legislation (the rescissions bill) that included an amendment to exempt logging on federal lands from compliance with all environmental laws. The President's veto of the rescissions bill shows that he is willing to keep his promises and uphold the laws protecting the environment. But it's not over yet. Timber lobbyists and sawlog politicians will be back with a vengeance, looking for the next chance to sneak through an ex-

emption from environmental laws. This next attempt could come either as a compromise rescissions bill, an amendment to the 1996 appropriations or as part of the budget reconciliation process. Sen. Hatfield stated that any rescissions bill compromise agreement made after the veto will have to include the timber provision, guaranteeing further conflict with the Administration over this issue.

Thousands of citizens and dozens of editorial boards across the nation have criticized the "logging without laws" amendment. More than 35,000

citizens from around the country registered their opposition to the timber language with President Clinton in calls, letters, and electronic mail to the White House in recent weeks.

According to Administration officials the "logging-without-laws" amendment was a factor in the President's decision to veto the rescissions bill.

In a speech today announcing the veto, the President said, "In this so-called spending cut bill, at the last moment there was also a very bad environmental provision added, which says that no environmental laws will apply for the next three

years to any cutting of so-called salvage timber in our forests, and we'll just have the taxpayers pay for whatever damage occurs to the environment. Suspending all the environmental laws of the country for three years is not the appropriate way."

Because another logging without laws amendment is expected soon, call President Clinton at 202/456-1111 and thank him for the veto and urge him to oppose all future attempts to suspend environmental laws. There is a new comment line poll which asks callers their opinion about the current level of environ-

mental regulation.

Also call your two Senators and urge them to oppose all future attempts like the Gorton amendment to suspend environmental laws. The vote on the Murray substitute amendment in the Senate was very close at 48-46. A similar vote may be coming back around again very soon, so it is essential we mobilize support now and win that next Senate vote. Call your Senators by dialing 202/224-3121 or write, U.S. Senate, Washington, D.C. 20510.

Trees and Caterpillars



(from page 4) pests from overwhelming the host's defenses. Such plant complexity has several effects on herbivores. If a pest makes a poor decision as to where to settle and feed, it will grow slowly and suffer poor reproductive success. Further, chemical and genetic variation al-

low parts of individual plants to escape being eaten. If the tree concentrates pests in patches of tasty foliage, it may increase competition among and predation of the pests. Ultimately, plant defenses may catalyze the evolution of counter-adaptations in the pests. For example,

some insects are able to convert normally harmful substances into sources of nutrition or even use the nasty substances to defend against animals that may in turn eat them. Caterpillars of the monarch butterfly feed on milkweed leaves, which are rich in cardiac glycosides, powerful

butterflies retain provides some protection against bird predators.

Although I have reported some controversial observations, some of which originate outside Appalachia, this essay conveys what I consider to be a likely scenario in Appalachian forests. Chemical weapons and genetic variation within individual trees provide potent defenses against voracious caterpillars that would otherwise hold an overwhelming edge.

Appalachian trees are not merely large, passive targets under attack by an efficient herbivorous army - they probably have adaptations at least as sophisticated as those portrayed here.

George may be contacted at Pine Run Cabin Ecological Laboratory
Route 1, Box 469
High View WV 25443
(304) 856-3911

Join the West Virginia Highlands Conservancy

Category	Individual	Family	Corporate
Senior/Student	\$ 12	--	--
Regular	15	\$ 25	\$ 50
Associate	30	50	100
Sustaining	50	100	200
Patron	100	200	400
Mountaineer	200	300	600

Name: _____

Address: _____

City/State/Zip: _____

Make checks payable to: West Virginia Highlands Conservancy
Mail to: P.O. Box 306, Charleston, WV 25321

toxins that interfere with basic cellular processes, the poison the adult

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 28, 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.