



STREAM OF CONSCIOUSNESS

A NEWSLETTER OF THE ALLIANCE FOR ACID RAIN MONITORING (ALLARM)
Edited by Kelly Wark
 December 1990

YOUR DATA... WHAT DOES IT ALL MEAN?

by Christine Reuss

As many of you are aware, this summer was quite an important one for ALLARM. We were awarded non-profit, tax-exempt status. We had our first board meeting. And our organization grew by leaps and bounds. Scientifically, ALLARM made some progress as well. In May, Candie Wilderman and I began the analysis of the 1989 data that many of you faithfully sent to us.

Each year volunteer data are compiled, a primary analysis is done, and individual site results are sent to each monitor with a letter of explanation. Once the data sets are complete, graphs of the 1989 data for each site with four or more data points are generated. Streams are classified: resistant, slightly resistant, vulnerable or endangered; according to mean alkalinity concentration. By scanning the graphs, seasonal patterns of low alkalinity readings in the fall and winter months and high alkalinity readings in the spring and summer were noted. These trends are due to increased amounts of rainfall and snowmelt during the winter and reduced stream flows during the summer. Periods of unseasonal acidity were also reflected in the graphs, seemingly in response to rainfall events.

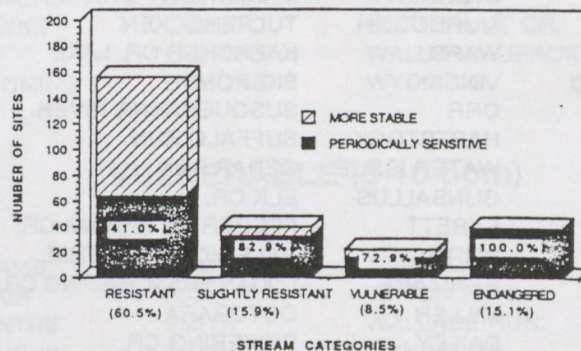
This year 152 analyses went out, but there is always the chance that someone was missed. So if you collected data in 1989 and still have not received your analysis, please contact our office.

In the second phase of the project, all sites with more than 20 sampling points in 1989 were chosen for further analysis. The patterns of alkalinity variation were compared to rainfall data. Over 80% of our streams show a high correlation of low alkalinity and high rainfall events.

In addition, although approximately half of these selected streams are considered "resistant", based on annual average alkalinity concentrations, we found that a surprising number of them undergo periods of increased sensitivity, during which time their alkalinity concentrations put them into

a higher risk category. In fact, 41% of our resistant streams, 83% of our slightly resistant streams and 73% of our vulnerable streams show periodic sensitivity (see the graph below). These "acidic episodes", which are short in duration, are not likely to be detected unless streams are being monitored on a weekly basis. They may, however, have an important impact on the biota of the stream, especially if they occur when life forms are in their more vulnerable stage. Your data have demonstrated that the impact of acid deposition on streams in Pennsylvania has been underestimated, due to a lack of monitoring, and that the intensive monitoring required to reveal that problem can be done most cost-effectively using citizen volunteers.

RESISTANCE CATEGORIES OF 258 STREAMS,
 MONITORED BY ALLARM FROM 1986-89.



Currently the ALLARM staff are documenting factors that may be responsible for determining different patterns of response in different streams. We are in the process of measuring drainage basin area and will soon be doing a general assessment of the geology in each drainage basin. We will then try to determine the most important causative factors in stream response. We hope to report the results to the scientific community and have them published by spring.

I hope this gives you a feel for the kinds of scientific analysis that we are conducting, and shows you how important consistent data is to our analysis. Keep up the good work and contact us if you have questions!♦

STREAM RANKINGS

by Kelly Wark

The following is a list of updated stream rankings for all streams for which we have four or more data points from January 1, 1989 until the present. We now have 237 sites currently being monitored in almost every county in Pennsylvania!!

You will notice that each category is then followed by a category of the same name however with a *. These * categories contain those streams which sometimes drop down to a lower category signifying periodic episodes of sensitivity. That is, if a stream is in the "resistant*" category, its mean alkalinity is greater than 20 ppm, however, its minimum alkalinity is less than 20 ppm. As this is one of the most important findings of our data, we have organized the rankings to reflect the episodes of periodic sensitivity.

The Pennsylvania county map following the stream rankings gives an overview of the sites being monitored; listing the number of sites per county.

RESISTANT (>20 ppm)

COUNTY	MONITOR	STREAM	COUNTY	MONITOR	STREAM
ADAMS	STEELE	ALLOWAY	FRANKLIN	SAUL	RIDLEY CR.
	BREAM	CONEWAGO		GALE	BLACK CR.
	SHUMAN	E. BERLIN LAKE		ADAMS	BRANCH RUN
	PECHER	MIDDLE CREEK		KOCHEN	FALLING SPRING CR.
	HUNT/ADAMS	MUD RUN	HUNTINGDON	SHAHER	STONE CR. EB
	POWERS	MUDDY RUN		BULLINGTON	WARRIOR'S RUN
ALLEGHENY	DOUGALL	PINE CREEK	LANCASTER	SARGEN	CHICKIES CR.
ARMSTRONG	FITZGERALD	CHERRY RUN		SELLERS	COCALICO CR.
	SEDWICK	CROOKED CREEK		DEPOE	DONEGAL
	SEDWICK	ELBOW RUN		MILLER	OCTORARA
	SEDWICK	HORNEY CAMP RUN	LAWRENCE	SHANE	SLIPPERY ROCK CR.
BEAVER	STEVENSON	BRUSH CREEK	LEHIGH	HARING	CEDAR CR.
BEDFORD	WRIGHT	JUNIATA		RINGER	COPLAY CR.
	WRIGHT	SHOBER'S RUN		HARING	JORDAN CR.
	HUGHES	YELLOW CREEK		HARING	LITTLE CEDAR CR.
BERKS	HLAVINKA	KAERCHER CR.		KEIM	SPRING CR.
	SCUDDER	MANATAWNY		HARING	TROUT CR.
	STERNER	MANATAWNY CR.		PETRAKOVICH	TROUT CR.
	MURDOUGH	TULPEHOCKEN	MONTGOMERY	WILKINSON	ABRAMS RUN
	WARD	KAERCHER CR. LAKE		HEFFNER	ABNC POND
BRADFORD	VINESKI	BIG POND		MEIER	PERKIOMEN CR.
	ORR	SUSQUEHANNA RIVER		WOJOTOWICZ	PERKIOMEN CR.
CENTRE	HARTSTOCK	BUFFALO RUN		ASHMEAD	SAND RUN CR.
	WATER ISSUE	CEDAR RUN		RYAN	STONE CR.
	GUNSALLUS	ELK CR.		STILES	TOWAMENCIN
	SYRETT	FEEDER TO SPRING CR.		MILES	WISSAHICKEN
	SMITH	HALF MOON CR. TRIB.	NO'HAMPTON	HALBFOERSTEN	MONACACY CR.
	HERITAGE	LOGAN BRANCH-SPING CR.	NO'UMBERLAND	DESIDERATI	ELYSBURG CR.
CHESTER	MILLER	OCTORARA	PERRY	BECK	BIXLERS RUN
	DAILEY	PICKERING CR.		MYERS-MILLER	L. JUNIATA CR.
	CHARSTON	ROCKY RUN	UNION	WEAVER	PENNS CR.
COLUMBIA	SHOTWELL	CAMPBELL'S RUN	WASHINGTON	ROBERTSON	CANANSBURG
CUMBERLAND	SHEFFER	CONODOGUINET CR.		WEISS	CATFISH CR. TRIB.
	MACKOWSKI	CONODOGUINET		ROBERTSON	DUTCH FORK
	JANKURA	CONODOGUINET		ROBERTSON	LINDEN CR.
	KAUFFMAN	CONODOGUINET		ROBERTSON	MINGO CR.
	BARNHART	YELLOW BREECHES CR.	WYOMING	MCKEON	MESHOPPEN
DAUPHIN	GIFFORD	BEAVER CR.	YORK	JOINER	SPRING VALLEY
	MAHEY	BEAVER CR.		MCKEE	LITTLE CONEWAGO
	PETERS	IRON MINE RUN		SHUMAN	BERMUDIAN CR.
	GIFFORD	SWATARA CR.		SHUMAN	BIG CONEWAGO
DELAWARE	DOUMAN	CHESTER CR.		SHUMAN	CODORUS
	PERNA	DARBY CR.		SHUMAN	RED RUN
	TOWNSEND	ITHAN RUN		SHUMAN	S. BR. CODORUS
	TOWNSEND	LITTLE DARBY CR.		SHUMAN	W. BR. CODORUS

RESISTANT*

COUNTY	MONITOR	STREAM
ADAMS	BREAM KOCH	ALLOWAY LATIMORE CR.
BEDFORD	HUGHES HUGHES	RAYSTOWN LAKE JUNIATA RIVER
BERKS	SCHORY SCHORY BRAUN BRAUN KEIN	ALLEGHENY CR. ANGELICA ANTIETAM BERNHARTS SAUCONY
BLAIR	IRVIN	CANOE CR.
BUCKS	BROADBENT BROADBENT	BROCK CR. RAIN CR.
CAMBRIA	BOLINGER MCDONNELL	DUTCH RUN KANE RUN
CENTRE	WATER ISSUES	SPRING CR.
CHESTER	ECHTERNACH BLACK	BIG ELK LITTLE ELK
CLEARFIELD	GILL	L. CLEARFIELD CR.
DAUPHIN	SHAKNIS	UNNAMED
FRANKLIN	ETCHIS DROPP GALE	ANTIETAM CR. EB CONOCOCHIEAGUE CR. CONOCOCHIEAGUE CR.
FULTON	FULTON BRUMBAUGH	BARNETT'S RUN L. TONOLOWAY CR.
HUNTINGDON	KYLOR	STANDING STONE CR.
JUNIATA	BECK	TUSCARORA CR.
LACKAWANNA	KLINK	GARDNERS CR.
LANCASTER	TROSTLE CHUNKO	MIDDLE CR. RICHARDSON RUN
LEHIGH	HARING KEIM	LEHIGH RIVER LITTLE LEHIGH
LUZERNE	GILLIS	TOBY'S CR.
MONROE	SWEENEY	MCMICHAEL'S CR.
MONTGOMERY	LANDIS	PERKIOMEN CR.
NORTHAMPTON	MCTAGUE	L. MARTINS CR.
NO'UMBERLAND	GENSAR DESIDERATI	PLUM CR. ROAD RUN
PERRY	BROWN BROWN	BIG BUFFALO CR. JACKSON RUN
POTTER	WALIZER KNOWLES	GENESEE RIVER PINE CR.
SUSQUEHANNA	CERYNIK KLINK	MARTIN'S CR. TUNKHANNOCK EB
WARREN	WILLIAMS	BROKENSTRAW
W'MORELAND	KARFELT	MAMMOTH LAKE
YORK	SKVRNA	MOORE'S MT.

COUNTY	MONITOR	STREAM
JEFFERSON	BLOSE BLOSE	CALLEN RUN CLEAR CR.
LEBANON	MURDOUGH	FURNACE CR.
MONROE	SWEENEY	BROADHEAD CR.
NO'UMBERLAND	DESIDERATI	LOGAN RUN
SUSQUEHANNA	SLAVIN	CRESCENT LAKE
VENAGO	RAGON	TWO MILE RUN
YORK	BLAKENSHIP CONRAD	CODORAS EB OTTER CR.

SLIGHTLY RESISTANT*

BLAIR	WOLFE BONTA RICE	CARSON RUN PLUMMERS HOLLOW VAN SOCYOC
CAMERON	CATALANO	NORTH CR.
CUMBERLAND	STUTENROTH	MINT CR.
DAUPHIN	HUBLER CORSON	MANADA CLARK CR.
FULTON	BRUMBAUGH	L. BRUSH CR.
HUNTINGDON	LONG	LAUREL RUN
JEFFERSON	ZELLONIS	SANDY LICK CR.
LACKAWANNA	SCHIELD	ROARING R.
LANCASTER	MINNICH TROSTLE	STEPHNE'S STR. SEGLOCK RUN
MIFFLIN	WARNER	HAVIC CR.
PERRY	SASSAMAN	MORRIS RD CR.
POTTER	KNOWLES KNOWLES	COMMISSIONER RUN NINE MILE RUN
SCHUYKILL	KOCHENOUR SEIGFRIED SEIGFRIED	SINNAMAHONIG PINE CR. RED CR.
SOMERSET	LICHUAR	STONY CR.
WAYNE	LAURITO LAURITO	BUTTERNUT CR. WALLENPAUPACK
WYOMING	DYMOND	WYOMING

VULNERABLE (5-10 ppm)

ADAMS	RUGH	TOM'S CR.
BLAIR	RICE	TIPTON RUN
CENTRE	SMITH	WALLACE RUN
DAUPHIN	SNYDER	FISHING CR.
FAYETTE	HATFIELD	DUNBAR CR.
HUNTINGDON	WARNER BRAUN WARNER SEEGER/ WARNER	DETWEILER RUN SHAVERS CR. STONE CR. EB STONE CR.
MONROE	HELMS	PARADISE CR.

SLIGHTLY RESISTANT (10-20 ppm)

ADAMS	SLONAKER HARDMAN FETTERS ADAMS	CONEWAGE OPPOSSOM CR. TRIB. OPPOSSOM CR. SWAMP CR.
BLAIR	RICE	BIG FILL
CAMBRIA	POWERS	CHEST CR.
CENTRE	NEALEN	BALD EAGLE CR.
CUMBERLAND	BARNHART	MINT CR.
DAUPHIN	DOERFLER	FISHING CR.
JEFFERSON	BLOSE	CLEAR RIVER

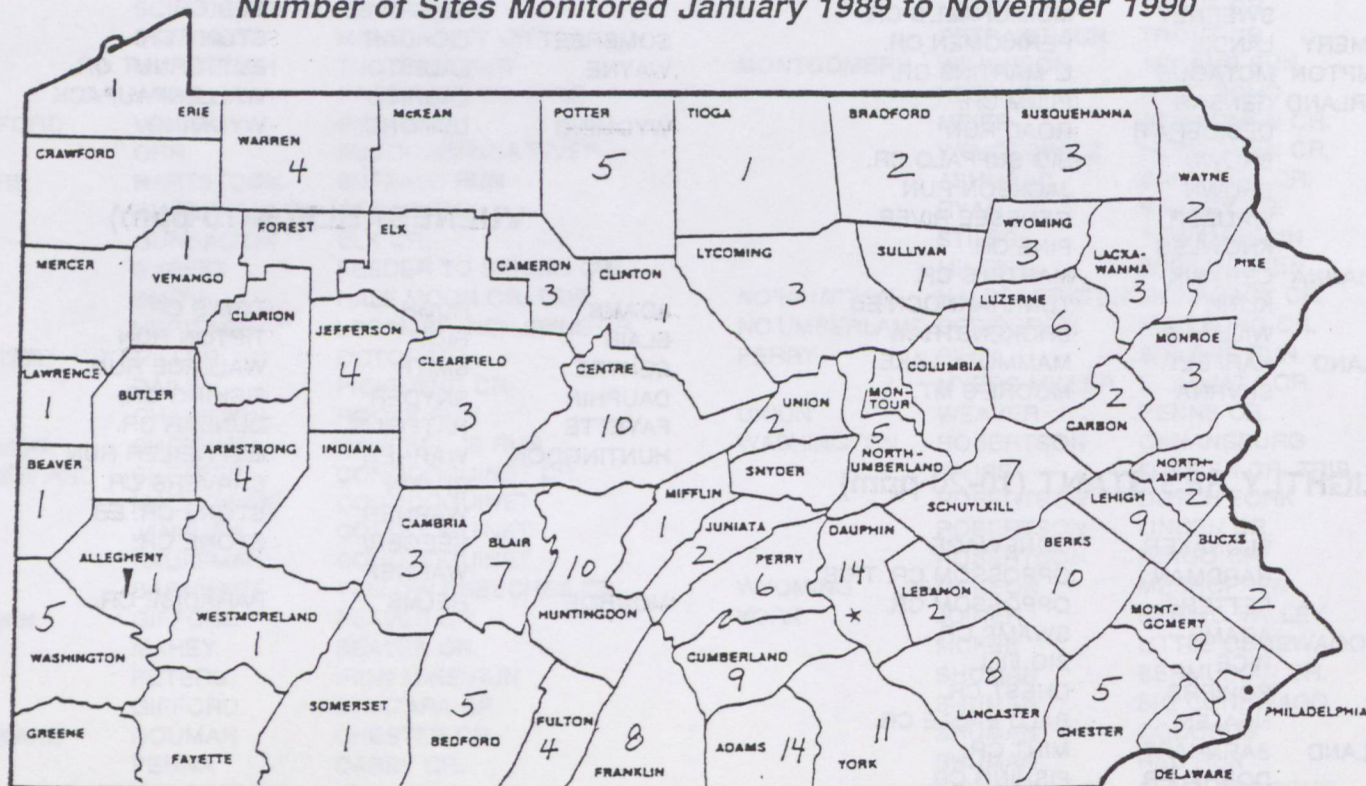
VULNERABLE*

COUNTY	MONITOR	STREAM
ADAMS	DEPEW	L. MARSH CR.
BLAIR	WOLFEE	BOB'S CR.
CAMERON	CATALANO	DRIFTWOOD CR.
	PUGH	WEST CR.
CLINTON	WROBLEWSKI	GREEN RUN
DAUPHIN	LENKER	MANADA CR.
FRANKLIN	DROPP	BIRCH RUN
	DROPP	CARBAUGH RUN
FULTON	BRUMBAUGH	L. AUGHWICK CR.
HUNTINGDON	WARNER	STONE CR.
	BULLINGTON	WARRIOR'S RUN TRIB.
LACKAWANNA	LAURITO	ROARING RUN
LUZERNE	LENNOX	WALTON'S RUN
LYCOMING	SCHREFFLER	LYCOMING
	WORTH	LARRY'S CR.
SCHUYLKILL	DEMARKIS	L. SCHUYLKILL
	HEPLER	MAHANTONGO
	KRAMMES	LOWER SWATARA
	MILLER	BEAR CR.
	TURNER	LOWER L. SWATARA
WARREN	MCKOUN	HEMLOCK RUN

ENDANGERED (<5 ppm)

COUNTY	MONITOR	STREAM
CARBON	SHECKLER	BUCKWHEAT
	SHECKLER	HUNTER'S CR.
CENTRE	VINT-JOHANSEN	GALBRAITH RUN
CLEARFIELD	VRANA	ROGUES HARBOR RUN
	WALSH	TROUT RUN
COLUMBIA	FREESTONE	FISHING CR.
	FLY	KINGS GAP RUN
CUMBERLAND	KINGS GAP	MANADA CR.
DAUPHIN	SNYDER	RATTLING CR. MB
	HAND	RATTLING CR. WB
	HAND	
	KELLY-	
	KRISTOFF	STONE CR.
JUNIATA	BECK	LAURAL RIVER
LEBANON	DIEBERT	INDIANTOWN RUN
LUZERNE	KERN	THREE SPRING BROOK
	HARING	BEAR CR.
	HARING	MEADOW RUN
	KOCH	OLEY
LYCOMING	MCMANUS	HOOGLAND RUN
NO'UMBERLAND	DESIDERATI	SHAMOKIN CR.
PERRY	JACOBY-	
	MORRIS	LAUREL RUN
SULLIVAN	WEAVER	KETTLE CR.
TIOGA	MACHANER	TIOGA R.
UNION	PARKS	HICKERNELL SPRING
WARREN	FINGER	FARNSWORTH BR.
	FINGER	TIONESTA CR. WB
WYOMING	SEDESKI	BOWMAN'S CR. ♦

Number of Sites Monitored January 1989 to November 1990



THE CLEAN AIR ACT: A NEW ENVIRONMENTAL DECADE OR JUST TALK?

by Carmen Irizarry

After continuous demands for the enhancement of the laws which are designed to stop the depletion of the environment, our voices are finally being heard on Capitol Hill. October 22, after years of dispute and disagreement, the House of Representatives and the Senate conference committee agreed on a series of amendments needed to be implemented to the Clean Air Act. In early November President Bush signed the legislation into law.

It was nine years ago when Senator George J. Mitchell, a Democrat from Maine, brought to the legislators' attention the need for restructuring the twenty year old Clean Air Act. Senator Mitchell felt it overlooked the acid rain issue as well as being weak in solving other environmental problems. His efforts were initially unsuccessful because of different regional interests, disputes over the cost of new regulations and a possible increase in industrial unemployment. Also, the Reagan administration did not make environmental concerns a priority.

In July of 1989, President George Bush presented a proposal to Congress. This proposal, was aimed at combatting acid rain, toxic air pollutants, urban smog, and motor vehicle efficiency. It then took fifteen months for the legislators to agree on environmental law enhancement and its implementation. The delay was due to disputes over the cost of the implementation and the lobbying done by industrial companies. After struggling they have come up with the following plans for each issue.

ACID RAIN: This is the first time that legislators recognized it as a national environmental concern; thus, this is the first federal regulation aimed at curbing acid rain.

X By 2000, and during each successive year, sulfur dioxide emissions will be cut by 10 million tons.

X Half of this reduction will occur by January 1, 1995 when the 111 sulfur emitting electric plants will be required to abide by stricter standards.

X 18 months after Congress has approved the bill, the utilities will have to limit their nitrogen oxide emissions as stated in order to cut 2 to 4 million tons annually.

TOXIC AIR POLLUTANTS: Although the old Clean Air Act mentioned this problem, it was incomplete and weakly enforced.

X The E.P.A will be required to regulate standards of another 189 high risk toxic pollutants emitted by chemical plants, oil refineries, steel plants, and mills.

X Industries with the highest pollutant emission rates will have to install the best possible pollutant control equipment between 1995 and 2003 in order to reduce 90% of the emissions by 2003.

X After the reduction goal of 90% has been achieved, the EPA will rearrange standards in order to provide a marginal safety of 1-in-10,000 cancer risk to the most exposed persons nearby.

X Coke ovens would get an extension in meeting the standards, if they meet some of them in the interim.

X An independent agency has been created- the Chemical Safety Board. It will investigate chemical accidents. It will also demand from the industrial plants formal safety reviews be done which will then be made available to the public.

URBAN SMOG: Due to the differences in amount of smog, the Act has divided into four categories areas of ozone non-attainment so individual standards can be set according to the areas' intensity. The four categories are marginal, moderate, serious, and extreme. All but the marginal areas will have to reduce smog by 15% within 6 years.

MOTOR VEHICLES: Although there are some who feel that this section of the Act is weak, it has been improved from the standards stated thirteen years ago because it combats the problem in many different ways.

X Starting with the model of 1994, and then all cars in 1996, the tailpipe emissions of hydrocarbons and nitrogen oxides will be reduced by 35%, and 60% in all new cars. Southern California will have stricter standards.

X By 1998, all new cars must have pollution control equipment that lasts 10 years or 100,000 miles.

X Oil companies will have to offer new kinds of gasoline which burn more cleanly beginning in 1992.

(continued on page 7)

ALLARM NEWS & NOTES

BEYOND 200!!

by Jennifer Litton

ALLARM has been growing at a rapid pace and is showing no signs of slowing down! Since January 1990, we have issued 151 new memberships. Much of this great response has been due to the airing in April 1990 of the public TV-WQED produced Earth Day Special, "Saving Pennsylvania By the Grass Roots", which featured ALLARM.

Our data are getting even more solid thanks to the continued growth. We now have 237 sites which have been sampled at least four times since January 1, 1989.

Way to go... Keep monitoring!!◆

A DAY IN THE WOODS

by John Meckley

With a grass roots organization like ours, what can be better than providing volunteers with an opportunity to come together to talk about our program, to share experiences and to rededicate ourselves to the environment? ALLARM did that recently with their workshop at Dickinson College. The 1990 Fall Workshop took place on Saturday, Oct. 6 between 10a.m. and 2p.m. More than 30 volunteers traveled to Carlisle to participate in the workshop presented by the ALLARM staff.

The workshop began with introductions. A special guest in attendance was Sandy Moore from TV Channel 21. She and a cameraman spent the day filming our group for that evening's local news. A brief business meeting was held to discuss some of the on going projects of ALLARM and then it was off for some hands on experience!

In the field, each volunteer used his testing kit to test two sites in the area; Yellow Breeches Creek, a well-buffered limestone stream, and King's Gap Run, an acidified headwater stream. At each site, volunteers could demonstrate their methods of testing, share ideas, and experiment with suggestions from others. The group paused between sites for a picnic lunch and took advantage of the time to renew old friendships and make some new ones! With the testing complete the group returned to Dickinson with another successful workshop behind them. Our thanks to all who turned out. We hope to see even more new faces at the workshop in the spring!◆

MATT'S HELPFUL HINTS

by Matt Franke

→ Don't forget to swirl your sample well after adding every drop of Reagent #2.

→ Be sure your sample turns pink or red when calculating alkalinity. Any shade of pink is sufficient, it doesn't have to be red, but it should remain pink or red for 25 seconds. A good way to tell is to hold a sheet of white paper behind it.

→ If your results are less than 25ppm using the 10ml test, then you should switch to using a 25ml sample. Don't forget which formula to use:

10ml: (number of drops - 1) x 5 = ____ ppm

25ml: (number of drops - 1) x 2 = ____ ppm

→ When measuring water samples for testing, the level of the water in the middle of the beaker is the level that needs to be matched with the 10ml or 25ml mark on the beaker itself. Measurements using the water that "crawls up" the sides of the beaker are inaccurate.

→ If your test kit chemicals are more than one year old, please send the bottles back to our office for refills.

→ Please remember to leave the pH strips in the sample for 10 full minutes. Less time yields inaccurate results. Maybe take along an extra small container and test pH while doing the alkalinity test.

→ Everything you ever needed to know about monitoring pH and alkalinity for ALLARM - including how we use your data - has now been compiled into a monitoring manual! The manual includes answers to the most common questions we receive, as well as troubleshooting tips for measuring pH and alkalinity. If you'd like a copy, check the appropriate space on the request form on page 7.◆

DONATION CHALLENGE

The allarm has been sounded!! Over the past year, our active membership has doubled in size, something for which we are both proud and grateful. However our income has not kept pace. Our old "hand-me-down" computer, which has served us so well, is "terminally ill" and needs to be replaced within the next few months. Incredibly, a generous volunteer has presented ALLARM with a wonderful fundraising challenge: she will match all the money that we can raise through donations within the next six months up to \$1000!! That means your \$20 is really \$40! Would you consider making a donation to ALLARM? All donations are fully tax deductible. Please indicate the amount of your donation on the request form on page 7. TOGETHER WE CAN MAKE A DIFFERENCE!!◆

VOLUNTEER SPOTLIGHT

by Jennifer Litton

In October 1987, the Pine Creek Headwaters Protection Group (PCHPG) was founded to protect the 985 square miles that comprises the Pine Creek watershed in Tioga County, Pennsylvania. By Dec. 6, 1989, the PCHPG was awarded first place in the "Take Pride in Pennsylvania" competition. The hard work continued and PCHPG now has some 17,000 members.

During Spring 1990 the coordinator of PCHPG's Project Water Watch, Jeff Swingholm, began to focus on the growing problem of acid rain in the highly recreational Pine Creek watershed. Acid rain poses a particular threat to Pine Creek because of the minimal buffering capacity of the geological area.

In the summer of 1990, ALLARM staff members met with Jeff Swingholm and other PCHPG members to discuss and specify a plan for stream monitoring in the Pine Creek watershed. There are now 17 monitors sampling 33 sites. Each monitor tests weekly: pH, alkalinity, air/stream temperature, turbidity, and biological life. Monthly tests include nitrates, phosphates, sulfur, heavy metals, and dissolved oxygen.

ALLARM is very excited to be a part of PCHPG's new endeavor. We wish them the best of luck!◆

CLEAN AIR ACT (continued from page 5)

OZONE DEPLETION:

✕ Chlorofluorocarbons and carbon tetrachloride will be phased out by the 1990's and outlawed by January 1, 2000. Also methylchloroform will be outlawed by January 1, 2002. Hydrochlorofluorocarbons will be outlawed for aerosol cans and insulating material by January 1, 1994 and its production ended in 2030.

✕ New discarding and disposal rules for ozone-depleting chemicals recovered from air conditioners, refrigerator, and other equipment.

WHAT THIS MEANS FOR ALLARM:

First, we should congratulate ourselves! This Act was passed because of overwhelming grassroots support. Without the knowledge and concerns of people like ourselves, our government would not be forced to be knowledgeable or concerned. Many showed very vocal support in contacting their congressmen and their hard work will pay off! But perhaps more importantly, we need to realize that our work is not finished. We have an unprecedented opportunity to scientifically assess the results of these emissions controls because we have the baseline data with which to compare new data. Now more than ever we need accurate, consistent data to document the results. **GOOD WORK!! KEEP IT UP!!◆**

ALLARM REQUEST FORM

ALLARM T-SHIRTS - A fun and comfortable way to spread the word.

ALLARM t-shirts are white with kelly green logo (see the front page), 100% cotton. Choose from small, medium, large, and extra large. Fill out the form below and return it to the ALLARM office with \$10.00 per shirt.◆

☐ Please send me _____ t-shirts. T-shirt sizes _____ S, _____ M, _____ L, _____ XL

DONATIONS

☐ I would like to make a donation to ALLARM in the amount listed below.

_____ \$50, _____ \$30, _____ \$20, _____ \$10, _____ other(\$ _____)

MONITORING MANUAL

☐ Please send me the new ALLARM monitoring manual.

NAME _____

ADDRESS _____

PHONE NUMBER () _____



✂ Clip and Mail ✂

did you know...

by Kelly Wark

- ✓ Local studies on the Harrisburg and Chambersburg water supplies have shown statistically significant acidification over the past 30 years. Acid drinking water can dissolve higher concentrations of toxic metals such as copper and lead from household pipes.
- ✓ Pennsylvania is also the second or third largest emitter of sulfur dioxide of any state in the country.
- ✓ Four-fifths of sulfur dioxide emissions in the Commonwealth are produced by steam electric generating facilities within the Commonwealth.
- ✓ According to the American Lung Association, more than one and a quarter million people in Pennsylvania fall within the risk category of suffering health damage from the oxides of nitrogen and sulfur.

✓ Pennsylvania, through the Susquehanna River, provides 50% of the fresh water to the Chesapeake Bay.

want to know more...

compiled by Jennifer Litton

- ✓ The Amicus Journal. "Clean Air's Dirt". Susan Henrikson. Summer '90, Vol. 12, No. 3, p. 11.
- ✓ Scientific American. "Energy From Fossil Fuels". William Fulkerson, Roddie Judkins, and Manoj Sanghri. Sept. '90, Vol. 263, No. 3. p. 129-135.
- ✓ American Biology Teacher. "Acid Rain, pH, and Acidity: A Common Misinterpretation". A.B.D. Clark and R.E. Thompson. Jan. '89, Vol. 51, p. 11-13.
- ✓ Environment. "Pouring Forth On Acid Rain". March '90, Vol. 32, p.23.

MEET THE STAFF

by Kelly Wark

Well, it's the beginning of a new school year and that means some new members on the ALLARM staff. This year our Student Director is a senior, Christine Reuss. She's been busy at Dickinson with a double major in International Studies and East Asian Studies, and an environmental certificate. With ALLARM since May 1990, Christine worked this summer with another new staff member, Jennifer Litton. Jennifer did quite a bit of administrative work this summer and many of you may know her name. She'll be graduating in '92 with a Sociology major and an environmental certificate. John Meckely has been with ALLARM for two years now. He's also an International Studies major. John, class of '92, was in charge of organizing the workshop this year. And yet our third International Studies major, Kelly Wark starts her first year with ALLARM as our newsletter editor and will be graduating in the spring. Matt Franke is our last staff member. He's a Biology major with an environmental certificate. Matt, class of '93, started with ALLARM as a volunteer and is now in charge of quality control. We also have two special volunteers, Kate Kauffman and Cecilia Jankura. They not only do some special monitoring, but also help us with office management and data entry. Just a little note to those of you who knew our previous student coordinator, Resa Dimino. She's now in Washington D.C. working for Environmental Action. We wish her well! We'd also like to thank Marcus Sheffer for his invaluable advice regarding the newsletter and his work on the layout! This June, ALLARM elected its first board of directors, who will help ALLARM to make policy decisions and determine focus. They are Edith Brown, Marcus Sheffer, Candie Wilderman, Jerry Sedwick, Anne Gale, Ralph Hepler, Martin Haring, Kate Kauffman, Pat Braught, John Childe, John Dropp, Cecilia Jankura, Lorna Joiner, and Dick Robertson. And of course we wouldn't want to forget our fearless leader, Candie Wilderman. It's going to be great year for ALLARM!!!!◆

ALLIANCE FOR ACID RAIN MONITORING

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Non-Profit Organization

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