

DO SOMETHING WILD!

Make a tax deductible contribution to help West Virginia's Nongame Wildlife.



Published monthly by the W. Va. Highlands Conservancy

# THE HIGHLANDS VOICE

GINGER BEVARD  
W VA & REGIONAL HISTORY COLLECTION  
COLSON HALL - W VA UNIVERSITY  
MORGANTOWN WV 26505

0-00  
8782

Volume 14, No. 3 — March, 1982

ROCK CAVE

## Primacy Ahead

Library  
West Virginia University

Environmentalist Cindy Rank has doubts about the wisdom of the state's assumption of federal controls over water pollution.

**EDITOR'S NOTE:** Public comments on the proposed state takeover of the federal permitting system for water pollution control are being accepted until April 2, two weeks beyond a 10 a.m. hearing on the proposal now set for March 18 in the conference room of the water resources division of the Department of Natural Resources' building at 1201 Greenbrier Street in Charleston.

Cindy Rank is a founding — and still-active — member of "Friends of the Little Kanawha (FOLK)," a tiny organization in Upshur County that bullied the U. S. Environmental Protection Agency into admitting it should have been a lot more circumspect about allowing the Holly Grove Coal Company to start operations near her home. She recently visited Charleston where the state's only public copy of the proposed NPDES-takeover is available for perusal. She wrote the following article which is reprinted here with minor editing.

By CINDY RANK

The state of West Virginia is about to assume primacy for the National Pollutant Discharge Elimination System (NPDES) permit program.

What does this mean?

Anyone who discharges pollutants into our nation's waters from discernible points must have a permit to do so. Public Law 92-500 and its amendments (the Clean Water Act or CWA) spells out federal requirements for such NPDES permits. In West Virginia, the state itself has had some sort of permit system for industrial sources of pollution since 1953.

In recent years, therefore, it has been necessary for individual and

company dischargers to apply for and receive permits on both federal and state levels. Needless to say, most industry and many agency personnel

alike see this as a duplication of effort and a waste of time and money, as well as a burden in the normal course of events.

## CHARLESTON Takeover

Conservationists will scrutinize the state's policies and procedures for surface mine reclamation on March 4.

"Severely deficient" policies and procedures for the state's takeover of federal surface mining laws will be eyeballed by the state's leading conservationists and an attorney for the Appalachian Research and Defense Fund on Thursday, March 4. That day, at 1:30 p.m. in Charleston, has been set for a head-to-head meeting with officials of the state's Department of Natural Resources.

"... the policies and procedures to be followed by the Division of Reclamation are severely deficient when looked at in the light of the Federal act and the Federal Regulations," wrote Toby Hirshman, the immediate past chairman of the Conservancy's mining committee and an attorney for Appalred in Charleston.

The policies and procedures to which he referred were spelled out in a pair of memos issued by reclamation division chief James Pitsenbarger on Feb. 1 and again on Feb. 12 — the day before the state's regulations were to swing into effect. The state assumed control of the surface

mine regulatory program on Feb. 13, Hirshman said, when an injunction prohibiting enforcement of the state's permanent program terminated.

In addition to what he termed "deficiencies which should come to mind" when the pair of Pitsenbarger memoranda were read, Hirshman also pointed out that he had been told that the new, state-assumed program would not be operating under guidelines set down by the U. S. Secretary of the Interior when he originally approved the state's program. Rather, interim regulations are to be used.

After perusing the Pitsenbarger memos, Hirshman said he contacted DNR director David Callaghan and urged that a meeting — the March 4 meeting — be set up between "DNR officials and environmentally concerned persons ... in order to get a better idea of how permitting will take place" under the permanent program.

Persons interested in attending the meeting should contact Hirshman at Appalred (344-9687) immediately.

Attempts are being made to ease this burden and to streamline the permit process. The Clean Water Act allows for individual states to administer their own programs if they can assure the administrator of the federal program (the U. S. Environmental Protection Agency or EPA) that a state program has been established which fulfills all the requirements put forth by the CWA and EPA's NPDES program guidelines.

The state of West Virginia is now asking EPA for primacy in this NPDES permit program. A detailed proposal has been submitted to EPA for approval. If, after the end of the comment period, EPA sees fit to approve the state plan, West Virginia will assume the authority for issuing NPDES permits. EPA will reserve for itself an oversight position much the same as the federal Office of Surface Mining (OSM) reserved oversight responsibility when West Virginia assumed primacy for the surface min-

ing permit program.

The list of operations requiring NPDES permits is lengthy — some 4,000 individual facilities in West Virginia alone, including sewage treatment, chemical and coal preparation plants, new source surface mining operations and so on.

While other potentially polluting activities are not included in the NPDES program, they are dealt with in different voluntary and regulatory programs. Examples of those would be the "non-point" sources of potential pollution from timber operations, oil and gas drilling, agriculture, construction projects and so on. They are the concern of the voluntary compliance program known as the "208" program conducted by the division of water resources in conjunction with EPA and the CWA requirements. Underground injection of industrial wastes is the subject of the Underground Injection Control Pro-

(Please turn to page 6)

CHARLESTON

## Chipmunk Check-Off

Funding for the non-game wildlife program is flowing in — but has a long way to go.

"I'd have to say things are looking good," remarked Jim Morash, the man at the helm of an apparently burgeoning non-game wildlife program that is growing daily.

That growth is expected to continue through the middle of April and beyond, but even by the end of February, unaudited contributions to the non-game wildlife program hit the \$37,000 mark, well over a third of the way toward the \$100,000 goal for the first year's operation.

Morash is heading up the state's first attempt at managing its millions of critters who are not sought out to be shot or hooked or arrowed or giggered — things like owls and hawks and snakes and turtles. In fact, Morash has pointed out, 87 per cent of all of the Mountain State's wildlife falls into the non-game category.

Presuming the money keeps flowing in wildly from the "chipmunk check-off" on the state's tax returns, Morash expects his first task will be to inventory the state to determine the status and distribution of the wildlife that's out there.

What follows could be anything from traditional "extension" work like providing guidelines for property management to encourage wildlife to work with endangered species, the construction of interpretive trails and even land purchasing.

Morash, however, will not be working alone. He's under the direction of the Department of Natural Resources' wildlife resources division, and he indicated he also expects to take some of his cues from a ten-member advisory panel that reads like a "Who's Who" of state conservationists.

They are Salem College reptile expert Dr. Tom Pauley; bird specialist Dr. George Hall of W. Va. University; WVU mammalogist Dr. Ed Michael; Linda Elkinton of the Audubon Society; Ivan Taylor of the W. Va. Conservation Education Council at Charleston; Bill Healy, a wildlife biologist with the U. S. Fish and Wildlife Service in Morgantown; George Trimble of the Izaak Walton League at Elkins; Sheldon Haynes, a Lewisburg attorney and former commissioner of the DNR; Dan Cantner, former chief of the wildlife resources division of the DNR now director of Ducks Unlimited at Belle; and Leo Kopelman, the member of the House of Delegates from Braxton County who introduced the legislation which led to the creation of the program in the first place.

While the advisory council has not yet met, Morash says he hopes to get them together soon. "A lot of them don't even know each other," he said with a laugh.

CHARLESTON, WASHINGTON AND AROUND THE STATE

## The Drop of A Hat

A new 'clean' Clean Air bill is offered to a House subcommittee as the state's Clean Air coordinator hawks his services.

The U. S. House of Representatives' subcommittee on environment and health got first crack at a Clean Air bill being proposed by a California Democrat — and Congressman Cleve Benedict is a member of that committee.

Benedict, along with Congressman Robert Mollohan, have both signed on with the opposition to the new bill, now dubbed the "Waxman Clean Air" bill (H.R. 5555) to differentiate it from the so-called "Luken-Dingell Clean Air" bill (H.R. 5252) which West

Virginia's Clean Air coordinator Charlie Garlow refers to as the "Dirty Air" bill.

Garlow described the Waxman effort as a "good" Clean Air bill because it would "maintain most of the protections of the present law, while also addressing the acid rain and toxic chemical air pollution problems which have been ignored to this point." Markup, Garlow said, began Monday, March 2 — just as the VOICE was coming off the press. Garlow said he would be conducting a

press conference and launching a petition drive in favor of the Waxman bill.

While the announcement of the Waxman bill was good news, Garlow's recent three-day lobbying trip to Washington also brought back some bad news as well. He said both Sens. Jennings Randolph and Robert Byrd "have signed on to a version of Congressman Nick Joe Rahall's "Acid Rain Study Speed-Up" bill which would require the currently

(Please turn to page 6)

DREAMS AND NIGHTMARES

(Continued from page 8)

— "The economic benefits from peak power generation with the proposed plan are questionable, since the power has not been marketed and may not be marketable in the manner and at the price used for purpose of computing the costs and benefits.

"The study states that the Allegheny Power System (APS) is the most logical customer for the power. However, ... it may be possible that APS is not interested in purchasing peak power, due to the recent purchase of pump storage capacity (850 MW) at Bath County due to come on line in 1985 ... APS may not be willing to pay a price higher than its cost of producing or purchasing base load power. If this is true, the resulting benefit to cost ratio will be approximately 1.0 when using the federal requirements of financial feasibility (compared to 1.54 with the draft study benefits).

— "Calculations of oil displaced are based on questionable assumptions (, and) ... (the) Corps' analysis of the effects of the long tunnel proposal on white-water recreation is inadequate and misleading (because of a mis-definition of adequate flows ... the matter of weekend releases ... (and the issue of) flow travel time and the timing of releases (from the dam; ... the) dependability and predictability of power generation release ... (, and the inability to establish guarantees) for whitewater recreation. ...

— "The effects of the long tunnel upon lake fishing have not been sufficiently studied. ...

— "A multi-level outlet structure for the long tunnel alternative would not provide as good a temperature regulation for downstream fishing as it would for a short tunnel alternative. ...

— "The impact of the project on several potential endangered species has not been adequately determined. ...

— (And further) study of wildlife and project impacts upon wildlife within the gorge is necessary ...

"The Corps' own admission of the lack of data on wildlife and wildlife impacts of the project underlines the

need for more complete data before any final choice of alternative for the proposed modification can be selected."

The ARCC report, concludes with recommendations by its assistant director, Pat Munoz:

"The above discussion points out a number of deficiencies and problems with the draft study on the Corps' proposed modifications of the Summersville Lake Project and with its choice of the long tunnel "E" alternative. Naturally, before proceeding further with this project, ARCC feels that the Corps should reconsider its study, correct the deficiencies and review its findings in the light of additional information.

"However, the most important recommendation that ARCC wishes to make is that the Corps desist, at present, from pursuing this project, which as we stated at the beginning of our letter, is a violation of the spirit, if

not the letter, of the National Wild and Scenic Rivers Act, and is contrary to the intent of Congress, as expressed in that Act, until such time as the study of the Gauley for inclusion in the National System is complete, and Congress has had time to act upon the recommendations of the study.

"The Gauley river is a unique and precious natural resource of national significance. It has outstandingly remarkable values particularly in the recreational area. ARCC feels that any plan for future management of the Gauley should maximize the recreational and aesthetic values of the river; and that the best way to achieve this goal is through designation and management of the river as a component of the National Wild and Scenic River System. We are not opposed to power generation on the Gauley per se, but feel that such a use must be clearly subordinate to the preservation and enhancement of the river as a national recreational resource."

BOARD OF DIRECTORS

President: Jeanetta Petras; P.O. Box 506, Fairmont, WV 26554 (534-5595)

Secretary: Lois Rosier; 633 West Virginia Ave.; Morgantown, WV 26505 (296-5158)

Treasurer: David Elkinton; P.O. Box 506, Fairmont, WV 26554 (296-0565)

Membership Secretary: Linda Elkinton; P.O. Box 506, Fairmont, WV 26554 (296-0565)

Past President: Joe Rieffenberger; Rt. 1, Box 253; Elkins, WV 26241 (636-4559)

REGIONAL VICE-PRESIDENTS

HIGHLANDS: George Warrick; 1709 South Davis Ave.; Elkins, WV 26241 (636-5896)

PITTSBURGH: Jean Rodman; 32 Crystal Drive; Oakmont, PA. 15139 (412-828-8983)

CHARLESTON: Perry Bryant; 16 Arlington Ct.; Charleston, WV 25231 (343-3175)

WASHINGTON, D. C.: Stark Biddle; 2538 44th St. NW; Washington, D. C. 20007 (202-338-6295)

DIRECTORS-AT-LARGE

(Terms Expire January of 1983)

Larry George; 3557 Collins Ferry Road; Morgantown, WV 26505 (599-2855 or 736-1325)

William P. McNeel; 1118 Second Ave.; Marlinton, WV 24954 (799-4369)

Steve Bradley; 724 Snider Street; Morgantown, WV 26505 (296-0451)

Kate Long; 101 Ruffner; Charleston, WV 25311 (343-1884)

Jim McNeeley; 100 Haven Drive; Princeton, WV 24740 (Home 425-1295 or 425-9838)

DIRECTORS-AT-LARGE

(Terms Expire January of 1984)

Geoff Green; Rt. 1, Box 79-A; Burlington, WV 26710

Sayre Rodman; 32 Crystal Drive; Oakmont, Pa. 15139 (412-828-8983)

Skip Deegans; 102 North Court St.; Lewisburg, WV 24901

John Purbaugh; Rt. 1, Box 107; Kenna, WV 25248

Bardwell Montgomery; 512 Kanawha Blvd. W.; Charleston, WV 25302 (344-1997)

COMMITTEE CHAIRS

MINING Committee: John Purbaugh; Kenna, WV

SHIVERS FORK Subcommittee: Bardwell Montgomery; 512 Kanawha Blvd. W., Charleston, WV 25302 (344-1997)

CANAAN VALLEY Committee: Steve Bradley; 724 Snider St., Morgantown, WV 26505 (296-0451)

CRANBERRY BACKCOUNTRY Committee: Larry George; 9 Crestride Drive; Huntington, WV 26705 (763-1325)

SCENIC AREAS Committee: Sayre Rodman; 32 Crystal Drive; Oakmont, Pa. 15139 (412-828-8983)

RIVERS Committee: Perry Bryant; 16 Arlington Ct.; Charleston, WV 25231 (343-3175)

HIGHWAYS Committee: Geoff Green; Rt. 1, Box 79-A; Burlington, WV 26710

'ADOPT-AN-AREA' Committee: George Warrick; 1709 South Davis Ave.; Elkins, WV 26241 (636-5896)

ACID RAIN Committee: Don Gasper (924-6211)

ORGANIZATIONAL DIRECTORS

KANAWHA TRAIL CLUB: Charles Carlson; Box 131; Charleston, WV 25231 (925-7264)

NATIONAL SPELEOLOGICAL SOCIETY, Virginia Region: Jerry Kyle; Rt. 1, Box 231; Alderson, WV 24910 (455-7897)

BROOKS BIRD CLUB: Chuck Conrad; RD 1; Triadelphia, WV 26059 (547-1053)

NATURE CONSERVANCY: Max Smith; Rt. 2, Box 154; Grafton, WV 26354 (265-4237)

SIERRA CLUB, Potomac Chapter: Kathy Gregg; 30 Reger Ave.; Buckhannon, WV 26201 (472-3812)

POTOMAC APPALACHIAN TRAIL CLUB: Jeanette Fitzwilliams; 13 Maple St.; Alexandria, Va. 22301 (703-548-7490)

PITTSBURGH CLIMBERS: Sayre Rodman; 32 Crystal Drive; Oakmont, Pa. 15139 (412-828-8983)

W. VA. SCENIC TRAILS ASSOCIATION: George Rosier; P.O. Box 2126; Morgantown, WV 26505 (296-8334)

GEORGE M. SUTTON AUDUBON SOCIETY: George H. Warrick; 1709 South Davis Ave.; Elkins, WV 26241 (636-5896)

CANAAN VALLEY ALLIANCE: Steve Bradley; 724 Snider St., Morgantown, WV 26505 (296-0451)

VOICE EDITOR

Judy Frank, P.O. Box 1121, Elkins, WV 26241 (636-1622)

Conservancy Spring Board Meeting April 18 in Elkins

"The Highlands VOICE" (ISSN 0161-9896) is published monthly by the W. Va. Highlands Conservancy, P.O. Box, Fairmont, WV 26554. Distribution is to Conservancy members. Main editorial offices are located at No. 7 Kerens Hill, Elkins, WV 26241. A re-entry permit to mail at second-class postage rates is pending at Elkins, WV. Main entry is at Fairmont, WV. POSTMASTERS should address Forms 3579 to P.O. Box 506, Fairmont, WV 26554.

MOVING?

ATTACH OLD LABEL HERE

New Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

W. Va. Highlands Conservancy

SEND TO:

P.O. Box 506

Fairmont, WV 26554

Join

THE W. VA. HIGHLANDS CONSERVANCY

Description of membership categories.

Individual membership: Regular—\$10 from the rank and file who can give time and interest to the conservancy. Associate—\$20 from those who can afford a small extra gift in addition to their interest in West Virginia's outdoors. Sustaining—\$50 from those able and willing to give larger amounts necessary to underwrite our programs. Senior—\$8 from conservationists over 65 years of age.

Organizational membership: Regular—\$20 from a small organization anxious to help the Conservancy score conservation gains in the Mountain State. Associate—\$30 from a larger organization whose membership approves the efforts of the Conservancy. Sustaining—\$60 from a large national organization which appreciates the importance of a highlands area to the people of the eastern seaboard.

New  Renewal

Name \_\_\_\_\_ Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Organization you represent (if any) \_\_\_\_\_

Membership category (see descriptions opposite)

Individual  \$10 Regular  \$20 Associate  \$50 Sustaining  \$ 8 Senior Organizational  \$20 Regular  \$30 Associate  \$60 Sustaining

Brief statement of present position, interest, or activities in conservation activities (optional) \_\_\_\_\_

Make checks payable to The West Virginia Highlands Conservancy.

RANDOLPH COUNTY

# Ancient Seeds

An assistant state agriculture commissioner scours the highlands to find the world's oldest known seeds.

By LIBBI BROWN

What has already been hailed as the "plant fossil find" of 1981 could become the most important find of the decade, according to an assistant state commissioner of agriculture who has uncovered the oldest fossilized seed ever found anywhere in the world — and he found it in Randolph County last year.

Unearthed in rocks dating as far back as 360 million years ago, the seeds come from a small, tree-like plant called a seed fern. The fern lived before birds, before mammals, even before reptiles roamed the earth.

The age of the seeds has been placed at 355 to 359 million years old, three to five million years older than the oldest previously reported seeds which had been discovered in northeastern Pennsylvania around 1968.

Randolph County's fossil discovery was made by William Gillispie, an assistant commissioner of agriculture for West Virginia, a professor of geology at W. Va. University, a research geologist for the U. S. Geological Survey — and a consultant on plant fossils to the federal government.

Gillispie discovered the fossils in the eastern part of Randolph County, but said he would not reveal the exact location of the find until all excavation of the sites is complete. All together, fossils of 20 different plant types — some of which are seed plants — have been unearthed at the sites.

The plants were alive 360 million years ago in what geologists call the Devonian Age in geologic time, Gillispie explained. That age extended from 410 million years ago to 355 million years ago, a time when plants began their extensive colonization of the world and the first amphibians, insects and spiders were the dominant life on earth. The plants pre-dated man's appearance by literally hundreds of millions of years. During early and middle Devonian times, Randolph County was under sea water which deposited deltas of red sandstone and shale during the late Devonian time.

It was in the late Devonian deltaic deposits that Gillispie made his discovery. Proof of the age of the

seeds was confirmed by the geological stratum where they were found, a stratum which contains plants, pollen and spores which can be accurately dated. Also, botanists Gar Rothwell from Ohio University and Stephen Shickler from Virginia Polytechnic Institute helped with confirming and publishing the findings.

"What is so unique about this discovery is that not only are these the oldest seeds found in the world, but that many of the seeds and plants are petrified," Gillispie emphasized. "In other words, each and every cell is preserved so that we can do the entire evolutionary picture of the plant."

The petrification process occurs when minerals in water solidify in the cells of immersed plants, filling the inside of each cell. For this reason, petrified plants are the rarest and most important fossil types to be discovered, he explained. "Scientists can gain a lot more knowledge from petrified fossils than they would if only the outside form were preserved," Gillispie said. "Since we will be able to study carefully the fossils' internal anatomy, we can be assured of many valuable scientific papers for the future."

Scientific journal abstracts and magazine articles are already being published on Gillispie's discovery. The original scientific paper announcing the find was in the October, 1981 issue of "Nature" magazine which featured photographs of Gillispie's fossils on its cover. Since then, articles have appeared in two issues of "Discover" and several other periodicals. "Discover's" January issue, in summarizing the year in science, hailed Gillispie's discovery as the most important plant fossil find of the year.

"I have no doubt that it is the fossil find of 1981 and probably the fossil find of the decade," Gillispie said.

Conducted under the auspices of the U. S. Geological Survey, Gillispie's search for the earliest and most primitive seed brought him to Randolph County because, in his words, "there is no better place in the world which has Upper Devonian Age material than in Randolph County."

West Virginia is one of only two

states east of the Mississippi (the other is Pennsylvania) with a complete, unchanged geologic section dating from 570 million to 280 million years old, a period that covers seven geologic epochs. The oldest land plant — perhaps as old as 420 million years old — had been found in Bohemia in 1962, Gillispie said, but up until Gillispie's discovery, the oldest plant seeds had been located in northeastern Pennsylvania.

"My search for the oldest seeds actually began in Randolph, Tucker, Pendleton and Mineral counties," Gillispie noted. "In fact, rather nice fossil plants have been found near Valley Head, Dailey, Beverly, Mingo, Parsons and other places, but not seeds. Then, in 1978, a locality in Randolph County was discovered that seemed more promising."

"In 1979, better material was found and, in 1980, over 100 specimens of seed-bearing structures called 'cupules' were collected from different places in Randolph County. And, at least up until now, these specimens are the oldest and most primitive seeds to be found. In fact, it is extremely possible that older ones will never be found."

Gillispie is a native of Webster County. As an assistant commissioner of agriculture, his official office is at the state capitol in Charleston. He spends a great deal of time in Randolph County and nearby areas not only looking for fossils but also visiting his Webster County farm near Valley Head. At the Mountain State Forest Festival each year, it is Gillispie's soft, southern voice which emcees the traditional, Saturday morning contests such as woodchopping. Gillispie also is managing the state farm at Huttonsville.

Although he occasionally has help from geologists and graduate students, Gillispie prefers to work alone in his excavations, even doing most of the photography himself.

Gillispie is very secretive about the location of the fossil sites. "It's best not to mention the exact place until all of the scientific materials that will contribute to our store of knowledge about early plants have been excavated, studied and placed in

museums. This is not to be selfish, but is done because the plants contained in these sites are so fragile, so tremendously important to science, and so small that it is entirely possible that anyone other than a highly-trained professional might inadvertently destroy materials that exist nowhere else and are perhaps the only specimen of something."

## CHERRY GROVE

# Yurts and Such

A center for 'appropriate technology' sprouts in the highlands.

CHERRY GROVE—The Technology Center for Mountain People has opened following receipt of a \$95,000 grant from the Claude Worthington Benedum Foundation of Pittsburgh. This center is a part of Woodlands Institute, a non-profit educational facility located on Spruce Knob, West Virginia's highest mountain.

Originally started as an educational and resource center using the out-of-doors as a classroom, Woodlands Institute is now involved in a variety of educational and social service programs.

According to Jennifer Taylor-Ide, Woodland's administrative director, the Technology Center for Mountain People is a research and information exchange service which will expand work in appropriate technology that was started eight years ago when the institute was founded.

Michael Meador, co-director of the new center, explained that appropriate or "soft" technology is the name given to a particular way of solving everyday shelter, food and transportation problems. "This approach encourages conservation of resources through the use of tools, materials and building techniques that are simple, practical and economical. Many times the best solution to a problem is also the most simple solution," said Meador. "Our center was established to help people find the best solution for a variety of technical problems they encounter in

However, when the work is complete, Gillispie indicated that he would personally donate a specimen of the earliest seed, suitably encased in plastic, for display someplace in Randolph County, perhaps the library. Specimens will also be presented to the Smithsonian Institution for permanent safekeeping and display.

day-to-day living."

The staff at Woodlands Institute originally became involved in appropriate technology because of their location on Spruce Knob at an elevation of over 4000 feet above sea level. High winds and temperatures as low as minus 40 degrees Fahrenheit presented difficult building design problems. In addition, commercial electricity was prohibitively expensive to install at the remote location.

"We operate on a tight budget," said Ms. Taylor-Ide, "and that was especially true when the school was new. Consequently, we had to develop innovative and low-cost approaches to building construction." One of the early building solutions at Woodlands was the use of yurts, round wooden structures adapted from a Mongolian design which makes very efficient use of materials. Woodlands has become known for having the largest collection of yurts in the United States.

Currently, the primary focus of the center is to find and develop housing designs which are energy efficient, attractive and inexpensive. "Our intent is to provide people with access to information, designs, tools and materials which will enable them to make choices and meet their shelter needs," said Jim Underwood, also a co-director of the center. "To complement this focus on housing, we are working on the related problems of small-scale agriculture, water supply, energy needs, access to land and financing."

## JOHN HOPKINS AND THE SLOPES OF CHEAT

# Mountainside Speciation

New permutations in traditional Darwinism would debunk

the biological importance of the Cheat Mountain salamander — but not its value.

"... when environmentalists claim that every species, however inconspicuous, plays a crucial role in the balance of nature ..." — then evolutionary theorist and John Hopkins University paleobiologist Steven Stanley says he "grudgingly" harbors disagreement.

The view emerges as one of many that are popping up in respectable circles as a result of the current ferment in evolutionary biology.

"Neither Stanley nor any of his colleagues doubts the fact of evolution," writes James Gorman, a reviewer of Stanley's new book, *The Evolutionary Timetable*. The review was published in the January, 1982 edition of *Discover*, a newsmagazine of science

published by Time, Inc.

The current ferment and criticism of Darwinism bears "no relationship to those of the scientific creationists," writes Gorman.

"What they argue about is how new species appear. Does a species change by infinitesimal increments, slowly fading into a transformed descendant? Or do small groups split from established species, forming new ones within a short time — that is, 10,000 years or so.

"Stanley argues for the latter, or 'punctuational,' view of evolution ... The punctuational view implies, among other things, that evolution is often ineffective at perfecting the adaptations of animals and plants,

that there is no real ecological balance of nature."

"Stanley's reasoning for the first claim is that in the punctuational model of evolution new species may develop rapidly and unpredictably, and that not all change comes about slowly by natural selection in adaptation to the environment. As to the second claim, his argument is, in part, that established species do not evolve well under environmental pressure; on the contrary, they may well become extinct. And, he points out, for many of these species, nothing appears to take their place. The world has seen rodents the size of hippos; flightless, predatory birds nearly as tall as a man; and camels, deer, wolves, and

lions much larger than any alive today. The somewhat impoverished nature of modern faunas of land animals tells us that terrestrial habitats today are not brimful with life. Ecosystems, then, are not packed to the limit with completely interdependent species. Says Stanley, "I must grudgingly confess to harboring disagreement when environmentalists claim that every species, however inconspicuous, plays a crucial role in the balance of nature."

Stanley's theories clearly challenge those who would argue for the preservation of the Alleghenies' Cheat Mountain salamander as a vital link in the biological chain of life. The

species, apparently confined to only a little more than two dozen secluded spots on the forest floor of the Monongahela National Forest, survives where a combination of temperature, altitude and moisture have created apparent evolutionary niches for the slippery creature. (See the January, 1982 issue of *the VOICE*.)

If Stanley's "punctuational" model of evolution is a reflection of the real world, the salamander is more likely an expression of disjunct but similar environments rather than a link in any overall "balance of nature."

The salamander's value may still be ranked high, however, since careful scrutiny of the populations might offer evidence of the new theory's utility.



Sampling Sandy Creek below a drilling area are a contingent of neighbors and friends living on the creek near the Preston-Barbour county line. Aided by Mountain Stream

Monitors, the group spent a chilly February day wading around in the water to discover that the stream is highly populated with a diversity of benthic species.

The above section is just below a drilling area and is a typical, unpolluted but "sensitive" stream. The pH or acidity ranges from 5.1 to 5.5 while the conductance hovers around 20, or normal for such a stream.



Bent over and intently studying Rodd, three of many who spent a where drilling activity has speeded up their findings are (left to right) Sun- February day gathering data about shine Webb, Hugh Rogers and Bill the condition of the Sandy Creek



Taking a conductance reading with the aid of Mountain Stream Monitors and David Haggerty (center) and Glenn Davis (between Webb and the coordinator Rick Webb (right) are Haggertys. The local group hopes to gather sufficient data that should future drilling damage the stream, they will have enough "background" data to make a good case for themselves in court.

## SANDY CREEK Getting the Goods

Creekside residents band together in antic

**EDITOR'S NOTE:** Despite the defeat of the strong version of the so-called "landowners' bill" (see accompanying article), the problems of people living where drilling is taking place continue unabated. The following article was written by two of them. It is reprinted here with minor editing.

By DAVE AND DONNA HAGGERTY

On Feb. 22, 1982, a group of local citizens from Barbour and Preston counties got together with Mountain Stream Monitors to gather data on Sandy Creek. Their concern was prompted by recent drilling for oil and gas in their area.

A well was drilled for Berea Oil and

Gas Company by Eastern Overthrust Drilling Corporation in late December of 1981. Soon after drilling started, a large quantity of groundwater was encountered. Their holding ponds were not designed to handle the quantity encountered, and the quality of construction was less than adequate. The walls of the ponds collapsed, dumping tens of thousands of gallons of drill slurry into Sandy Creek on three consecutive days.

Until that time, Sandy Creek and its tributaries were among the purest streams in the Tygart watershed. Many people in the area depend on the creek to provide water for drinking and recreation. Wildlife abounds, in-

## CHARLESTON What Happened

A partisan view of the demise of a good bill

Quick parliamentary moves and heavy lobbying by the state's oil and gas industry were credited with the gutting of what would have been a good, solid "landowners' rights" bill which emerged from the State Senate last month.

Launched from committee in mid-February, it was dubbed "a good bill, but not everything we wanted" by landowners — and a disaster by the industry.

"This is going to kill the industry," remarked one driller operating in the state's highlands. "This is really a bad bill."

Even Tom Huzzey, the director of the state's oil and gas commission which keeps tabs on drilling activities, was not really tickled about it. He estimated it would cost his department an extra half-a-million dollars a year to administer the provisions of the bill adequately.

Basically, the bill would have provided 15 days' notice to the affected landowner — as well as anybody within 500 feet of the well site. In addition, a legal advertisement would have to be published in the local newspaper.

But the two critical factors were the provision for an informal hearing at the site with the driller, the landowner and an inspector. If no agreement could be reached within ten days, then the issues would be submitted to Huzzey as a non-binding arbitrator. His decision could subsequently be appealed into the state's circuit court.

That, the industry asserted, would tack untenable — as well as unplanable — delays onto attempts to begin drilling.

The second provision that was anathema to the industry was the matter of making offers to pay for damages landowners incur as the result of drilling accidents. If the landowner should reject the first offer, he could go to court or binding arbitration — at his discretion — and if the award were higher, then the driller would be liable for the court and other associated costs involved.

"The effect would be to force the oil and gas people to make a legitimate first offer," said backers of the bill. In

the end, they contended, it would really work to keep everybody out of court.

Hogwash, replied the industry, believing that most landowners would go to court in an endless series of suits.

The bill emerged at mid-month, passed its first reading on a Friday, then was laid over after the return from the weekend. Finally, after a dozen industry lobbyists had worked the Senate floor and more than 50 amendments had been hatched, a series of slick parliamentary moves succeeded in returning the whole mess to the committee where it came from.

Boone County Democrat Bobby Rogers opened the parliamentary salvos with a motion to return the bill to committee. That was followed with a move to table by Democrat Bobby Nelson of Cabell County and a third motion by Mercer County Democrat Odell Huffman to take an immediate vote on the motion to table. The move to table failed, and the subsequent vote on whether to send it back to committee passed 20 to 14. Then, in what observers called an attempt to "nail the coffin shut," Greenbrier County Democrat Ralph Williams moved to reconsider the vote.

A motion to reconsider can only be made once, and had a vote occurred then, it would probably have sealed the bill's fate immediately, consigning it back to committee.

However, McDowell County Democrat Lacy Wright quickly inserted a motion to adjourn — a motion that takes precedence over everything. It passed, probably because of the Senate was thoroughly confused and wanted to have a closer look before closing off the last avenue.

The final battle came on a Thursday when the motion to reconsider was introduced again. By this time, everybody'd had their chance to survey the bill and the proposed amendments (if they were so inclined: some leading Senators, as it turned out, hadn't even read the original, 60-page bill, let alone the amendment).

At this point, human fallibility

## CHARLESTON Letter

A missive, dispatched to the head  
of the oil and gas commission,  
pleads for closer adherence to —  
and stricter enforcement of — the law.

**EDITOR'S NOTE:** The following letter was sent to Tom Huzzey, the director of the West Virginia Oil and Gas Conservation Commission. It is reprinted here with minor editing.

Dear Mr. Huzzey:

We need your help. Please listen to a few voices from people who live along Sandy Creek on the Preston-Barbour County line:

— "I leased my oil and gas, and I hope to make a lot of money from it. But I want it done right. This stream is precious."

— "This creek is one of the few streams left in this country with fish in it. Our children swim in it. It shouldn't be harmed or polluted in any way."

— "The driller says he hopes he won't spill into the creek. Hope isn't good enough. The law says no discharge. If they can't do it right, they shouldn't be allowed to drill."

These comments were made when about 15 people who live along a five-mile section of Sandy Creek, east of Route 92, met in January 92 with an oil and gas well driller, one of your inspectors and a DNR water quality inspector.

Most of the people at the meeting have lived along Sandy Creek all their lives. All own property along the creek.

They are worried. The first well ever drilled on the creek was in mid-December, 1981. It spilled tens of thousands of gallons of silty, thick, blood-red mud, underground water and drilling soaps and chemicals into the creek on three days running. The water level rose dramatically.

People called the DNR, your office and the county sheriff's office. Some kept their cattle and sheep away from the stream until the water cleared each day — which took a number of hours.

DNR inspector Don Cathell came up to the well site in Colebank on two days and issued three citations for illegal spills. He knew the law permits no discharge from a well site. We were proud of him and his steadfastness.

When several local people visited the site, the drill crew, instead of apologizing, was rude and denied any wrongdoing. But later, the head of the drilling company admitted the spills.

When we contacted your regional inspector for Barbour County, he agreed to get the driller to come to a community meeting. At the meeting, the driller explained that they had hit a deep, underground water seam. Their pits were completely incapable of holding the water and drilling fluids and sediment that gushed out the hole.

Now a second well in Colebank has just been completed, by another drilling company. Their pond was just big enough for a lesser water flow that

they encountered.

But now thousands of gallons of mud, silt and drilling fluids are in a pond perched above a tributary of Sandy Creek. Our initial tests on this pond's contents show a conductivity of 973 — nearly 50 times that of the natural water of this stream.

... how long will this pond hold? Until a heavy rain, then overflow? Or will the pond's contents gradually leach into the groundwater? Neither is acceptable.

... It looks as if dozens of oil and gas wells may be drilled in the upper Sandy Creek watershed.

Your office and other state agencies must make certain that our state laws protecting streams are followed. That means no discharge — no spills, no overflows, no leaching, no uncontrolled runoff from the drill site.

Our meeting with your inspector left us uneasy. He seemed too willing to only hope that nothing would happen with future wells. The DNR inspector was firmer — but he can only write citations after a spill.

Afterwards is too late. The silt, chemicals and soaps, and highly acid and salty deep ground water must not get into this stream again.

... We need personal assurances from you and your office that:

— All drilling applications in this watershed will be carefully reviewed to see that adequate engineering provision is made in drill site plans, ponds and drilling procedures for possible huge quantities of deep, underground water.

— All fluids from the well site will be tanked out soon after the well is done so they will not later spill or leach out of the ponds. And that the fluids will be disposed of in a legal and safe manner.

— Your inspectors will see that ponds are solid, packed and lined if necessary, and do not leak or crumble.

— Water from frac-ing the wells will similarly be kept from the stream.

— All sites will be reclaimed as soon as possible to minimize runoff from bare earth and rock.

— Drillers and gas explorers will be told that if they seriously contaminate this creek they will not be allowed to drill here again. After-the-fact fines are simply not enough of a deterrent to drillers.

We know that the above is nothing less than what the laws of West Virginia require.

... we will continue to monitor water quality and drill sites, and act vigorously if any problems occur. People on this stream will never become resigned to further violations of the law, or of the stream — "accidental" or otherwise.

Signed  
David and Donna Haggerty  
and Thomas and Judith Fodd

## Participation of a springtime onslaught by oil and gas drillers.

cluding active beaver dams and good fishing. The citizens in the area were determined that oil and gas drilling would not ruin the fragile balance of the creek.

A meeting was called at a local home for all the people in the area to attend, along with a representative from the drilling company, the W. Va. Department of Natural Resources, and an oil and gas inspector from the Department of Mines. ... When the meeting was concluded, the oil and gas representatives would not or could not guarantee that it would not happen again.

A group of neighbors got together and contacted Rick Webb and Moun-

tain Stream Monitors. They suggested that we compile data so if another spill occurred, it could be used for comparison.

The data gathering first consisted of using nets to gather tiny insect larvae in the water. The nets were brought back from the field, and everyone helped pick out the tiny life forms. The children were especially fascinated by the process. At the same time, another group gathered information on conductivity, temperature, and pH (acidity). Samples were also taken. Another site in the area which had been recently drilled was visited, examined and monitored. The drill rig employees

were cooperative, and at the present time, the retaining ponds are holding.

Over dinner that evening, we all discussed the coming spring and the likelihood that many new wells would be drilled by many different companies. We all seemed to agree that it would be important to continue monitoring the creek's quality.

MSM left a conductivity meter, a Centigrade thermometer, some silver nitrate solution and sample bottles for us to continue the job.

Hopefully, we will not have to use the information we are gathering in court to protect Sandy Creek, but if another spill occurs, we will be prepared.

## Bill is offered.

entered the picture: Ohio County's Sen. Ben Honaker — he said he meant to vote in favor of reconsideration — pushed the wrong button by mistake. He got up and said so, publicly, a courageous act that drew admiration even from the staunchest backers of the original bill.

The tally came up 17-to-17, a dead heat which sent the measure back to committee where it was ripped apart.

The bill that finally emerged and was later passed (34-to-0) bore little relationship to the original proposal. It provides, basically, for a 15-day comment period — no right to object, just comment — for both the affected and the adjacent landowners (the 500-foot provision is gone); the placement of a legal advertisement in the local newspaper; and the granting of authority to the inspector to shut down an operation if it endangers a person or a fresh water supply.

Totally gone are the informal hearing at the site and the right to appeal an arbitrated decision by Huzzey; as well as the provision which ostensibly would have encouraged more reasonable offers of payment for damages.

"The bill is so weak now, the industry may not even fight it" in the House of Delegates, predicted one observer. In fact, some surface owners who helped to devise the original bill are expected to actively lobby against it.

## Photos by Glenn Davis

Rising into the late-winter sky is a drilling rig not far from Sandy Creek near the Preston-Barbour County line. The area has recently experienced a sharp increase in drilling activity, including one operation — not this one — which accidentally dumped thousands of gallons of underground water polluted with drilling fluids into the stream for three straight days.



MOOREFIELD, Other Voices

Hogwash

A highland newspaper urges an end to the 'mush' about Corridor H

**EDITOR'S NOTE:** The following editorial is reprinted from the Moorefield Examiner newspaper in Hardy County.

Earlier ... a news story was published about the demise of Corridor H. The Appalachian Regional Commission is cutting back its programs and because Corridor H doesn't even have a location selected, it was one of the projects to be dumped.

This in itself isn't terribly fascinating. If Reagan is serious about cutting government expenses, it makes sense that he shut down a project which hasn't been finalized in more than fifteen years.

What we did find fascinating was all the hogwash surrounding the decision.

For fifteen years Corridor H has been a political football. Hulett Smith, Arch Moore and Jay Rockefeller plus their respective road commissioners have played games with that road since the idea was conceived. Jay's spokesman the other day said the road hadn't been built "because of environmental, historical and terrain concerns, and the fact that some people didn't want it built."

The governor's spokesman didn't

mention the fact that it was the politicians who kept the road from being built in its early days. Nor did he remember that the people were pretty much in favor of the road in the beginning.

To add insult to injury, the gentleman also stated that the state is not abandoning Corridor H.

What in the world is West Virginia going to do with the plans for Corridor H? Build it with promises? Our state highway fund is out of money. We can't even keep up repairs or employment in the highway system because money is so tight. And now, the

federal government dumps a proposed highway and the state politicians tell us "never fear, we'll build it yet!"

Come in out of the cold, boys, and start all over again. The people don't want this road. The state doesn't have the money, so quit trying to lead us down a garden path with promises which can't be kept and aren't wanted in the first place.

So, Corridor H won't be built. Let's get back to work and do something about all the other road problems we have. And don't give us any more mush about what the state is going to do when and if the feds give us more money!

PRIMACY AHEAD

(Continued from page 1)

gram now being developed by the Department of Natural Resources' (DNR's) water resources division. And there are others.

EPA, as the federal agency presently charged with the administration of the NPDES permit program, has been working in cooperation with the DNR's water resources division to facilitate the transfer of that authority to the state. When West Virginia obtains primacy, the water resources division will be the lead agency responsible for the administration of the program.

The NPDES program as it applies to surface mining deserves some special attention. At the present time both the DNR's water resources and reclamation divisions require surface mine operations to obtain permits from their respective offices — another duplication that is irksome to many. These overlapping permit requirements present some question as to just which division of the DNR should oversee the NPDES program for surface mines. ...

Though water resources in the summer of 1981 expressed to EPA their willingness to delegate the administrative authority for the surface mine portion of NPDES to reclamation, EPA had earlier expressed some concern about what "appears to be strained relationships between all of the divisions of DNR," a situation which could not be acceptable to EPA if it were to designate water resources as the lead agency in the NPDES program. After a period of negotiation, EPA seems willing to accept a "memorandum of agreement (MOA)" between water resources and reclamation, as it appears in the proposed NPDES packet. This agreement outlines the desire of both divisions "to work in a cooperative manner in the administration and enforcement of their particular programs for surface mine facilities."

In this spirit of cooperation, water resources and reclamation are to simplify the application procedure by combining their present application forms into one form acceptable to all; provide for review of each application by both water resource and reclamation field personnel; provide for joint public notice, and so on. After this review, both divisions will process their individual permits utilizing the necessary information as it appears in the single application.

Once a permit is approved, reclamation shall be responsible for conducting field inspections; shall

take any necessary enforcement actions, and shall inform water resources of notices of violations relating to water quality. Water resources will conduct compliance monitoring on an annual basis for major facilities (some dozen or so are in operation at the present time in the state) and will receive quarterly non-compliance reports from reclamation on major facilities — as well as annual reports of non-compliance for all minor facilities. In addition, both divisions shall cooperate in responding to and investigating citizen complaints.

A second MOA, this one between EPA and water resources, spells out the mutual responsibilities of the state and federal agencies: "The parties agree to maintain a high level of cooperation and coordination between state and EPA staffs in a partnership to assure successful and effective administration of the NPDES program." The MOA outlines procedures for transferring information and files of West Virginia's NPDES permits already issued by EPA. The state is allowed the right to adopt or refuse to adopt these permits. Those that are refused will remain within the jurisdiction of the EPA.

EPA is to maintain an overview and may object to conditions of state-proposed NPDES permits. EPA has waived this right to review, object to or comment upon state-issued permits in some instances, but retains this right in other instances.

The MOA is to be reviewed at least annually and modified if necessary. Then, after two years, "EPA agrees to renegotiate this MOA to reflect and provide for a significantly lesser overview role of the state and to significantly reduce, where possible, the categories of dischargers subject to EPA review."

On the one hand, such a streamlined permitting process most certainly will be less confusing ... less of that proverbial "red tape" ... It is also said that with the authority residing closer to home, we will be better able to provide the personnel need to monitor and enforce permit conditions. Funding for monitoring and enforcement is a problem no matter who has the authority. The state has often said it knows and can better deal with its own problems than any bevy of experts from an outside agency. We are also told that with a greater degree of direct contact, greater rapport is established between industry and the state regulatory agency, and thus, state personnel can more effectively deal with problems that might arise onsite, and can certainly respond

THE DROP OF A HAT

(Continued from page 1)

authorized ten-year study of acid rain to be completed in five years — but it does nothing about acid rain.

"Then, too Randolph has indicated that he is going to vote for the Symms amendment which would double the permissible carbon monoxide emissions from cars) even though he is fairly good on other issues." Garlow credit Randolph with helping "to defeat preliminary attempts to weaken the Clean Air protections" from his seat on the Senate's committee on environment and public works.

Much the same message comes from a different front, the Conservancy's acid rain committee chairman Don Gasper. Sen. Byrd, he said, "is now sponsoring a bill that would increase sulfur in the air and, subsequently, 'acid rain.' ... Because he has so earnestly been seeking a 'balance,' as with all seekers, his position may not be final.

"Sen. Randolph would like to find a 'balance' also, ... but he has the sense and the long experience with this Act to know that while it will cost us to maintain and improve air quality ... there are many other compensatory values to be gained. This Act in 1978 alone has saved nearly 15,000 lives, according to the Council on Environmental Quality."

In the meantime, back in Charleston, Garlow continues working out of the W. Va. Citizens Action Group office in Charleston, urging people to set up meetings for him and telling them earnestly that he'll go anywhere in the state "at the drop of a hat."

A financial report shows \$1,389 in contributions to his efforts (including by far the largest grant, \$500, from the Conservancy), while expenses as of the last week in February totaled just \$51.73 less than that. Of that total, \$950 has been his salary and almost \$128 for mileage.

"We have produced and sold over 100 of our buttons," Garlow said in a brief outline of his activities ... I have spoken on TV and radio programs, college gatherings, civic group meetings, a health clinic, several house meetings and a series of high school science classes. The results have been letters to Congress, town meetings with Congressman Benedict (a media event with a papier mache fish in Lewisburg and a radio show interviewing local Clean Air Defenders) and several letters to editors. Similarly, John Heavener, executive director of the American Lung Association in West Virginia, has been criss-crossing the state on speaking engagements, spreading the word about the Clean Air Act."

One of Garlow's newest ploys is a series of public service announcements (PSAs) touting the need for clean air which he has mailed to every radio station in the state.

However, Garlow has requested the aid of people concerned about clean air in getting the spots actually used. "I need your help to follow up on this media outreach effort," Garlow said. "Often, radio stations are more responsive to people from their own listening audience ... The more we squeak," he said, referring to Coalition members and others, "the likelier we will get some grease on our wheel."

Garlow urged Conservancy members and others to immediately telephone their local radio station to determine whether or not the radio spots — they are half-minute-long public service announcements to be run without charge — had been received and urge their being used. If a radio station failed to receive the PSAs, Garlow said he would supply copies — and he also has cassette and reel-to-reel tape versions available.

He also suggests the production of a guest editorial or "a talk show on the vital topic of the Clean Air Act. After all, it is the most important environmental-health legislation being considered by the U. S. Congress last year and this year." Radio stations which nibble at the suggestion can be provided with Garlow or other members of a speakers bureau as well as government or industry spokespeople, he said.

Garlow also reported that the Senate markup of the Clean Air Act has been delayed by the Senate environment committee's staff report which confirmed the National Clean Air Coalition's study of the dangers of relaxing carbon monoxide standards. "The House is even further behind," he said, with hearings just beginning on HR 5252, the so-called Luken bill

NON-GAMERS



Taxpayers in the state of Virginia who are entitled to a refund on their state income tax now have the opportunity to designate all or any whole-dollar portion of their refund as a contribution to the new non-game wildlife fund.

The non-game program, established by the last session of the Virginia General Assembly, will help to supplement dwindling federal funds for such purposes as inventorying non-game species, raptor rehabilitation, and reintroduction of species.

Virginians who do not have a refund coming can still help the program by sending donations to the Non-Game Fund, Virginia Game Commission, Box 11104, Richmond, Va. 23230.

WORKSHOPPERS

A day-long workshop for persons throughout West Virginia who are interested in organizing around conservation issues will be held in Elkins Saturday, April 17, and the National Audubon Society's vice president for national affairs, Brock Evans, will be the keynote speaker.

Workshop topics will include influencing legislators, working with the news media, building an organization and "networking" with other organizations. Current activities centering around the Cranberry wilderness legislation will also be discussed.

For more information about the workshop, contact Leslee McCarty, Rt. 1, Box 21, Buckeye, WV 24924 or call 304-799-6097.

BOWDEN

# Very Bleak

The demise of a federal hatchery that supplies a third of the state's trout seems ever more certain.

The six employees of the Bowden National Fish Hatchery on the Shavers Fork in the middle of the highlands began eyeing the want ads last month because they and many others now believe that the prospects for the survival of the hatchery are "very bleak."

That assessment came in the wake of the disclosure of an early-February communique from the U. S. Fish and Wildlife Service which, according to Bowden hatchery manager Lloyd Strobeck, speaks in the "strongest, sharpest language" ever about ending all federal funding for the facility.

"Bowden's future is very bleak," remarked Don Phares, the man in charge of West Virginia's cold-water hatcheries production. "If it's not closed this year, it'll be next year; if not that year, then the year after. We're living on borrowed time," he predicted.

Until he'd read the Fish and Wildlife Service communique, Bowden manager Lloyd Strobeck did not agree. But that document spelled out in the clearest detail ever the proposed closure of 31 different hatcheries across the nation in an effort to save \$3.7 million and reduce employment by 135 people.

Proposed early in February by State Sen. Carl Gainer, D-Nicholas, was the idea that the fee for the state's trout stamp should be boosted from the current five dollars to six dollars. At maximum, such a proposal would yield a little less than \$150,000 — not enough to operate the hatchery, according to Phares, but a big chunk of it.

He has estimated — and Strobeck has concurred — that the state could operate the hatchery at less cost than the federal government.

Currently, the quarter-century old facility at Bowden spends \$233,000 per year raising half-a-million pounds of fish, more than 90 per cent of which go to West Virginia's streams exclusively. Though it's paid for with federal

funds, it is really a hatchery for West Virginians. Bowden produces 30 per cent of all the fish stocked in West Virginia, according to Phares.

He, along with the DNR's trout hatcheries chief Charles Heartwell, would be in charge of Bowden should the state assume its operation. Neither man, nor the deputy director of the DNR, Dr. Willis Hertig, see any problems with operating Bowden — other than financial.

Phares, for one, is not convinced that the state's trout fishermen are going to snap at the idea of paying an extra dollar. This year marks the first year for a two-dollar increase in the trout stamp, up from three to five dollars.

"We're already getting complaints about jacking up the price," Phares pointed out. While representatives of both Trout Unlimited and the Izaak Walton League have indicated they would support yet another boost in the trout stamp, Phares and his cohorts at DNR point out that such organized fishermen represent only a small portion of the total number of people who buy stamps.

In Charleston, deputy DNR director Hertig was equally cautious. "It's been our experience that with every license fee increase, there is a decline" in the number of people who purchase the license. "What effect this would have, of course, we have no way of knowing."

While he said both he and DNR Director Dave Callaghan would be in favor of assuming the operation of Bowden were it to be abandoned by the federal government, "we're not magicians ... (but) We'd certainly make every effort to keep the place open."

There are lots of problems. The Fish and Wildlife Service communique indicated that should the hatchery be abandoned, it would be turned over to the General Services Administration for "disposal. State and local governments may be able to acquire

facilities for various purposes," and it notes that both Ohio and North Carolina have expressed formal interest in such acquisition.

What such acquisition would entail is unclear. DNR's Heartwell has indicated the federal government may be willing to transfer ownership without substantial cost — but what equipment that might include is unclear. Phares noted that Bowden currently has some \$200,000 worth of fish trucks, mowers and endloaders. Any of them might be transferred to other hatcheries in the federal system. They would then have to be re-purchased by the state. He also noted that the hatchery's age puts it in a status where large repair bills could begin at any time. Acid rain, for instance, is slowing dissolving the pipe that brings the major water supply into the hatchery.

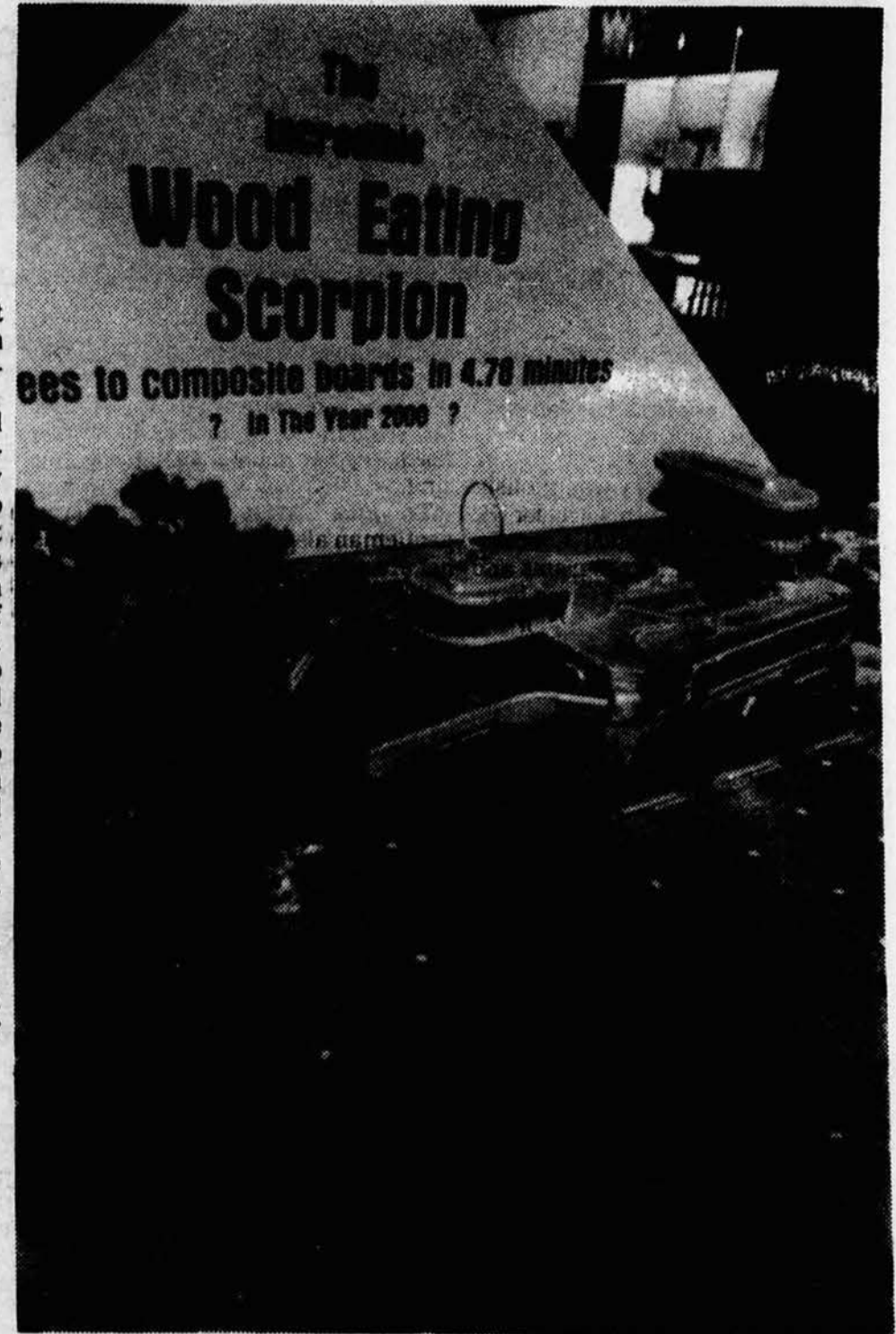
"It ain't going to be easy," Phares said. "We're talking big money. ... Anything we can do" to keep Bowden under federal operation, "we'd better do it."

## What Book?

The 80-page summary of the 400-page WATT BOOK originally produced by the Wilderness Society is available from the W. Va. Citizen Action Group.

Three dollars will just cover the costs of reproduction and mailing.

Write to CAG at 1324 Virginia Street East, Charleston, WV 25301.



This mobile factory known affectionately as "Jaws" is a concept whose time may not come in your lifetime. This concept on the scale shown here awaits a forest generation that resembles the large agribusiness farms of today. Trees must grow like rows of corn. Wood fiber must grow at rates far exceeding those currently realized. It is expected that certain highly productive plants will be cloned in breeding centers and planted in cultivated fields under intensive management conditions. Crops will be harvested annually. The wood itself will lack the strength of that available today. Densities will necessarily be low. The "Scorpion" will then reconstitute the low grade fiber into a uniform, homogeneous iso- or orthotropic material: the "superboard."

The mobile factory is operated by three men, one in charge of harvesting the crop and two in the tail section in charge of lumber production. Mature clones can be sheared or pulled from the ground. The entire stem is fed into a chipper which reduces the stem to pulp-chip size particles. The chips are reduced to fiber thermomechanically and classified as low grade for fuel and high grade for furnish. The furnish is dried. Lignous products of the pulping process are chemically modified to enhance bonding. Using this natural adhesive, furnish fiber is oriented, placed in molds and formed into boards by a continuous automatic press. The reconstituted "superboards" are dead piled, bound and wrapped in a protective plastic. The packages are loaded for transportation directly from the field.

The low grade fiber not used as board furnish supplies the energy needs of the entire mobile factory.

The processing sequence — and the

times involved — include harvesting, 33 seconds; chipping, 32 seconds; pulping, 64 seconds; drying, 14 seconds; fiber classification, 12 seconds; board formation, 36 seconds; pressing, 65 seconds; packaging, 26 seconds. The total average processing time from living tree to packaged board is 4.78 minutes. At an average of 350 board feet per tree and a yield of 85 per cent, about 300,000 board feet per eight hour shift or 900,000 board feet per 24-hour day is possible.

Following behind the "Scorpion" will be a mobile reforestation factory replanting clones as the mature clones are harvested. Hollow drill bits prepare the soil. A clone is fed through the center of the bit and into place. The clone is simultaneously irrigated and fertilized for growth and harvesting within 12 months.

It is difficult to imagine the obsolescence of such a grand scheme as depicted in the photograph. However, the efficient formation of right-angle parallelepipeds (lumber) from truncated cones (logs) is a continual challenge. In today's mills, 50 per cent of the tree ends up in lumber and 50 per cent in residues. The mobile factory producing reconstituted lumber yields 85 per cent of the original fiber. The frustration caused by these yield losses will be eliminated only when forest geneticists develop the technology to grow boards directly from the soil.

Imagine millions of standing boards in rows across acres of fields. Imagine growing — in one year — one million eight-foot two-by-fours all uniformly clear with selected grain patterns and colors. The board will grow from one planted cell. Its surfaces will function as the root system and, photosynthetically, as its crown.

At last, the 100 per cent yield is reached.

## ON THE TRAIL

# Foiling the Bikers

An Appalachian Trail crew devises an ORV-resistant bridge.

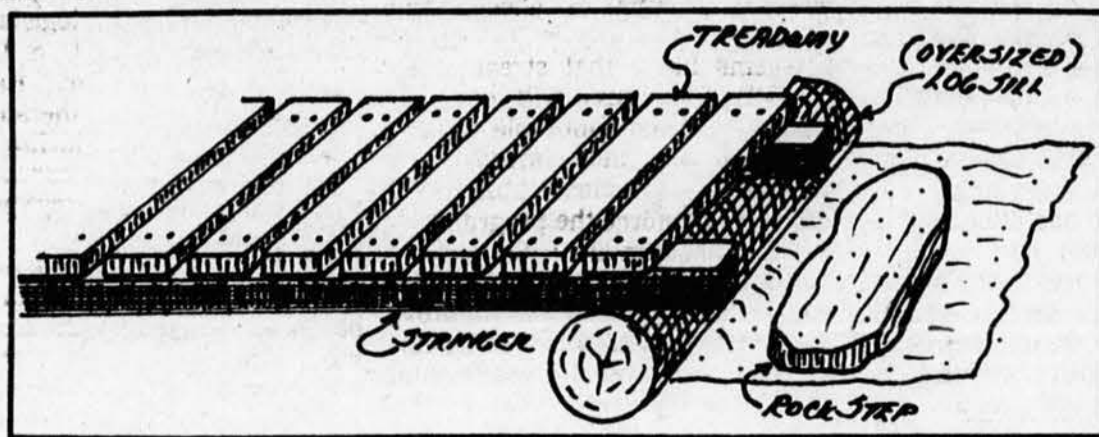
An off-the-road-vehicle (ORV) resistant bridge for through-the-woods foot trails has been inadvertently developed by a New York-New Jersey crew working on the Appalachian Trail.

Writing in the February edition of "The Register," the newsletter of the

Appalachian Trail, John Schoen described the serendipitous circumstances in which a large tree blown down by the wind was used to make over-sized log sills which were fine for hikers but difficult for the trailbiker.

"As the bridge stands," Schoen

wrote, "it is easily accessible to a walker who can literally take it in stride; crew members tried it several times. The trailbiker, however, must lift his machine up onto the sill, then out onto the treadway, and then repeat the operation in reverse at the other end of the bridge."



## SUMMERSVILLE, HUNTINGTON AND PITTSBURGH

# Dreams and Nightmares

A much-contested proposal to generate peaking power at the Summersville Dam

may be only the tip of the iceberg as the region attempts to deal with growing needs for electrical energy.

An attempt by the U. S. Army Corps of Engineers at Huntington to develop the hydroelectric generating capacity of the Summersville dam is drawing increasingly loud protests. Last month, a resolution opposing the agency's simple pursuit of the idea was introduced into the West Virginia legislature (by the same man, incidentally, who proposed the state's non-game wildlife program, Leo Kopelman).

The proposal has also drawn critical remarks from many of the state's environmental, conservation and outdoor groups, and a minor firestorm of letters — more than 500 as the VOICE went to press — had already arrived at the Corps office in Huntington.

Yet, the Summersville proposal is by no means the only major hydroelectric facility on the drawing boards in the state.

Neither is it the largest.

In fact, according to the National Hydroelectric Power Study just submitted to Congress for its consideration, the Summersville project is only the second largest of 23 different projects all over the state. Were all 23 of them to be developed to their capacity, well over 2,000 gigawatt hours of electricity would be produced annually — yet even that is only a small fraction of the electrical consumption of the East Central Area Reliability (ECAR) council region which includes West Virginia as well as Indiana, Michigan and Ohio, plus chunks and slivers of Maryland, Virginia, Tennessee, Pennsylvania and Kentucky.

### 'An Important Role'

"Energy trends within the ECAR area indicate that hydropower can play an important role in satisfying electrical power needs," according to a Corps report. "A regional power system must meet fluctuating demands for electrical power. ... In ECAR the need for peak power is growing faster than the total demand for power.

"In 1978, ECAR's population of approximately 35 million persons used 369,100 gigawatt hours of electric energy ... The maximum instantaneous demand or peak demand experienced by ECAR during 1978 was 63.3 gigawatts ... Demand projections indicated that by 1985, ECAR will use 461,000 gigawatt hours annually and the peak demand will be 80 gigawatts. The demand for electrical power in ECAR is met primarily by coal and nuclear fueled powerplants, but ECAR also uses about 30 million barrels of oil and five trillion cubic feet of natural gas annually to meet peak demands for power. One objective of developing ECAR's hydropower potential is to reduce the usage of these increasingly expensive and scarce fuels. ..."

### Dreams and Nightmares

In West Virginia, the outlook for hydropower on the scale being contemplated could be nothing short of an engineer's dream — or an environmentalist's nightmare.

In fact, of the 23 projects in the West Virginia portion of the National Hydropower Study, just building five of them would produce fully 70 per

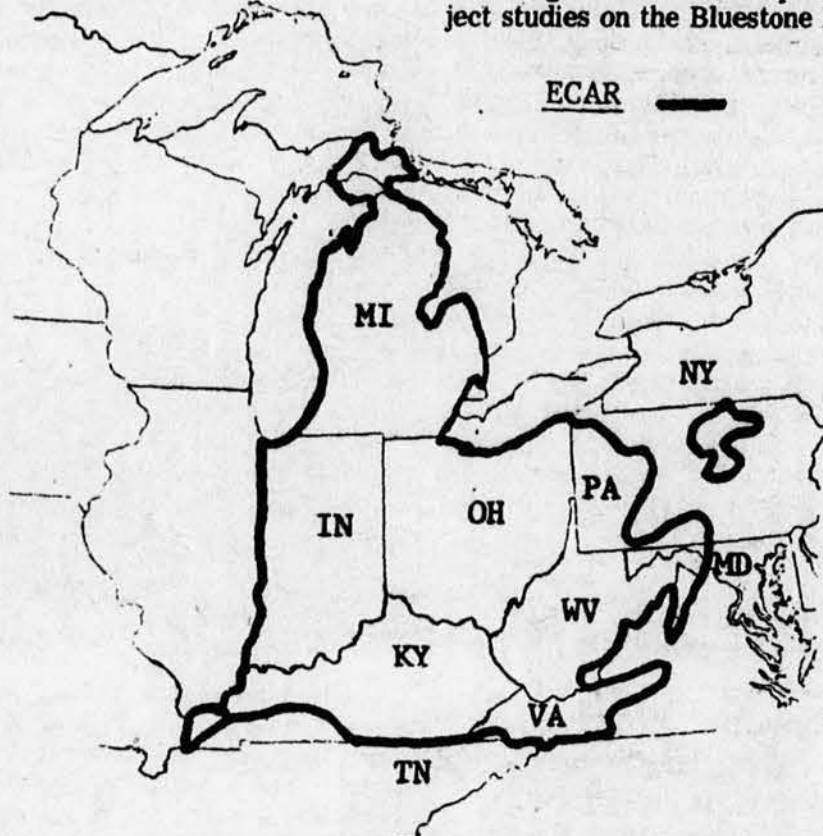
cent of the total potential in the state. And those five would forever alter the state's prime recreational rivers: two of them (37 per cent of the state's capacity) are on the Cheat, another (19 per cent of the state's capacity) on the Gauley, a fourth (nine per cent) on the New River, and the fifth (five per cent) on the Tygart.

### Little Wonder

Developing all 19 other projects, then, would produce only one-third of the total power of the region. There

of which have been shelved. Baumgardner termed the so-called "long tunnel" proposal for developing Summersville's hydroelectric potential as "an optimum use of the resource." He also suggested that environmental critiques of the project came from people with "a narrow interpretation of the resource. This project," he insisted, "will give a lot of benefits to a lot of people." Though it "may impinge upon what the white-water people would like to see ... we deal with more than one interest."

Baumgardner said he expected project studies on the Bluestone Dam to



should be little wonder, then, when Corps offices in both Huntington and Pittsburgh have proposed in the past, are now currently proposing or are about to propose the development of all five sites.

The granddaddy and grandson of them all — at Beaver Hole and Rowlesburg, both on the Cheat River — together hold the potential of well over a third of all the hydroelectric capacity in West Virginia. But both are being by-passed: Rowlesburg apparently because the Corps already crossed it off its list during the lengthy brouhaha during the 1970s, Beaver Hole apparently because the Corps learned its lesson at Rowlesburg.

That left three: Summersville on the Gauley, the biggest, producing an estimated 400 gigawatt hours of power annually; Tygart on the Tygart, producing well over 100 gigawatt hours annually; and Bluestone on the New, producing 210 gigawatt hours annually. Added to that list of top priorities has been a sixth project, a comparatively small undertaking which would supply less than three per cent of the total potential in the state. That project is the development of the Sutton dam which would produce 58 gigawatts annually. Most of the other projects are slated for 1995 or beyond.

### The Best for the Most

In Huntington last month, the Corps' chief of plan formulation for the planning division, Jerry Baumgardner, straightforwardly termed the Summersville project as "the best project in the Huntington district." In fact, it is one of 13 proposals in the Huntington district, most

### Enthusiasm

Enthusiasm similar to that which Baumgardner expressed for Summersville came from another Corps official in Pittsburgh, Armando C. Lardieri, the assistant chief of the engineering division. His district's part in the National Hydroelectric

Power Study was a little smaller, including only eight projects. But only one of those is currently being given serious consideration — the dam at Tygart Lake. As was the case for the Huntington district's Summersville project, the authorization to study the Tygart proposal came far in advance of the National Hydropower Study which sought to survey all potential sites in the nation and make a report on their potential to the Congress — a report which is just now being submitted through the National Water Resources Council.

Lardieri said that the Corps is currently working on the final stage of the Tygart dam project preparing a report to the Congress for authorization to proceed. While the Tygart Proposal has drawn virtually no opposition, the Summersville proposal has not fared nearly so well.

### The Torrent

"Listen to this torrent," wrote Paul Brannon in the January, 1982 edition of "Trout Lines," a publication of the Kanawha Valley Chapter of Trout Unlimited. "Any change made will result in colder water damaging to our warm-water fisheries," cry the bass fishermen, including the West Virginia Bass Federation and the Izaak Walton League. "Three thousand feet of two potential wild trout streams will be inundated," assert the trout fishermen.

"All of the proposed deviations from the present pattern of water releases will be highly detrimental to whitewater recreation downstream from the power station," protest the rafting entrepreneurs and other whitewater sports enthusiasts. "Facilities for picnicking and boat launching and hiking trails will be lost," contend other outdoors people.

"More than 500 acres of prime wildlife habitat will be flooded," complain the naturalists and hunters. "Increasing the lake's water level will cause greater seepage into the nearby mines," fear the local mine owners and operators.

"Adequate studies have not been made to determine what impacts to the lake fishery or hydrology may occur," argue the U. S. Fish and Wildlife people. The West Virginia Department of Natural Resources, through yielding to most of the mitigating proposals made for the protection and preservation of the fish and wildlife resources, expresses concern for the loss of 64 acres (2.7 miles) of warm-water stream, the daily fluctuations of water levels in the reservoir, and the effects of the variations in the flow of water downstream of the power plant. The DNR fears these may be seriously detrimental to the ecology of the area and its recreation potential."

### The Big Gun

One of the most extensive environmental critiques of the project was prepared for the American Rivers Conservation Council (ARCC) by Steve Taylor, a Washington-based engineering consultant with extensive experience in hydrology and related subjects. He holds a masters degree in physics and has worked at Pennsylvania State University on a variety of environmental issues. He is also an

avid white-water enthusiast and an expert kayaker who has run the state's most difficult streams.

His study of the Summersville project formed the bulwark of the ARCC's comments to the Corps at Huntington and has been a major source of information for those who find themselves generally opposed to the project but bereft of the expertise needed to pry the lid off the Corps' "long tunnel" proposal.

Taylor and the ARCC contend that:

— The continuing consideration of the Summersville modification project by the Corps represents "at the very least, an action by the Corps not in conformity with the intent of Congress as expressed in the Wild and Scenic Rivers Act, and is a violation of the spirit, if not the very letter, of the Act itself." Taylor and the ARCC contend that since the Gauley was designated for study under the Rivers Act, was studied by the Park Service — and sections of the river both above and below the dam could be classified as "wild" — are deserving of protection under the "current intent" of Congress.

— "The Corps' evaluation of the values inherent in the three-mile stretch of river below the dam is inadequate.

"The Corps has treated the proposed dewatering of this section of river very cavalierly, even suggesting by some twisted logic that the loss can be considered in terms of a 'gain' in launch time.

"... The loss of a three-mile segment at the beginning of the Upper Gauley cannot be replaced by other boating opportunities elsewhere or by increased opportunities downstream. This is a unique, invaluable and irreplaceable part of the river. The nine rapids in this section, together with the spectacular canyon scenery in which they are located, are not duplicated elsewhere on the Gauley or on any other river. The WRAM analysis conducted in connection with the study did not give adequate weight to the inestimable environmental aesthetic, and recreational values of this segment. The value of this resource cannot be quantified in the manner attempted in the WRAM analysis ...

"In addition to its intrinsic values, this section also has a very practical worth. Its nine class II-III rapids provide an excellent warm-up and practice course to prepare boaters for the dangerous Class V-VI water below. Loss of this "warm-up" stretch could very well increase the danger of running the rapids downstream and indirectly result in injury or even death of whitewater boaters.

"The effort to assign a numerical value to the loss of this segment in order to weigh that loss against other features of the plan is a critical flaw in the analysis which has led to a fundamental misjudgement in the recommendation.

— "The draft study does not analyze a short tunnel 'E' power generation option. This constitutes a significant omission (for which no explanation is given ...

(Please turn to page 2)