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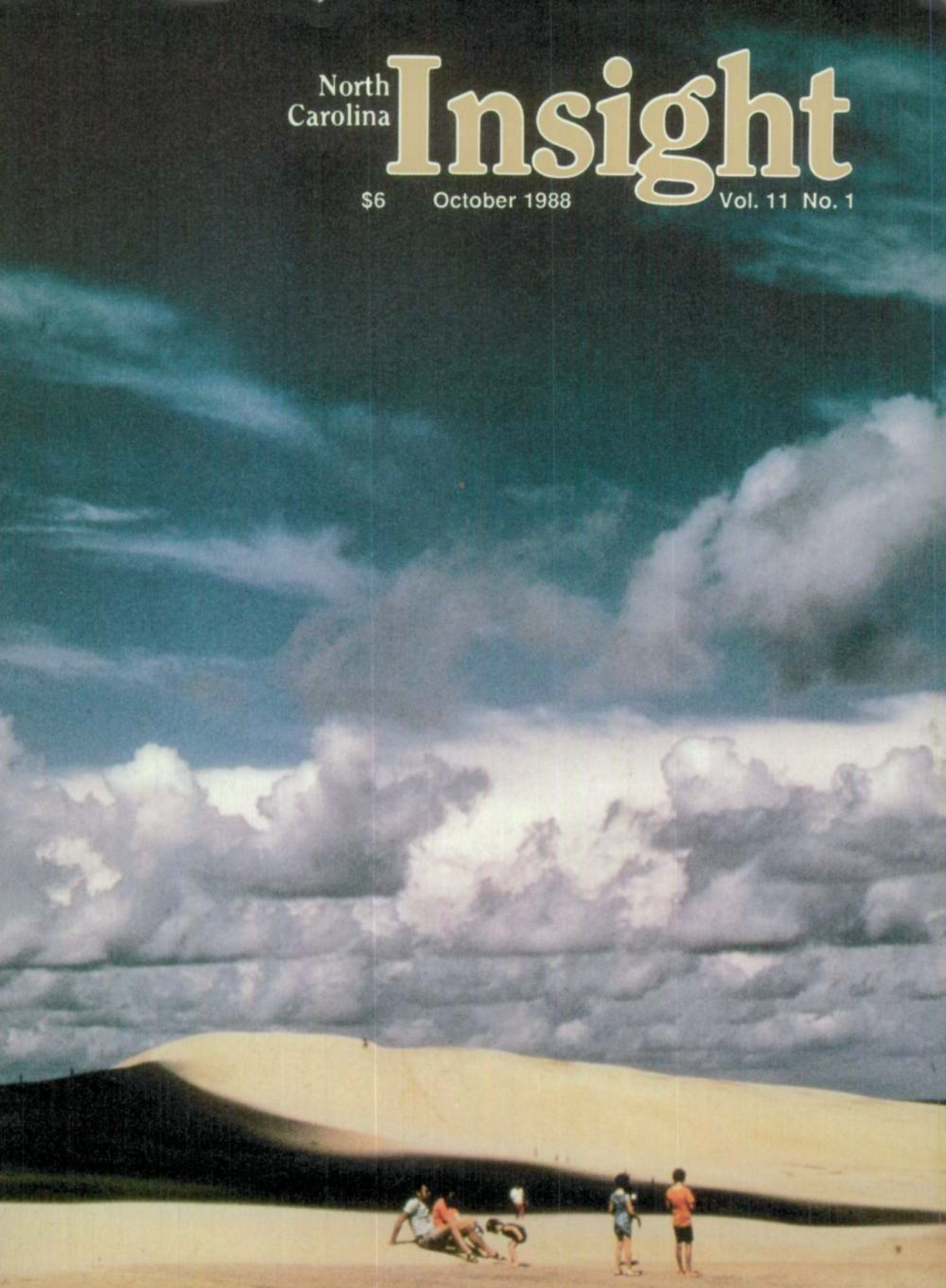

State of the Environment: Time to Keep Tabs?

N.C. Center for Public Policy Research

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A nonprofit, non-partisan organization, the Center was formed in 1977 by a diverse group of private citizens "for the purpose of gathering, analyzing and disseminating information concerning North Carolina's institutions of government." It is guided by a self-electing Board of Directors and has individual and corporate members across the state.

Center projects include the issuance of special reports on major policy questions; the publication of a quarterly magazine called *North Carolina Insight;* the production of a symposium or seminar each year; and the regular participation of members of the staff and the Board in public affairs programs around the state. An attempt is made in the various projects undertaken by the Center to synthesize the integrity of scholarly research with the readability of good journalism. Each Center publication represents an effort to amplify conflicting views on the subject under study and to reach conclusions based on sound rationalization of these competing ideas. Whenever possible, Center publications advance recommendations for changes in governmental policies and practices that would seem, based on our research, to hold promise for the improvement of government service to the people of North Carolina.

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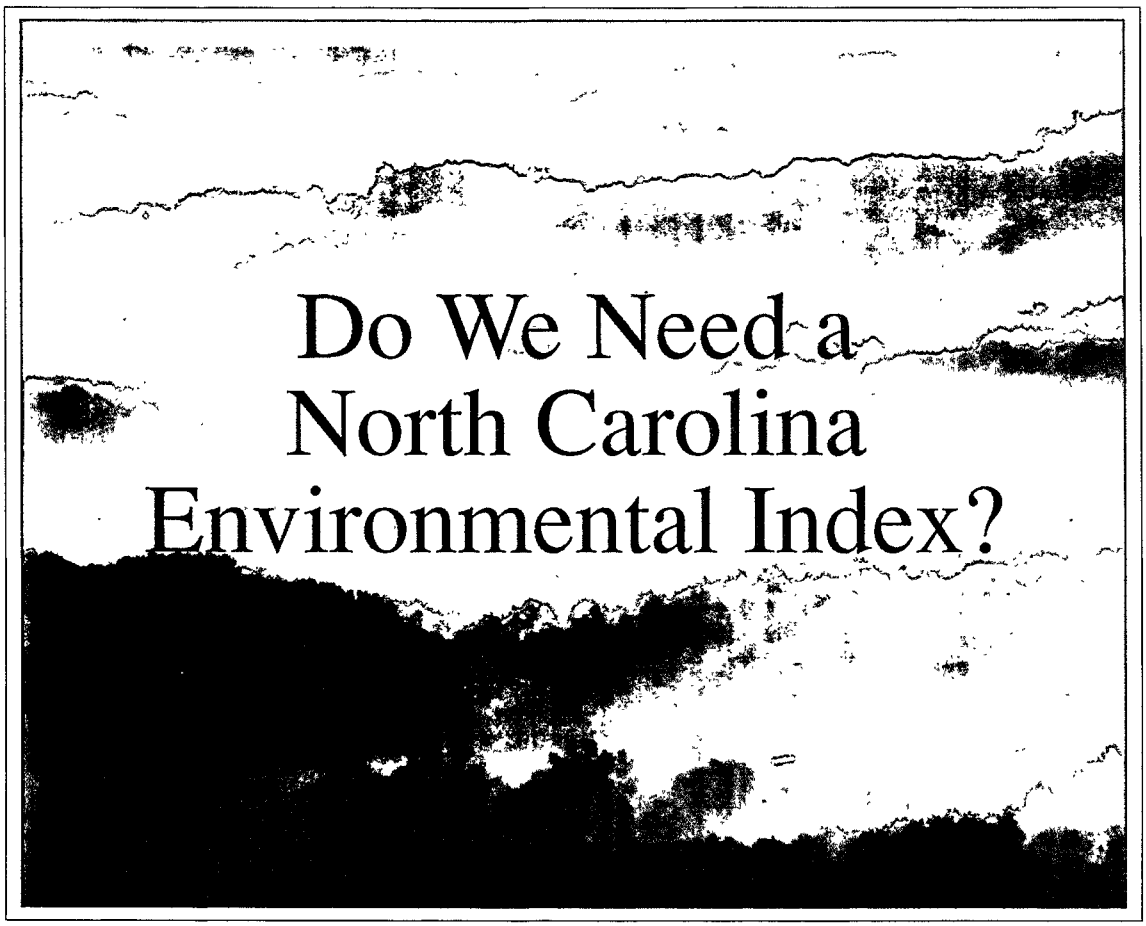
Cover: Jockeys Ridge State Park, photo from Division of Parks and Recreation, N.C. Department of Natural Resources and Community Development.

North Carolina **Insight**

Vol. 11, No. 1 October 1988

FEATURES

DEPARTMENTS



Robert Llewellyn

by Bill Finger

How do we know what the state of North Carolina's environment is? And how do we know whether North Carolina's environment is getting better or getting worse?

The fact is, we don't know as much as we need to know about this most valuable natural resource. We know much more about such other issues as the state of the state's economy, or the condition of our corrections system, or the quality of our schools. And we now know much more about the condition of our children, with the creation by the N.C. Child Advocacy Institute of a North Carolina Children's Index. That index measures the quality of life for the state's youngsters and will report in some detail whether their circumstances in six categories are improving or declining.

Why not a similar measurement for the state of North Carolina's environment? Why not a regular measurement of the quality of the air we breathe, of the land we live and farm on, and of the water we drink? Could such a North Carolina Environmental Index be created? And what should it measure? How would it work? The N.C. Center for Public Policy Research has pondered these questions, and in the following pages North Carolina Insight presents some possible answers about creating a state Environmental Index.

"Something will have gone out of us as a people if we ever let the remaining wilderness be destroyed . . . if we pollute the last clean air and dirty the last clean streams and push our paved roads through the last of the silence."

WALLACE STEGNER, NOVELIST

Consider these terms: Total suspended particulates. Acres disturbed. Water use impairment. Sound familiar? Unless you're a scientist or environmentalist, chances are these terms will make your eyes glaze over. Now how about these: Average hourly manufacturing wage. The unemployment rate. Rate of inflation. If you're old enough to cash a paycheck, chances are you know something about what those numbers connote.

But this is more than a word game. Studying and reporting on the economy has received so much attention over the years that standard indicators like unemployment rates have taken on a familiar meaning to nearly everyone. Keeping tabs on the environment, on the other hand, requires a new set of knowledge. The data, the measurements, and even the vocabulary available to describe changes in the environment and to denote improvement or degradation are known only to a relative few, despite the growing interest in our environment.

Environmental measurements may never become as familiar terms as, say, the average hourly wage or the U.S. trade deficit. But even now, to people with severe respiratory problems in Los Angeles or Charlotte, the air quality index in those cities means as much as the hourly wage does. If water quality or water supplies in Greensboro or Winston-Salem became threatened as seriously as has the air in southern California, state officials likely would come up with some kind of water quality index that the general public would understand, too.

For years, the N.C. Employment Security Commission has published major economic indicators monthly, quarterly, and yearly. But the state has not chosen to publish regular indicators on North Carolina's most important environmental resources. Could the state develop such a series of indicators? How difficult would it be, and how expensive? What would those indicators be? What criteria could be used? What kind of format could present this data in an easy-to-understand fashion?

Such questions arise again and again to those in and out of government whose job it is to analyze the complicated and fast-breaking news concerning water, air, land, and other natural resources in North Carolina. Is our water in better shape today than it was in 1973 when substantial federal dollars began coming into North Carolina to build new wastewater treatment plants under the federal Clean Water Act? Is the air in North Carolina cleaner or dirtier than it was 10 years ago? How much arable soil has the state lost as rural land has been transformed into shopping centers, residential subdivisions, roads, and commercial property—and what would that data tell us about our land resources?

To analyze environmental policies, policymakers need to know the stress points on the environment and the causes of those stresses. Daily news clippings *suggest the environment in North Carolina is getting worse*—algae blooms depleting oxygen in the Chowan River and in estuaries, dying trees on Mt. Mitchell linked to acid deposition, and stricter auto emission controls mandated in Raleigh and Charlotte because of air quality measurements. On the other hand, many of the reports filed by state offices with the federal Environmental Protection Agency *indicate that water and air quality in North Carolina are improving.*

Where does the truth lie? It might well lie in the regular *publication* and *analysis* of measurable data about North Carolina air, land, water, and other resources.

Publishing environmental indicators is hardly a new idea. In 1973, the Department of Natural and Economic Resources (the forerunner to the current Department of Natural Resources and Community Development, or NRCD) released a 16-page booklet called "North Carolina Environmental Indicators." It included brief descriptions of such resources as air, water, solid wastes, soil, forest land, coastal wetlands, shellfish waters, and wildlife.

Bill Finger was editor of North Carolina Insight *from 1979-1988. He now is a Raleigh freelance writer and consultant. This article developed during the N.C. Center's 18-month review of environmental policies, reported in the March 1988 issue of* Insight.

Eight years later, in 1981, NRCD published a second such report, called "North Carolina's Environment." This 40-page analysis had four main sections, covering land, water, air, and wildlife species. These reports, produced under two different governors, were extremely helpful—as far as they went. But it was clear that more data were needed to paint a comprehensive picture of the state of North Carolina's environment.

In 1983, the Commission on the Future of North Carolina called for better environmental data reporting. "Beginning immediately, the state should establish an environmental indicators program that provides regular and systematic monitoring information on changes in the quantities and qualities of environmental conditions," the report recommended.[1] NRCD did not respond to this recommendation in any formal way until the legislature forced the issue with a new state law.

In 1985, the General Assembly adopted a little-noticed special provision in a budget bill that required the Secretary of Natural Resources and Community Development to report "on the state of the environment to the General Assembly no later than January 1 of each odd-numbered year beginning on January 1, 1987."[2] The law included seven specific areas to be covered, including "trends in the quality and use of North Carolina's air and water resources." Unfortunately for NRCD, the legislature did not appropriate special funds to pay for this special provision, and NRCD was forced to find the money within its own budget to pay for producing the first report.[3]

NRCD responded to the legislation by publishing a 60-page glossy booklet called *State of the Environment Report-1987.* It contains chapters on water resources, hazardous and radioactive waste management, general environmental management issues, coastal and marine resources, air, forest land, agriculture, mining, and parks, natural areas, and wildlife. In many ways, the report does an excellent job of explaining the current state of the environment and linking management efforts with the data. "That's the best government report I've ever seen," said one long-time analyst of state government.

However, in two important ways, the report does not provide essential environmental indicators. First, the report emphasizes *managing* the environment rather than indicators on the quality or quantity of the environmental resources themselves. Such a management emphasis, which the legislature in fact *required,* results in a dense, complicated document, not an easy-to-remember set of indicators. Second, the report does not include some data that is needed because the data either are not collected, or are not readily available.

While useful for its description of management practices, such a report does not fulfill the goals set forth by the Southern Growth Policies Board in a recent report on "Education, Environment, and Culture." "By 1992, each southern state should have an integrated, computerized, geographically based environmental information system to track a wide range of water quality, air quality, wildlife, waste, and land use indicators," the report recommends. "The public sector has a strong comparative advantage over the private sector in collecting and disseminating information. This role should be greatly expanded to provide high quality environmental information to a broad array of public and private sector clients."[4]

An annual North Carolina Environmental Index —actually a series of indices collectively pub-

—continued on page 7

"Too often in the past, environmentalists have pursued causes they believe in passionately with a certain arrogance and self-righteousness, which may actually have hurt their cause.

By the same token, many major economic players have tended to view environmentalists as wooly-headed tree-huggers.

Neither of these extreme positions is constructive and both ignore the deep interrelationship between our economic and environmental well-being. But fortunately, I believe we are seeing progress on both sides."

DAVID ROCKEFELLER

How Does North Carolina Rank in Managing the Environment?

If the state legislature were to require a new Environmental Index for North Carolina (see recommendations on page 26) or if the Department of Natural Resources and Community Development were to initiate it, national indices offer both tips and pitfalls. In the last two years, three national studies have evaluated trends in the environment. One ranked the 50 states with scores on six specific issues, leading to a cumulative ranking. A second index provided a more subjective look at six other environmental concerns, in the context of its 20-year history. The third examined national trends concerning pollution control issues, emphasizing such national issues as the Superfund.

Collectively, these three reports suggest national trends but lack the kind of detailed state-level information discussed in the sections of this article on air, land, and water. While the state-level information in the three reports is somewhat sketchy, the information on states, including some rankings, does stimulate a vigorous debate over the validity of various measurement tools.

For the last two years, The Fund for Renewable Energy and the Environment (FREE) has produced the nation's most detailed environmental report in terms of state-by-state rankings, called *The State of the States*.[1] This report was an outgrowth of Solar Action, an organization formed in 1978 to promote the celebration of "Sun Day" around the world. The group expanded its mission in 1986, as the report says, "to provide new environmental tools for state and local decisionmakers in a continuing effort to build a sustainable society."

In the 1988 report, North Carolina ranked ninth among the 50 states in its overall environmental record, with a score of 40 out of a possible 60 points (a possible 10 points for each of six categories). The 1988 report examined data and compiled state scores concerning surface water protection, reducing pesticide contamination, land use planning, eliminating indoor pollution, highway safety, and energy pollution control. Among southern states, North Carolina trailed only Florida (eighth, 41 points). Massachusetts and Wisconsin tied for first (45 points); Wyoming was last (15 points).

The 1987 FREE report, its first, examined six different topics: air pollution reduction, soil conservation, solid waste and recycling, hazardous waste management, groundwater protection, and renewable energy/conservation. In those rankings, made a year earlier but on different topics, North Carolina ranked higher—seventh—than any other southern state.

The FREE rankings do not distinguish between the quality of the environment itself and a state's efforts to manage that environment. Laws, permits, and actual measurements of the environment are ranked and given numerical scores, then added together for a total score within each category, but the emphasis remains on what programs are in place—not on how well they work or what the environmental quality is. Such a mixing of factors can be misleading. Another problem can result from basing the study on available national and state data rather than digging into information that is comparable from state to state. The surface water category illustrates such problems.

The 1988 report ranked North Carolina the best state in the nation in surface water—the only state with a perfect score of 10 in that category. Using data from the Environmental Protection Agency (EPA), the report showed North Carolina to have only 12 permits on backlog. But according to the data compiled on a monthly basis by the N.C. Department of Natural Resources and Community Development, in January 1988, 577 requests for a new or renewal permit were on backlog.[2]

Mixing various measurements raises other kinds of questions. "While North Carolina may appear to have a great program on paper, our rankings do not reflect the problems that we face due to inadequate monitoring and enforcement of those policies," says Mary Beth Edelman, presi-

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dent of the Conservation Council of North Carolina. Bill Holman, the state's most prominent environmental lobbyist, adds: "North Carolina has the tools, but the state needs to make sure those tools are used."

Don Follmer, the NRCD director of information, says, however, that the ranking on surface water reflects more than tools. "It shows we are doing a good job. But we can do better."

A second major report issued in 1988 is the "Environmental Quality Index" published by the National Wildlife Federation in its magazine, *National Wildlife*.[3] This was the 20th year the group published its index. The magazine calls its index "a subjective analysis of the state of the nation's natural resources." The editors and the National Wildlife Federation staff consult with government experts, academic specialists, and others before making "judgments of resource trends," as the report explains. The latest index reviewed trends over its 20-year life and then assessed seven specific areas: wildlife, air, water, energy, forests, soil, and quality of life. It used a gauge with three general levels—worse, same, and better. In 1988, all seven categories were in the "same" middle ground, but water and wildlife nearly fell into the "worse" range nationally.

The review of the 20 years points out how much the science of environmental indices has changed. "It is true that not one of the [group's] annual report cards indicated an improvement in the quality of the country's water or the prospects for its wildlife," summarizes the introduction. But, it points out, "Many of our most befouled lakes and rivers are thriving with life again, even Lake Erie, once pronounced clinically dead."

The report goes on to explain why the group's indices seem to say paradoxically, "Things have been getting better and worse at the same time. The reality is that we did not know, 20 years ago, how to measure the problems we faced; and every time we devised a better set of measuring tools, we found the problems to be greater than we had thought." The emphasis of the Environmental Quality Index varies from year to year. The 1987 report, for example, was called "A Nation Troubled By Toxics," even though it reviewed the same seven categories as done in 1988.[4]

The third major study came from The Conservation Foundation, a Washington-based environmental research organization founded in 1948.[5] Called *State of the Environment: A View Toward the Nineties*, it follows similar reports made in 1982 and 1984. The 1987 version concentrates on pollution-control efforts at the national level. "The report is a bold attempt at an overall assessment of progress in pollution control, complete with quantification wherever possible," says *State Policy Reports*. "The conclusion is that a relatively good job has been done in dealing with easily identified pollutants in certain media—particularly air and water—but that new challenges lie ahead in dealing with multi-media problems."[6]

The report includes a supplement with some limited state-by-state data. The most interesting figure is the per capita spending by state government on natural resources, parks, and recreation. Using fiscal year 1984 figures, the report ranks North Carolina only 32nd among the 50 states, $28 per capita per year. (This figure should not be confused with state per capita spending on state parks alone. See article on parks, page 30, for more). Businesses in North Carolina spent the equivalent of $42 per capita for pollution control in 1983, compared to a nationwide average of $51 per capita, the report found.

In addition to these three major recent reports, state officials considering how to structure an environmental index could refer to various other sources. The Conservation Foundation publishes many valuable reference reports. One 1983 study, *Environmental Regulation of Industrial Plant Siting*, ranked the 50 states on an environmental "effort index."[7] This index measured such factors as the voting record of the states' congressional delegations on environmental and energy issues, the availability of an income tax checkoff for wildlife and fisheries, per capita environmental quality control expenditures, EPA-authorized state programs for hazardous waste controls, and land use indicators. In this report, North Carolina ranked 29th among the 50 states.

Until 1981, the federal government released a valuable annual report on the state of the country's environment. The Council on Environmental Quality, under the Office of the President, released these annual reports. During the Reagan administration, this report has not been pub-

— continued on page 8

lished in an Index—is needed to complement the biennial report prescribed by the legislature. Such a review of indicators could begin with air, land, and water—the basic environmental resources—and could be expanded to such other areas as wildlife, parks and recreation, wastes (hazardous, radioactive, and solid waste materials), and other issues covered in several recent national studies (see sidebar on page 5 for more).

The index should have at least three components. First, it should contain *quantitative measurements* of the environmental resource itself. Second, the index should present *data over a span of years,* to indicate trends in environmental quality over time. Finally, for the data to make sense, the index should contain an *analysis of each indicator showing improvement or degradation* as well as a brief narrative discussion of major environmental management issues. For the index to have the most utility, it should be available on an *annual* basis, use reliable data sources, and be simple enough to understand. Several recent indices have examined closely the index concept and have come up with these and other elements as important parts of an index.[5]

Sound simple? It won't be—for a number of reasons. Establishing, operating, and maintaining a North Carolina Environmental Index would be difficult and costly. Monitoring the environment, measuring pollution, and analyzing the data to determine areas of improvement or degradation is an extremely difficult process. It will require expensive monitoring stations in many different areas, costly equipment to collect data in many of those areas, and scientific expertise to analyze that data and to determine whether environmental quality has improved or declined for each indicator. The department has a professional staff that does an excellent job of fulfilling its current responsibilities, but NRCD will need a *larger staff* to operate an Environmental Index.

All this requires money—money that NRCD does not have in its current budget. Such an Environmental Index will require substantial appropriations from the 1989 N.C. General Assembly to set up the Index operation and to keep it going each year.

Pitfalls to an Index

This annual report should focus on the environmental resource itself—not on information about *managing* the environment. The 1987 NRCD report included a great deal of valuable information on water quality permits, land-use plans, dredge and fill permits, sedimentation permits, and other environmental management efforts. This information on managing and regulating the environment is one step removed from measuring the progress or decline in the environmental resources themselves. Put another way, the *inputs* into managing a resource such as surface water do not necessarily affect the *outcome* on that resource. In some instances, the permit information—i.e., the management system—is the best available source on an environmental resource. But the Index should transpose the data on permits into an indicator for that resource. In the section that follows on land, for example, the sedimentation permits are used to calculate the amount of land developed. Reporting only the number of permits would give the general public an incomplete picture; interpreting the data to show the actual effect—the amount of land under development—would be more helpful. And careful analysis of that indicator is needed to interpret whether, for instance, development means environmental improvement or degradation.

Could such a data-reporting process lead to a

Neuse River near Raleigh

Jack Betts

single Environmental Index? On a scale of 1 to 10, for example, would the state be a 6 on the scale in 1989 but improve to an 8 by 1990, or perhaps slide to a 5? Given the range of complex variables in the environment, and the need for careful analysis of each indicator, no such single indicator should be developed.

"A single environmental quality index might mask some very important changes which we ought to be addressing," says David H. Moreau, director of the Water Resources Research Institute, part of the University of North Carolina system. "We might have a serious deterioration in one aspect of the water, for example, and if that gets lost in a general indicator that's not as responsive to that, you're losing important information. A single N.C. environmental quality index might be nice, but I'm not sure it would be very meaningful."

Douglas N. Rader, senior scientist with the N.C. Environmental Defense Fund and a former NRCD official, adds that an environmental indicator may tend to oversimplify a condition—and thus impart erroneous perceptions. "In using indices of the sort proposed," says Rader, "we face ... a tremendous risk of oversimplifying complex problems. In the process, we may present a misleading picture of our state's environmental quality and provide support to those who would simply preserve the status quo."

The Department of Natural Resources and Community Development has expressed interest in such an Index but is concerned about its difficulty. "There is some merit in discussing the Environmental Index," says Edythe McKinney, director of Planning and Assessment. "However, ... to be useful it is necessary to better define the problem. As a minimum, there should be a more detailed discussion as to the need, the limitations and experience with measuring the 'quality of the environment,' and the components and weights to be included in an index. There should be an examination of what we want to measure and the costs and trade-offs in establishing an Environmental Index. The reader should be exposed to the debate on 'what is a good environment' that will surround the development and adoption of a system to measure environmental progress."

Given the data that's available in North Carolina, publishing an annual Environmental Index—even one covering only air, land, water, and

How Does North Carolina Rank — *continued from page 6*

lished, however, but with a new administration in 1989, this report could be renewed. Finally, on a global level, the Worldwatch Institute has recently begun publishing an annual book called *State of the World*, which summarizes environmental indicators worldwide.[8]

These indices, of course, examine national data. North Carolina's Environmental Index should be different in a number of respects: It should examine state data only; it should be published annually rather than periodically; and it should examine environmental problems unique to North Carolina.

—Bill Finger

FOOTNOTES

[1]*The State of the States, 1987* and *The State of the States, 1988*, Fund for Renewable Energy and the Environment, A Renew America Project, 1001 Connecticut Ave. NW, #719, Washington, D.C. 20036, (202) 466-6880; $15 for main report, $6 for focus paper on one of the six areas examined, $35 for report and all six focus papers (1988 report); prices are slightly less for 1987 report.

[2]For a full discussion of the permit backlog issue, see Frank Tursi and Bill Finger, "Clean Water—A Threatened Resource?," *North Carolina Insight*, Vol. 10, No. 2-3 (March 1988), especially pp. 57-58.

[3]"The 20th Environmental Quality Index," *National Wildlife* magazine, Vol. 26, No. 2 (February-March 1988), pp. 38-47; most of the past years' indices have also appeared in the February issue of the magazine; one copy of the index is free from Books & Special Publications, National Wildlife Federation, 8925 Leesburg Pike, Vienna, VA 22184; additional reprints cost 50 cents each.

[4]"A Nation Troubled by Toxics," *National Wildlife*, Vol. 25, No. 2 (February 1987), pp. 33-40; cost information is the same as in footnote 3.

[5]*State of the Environment: A View Toward the Nineties*, The Conservation Foundation, 1250 24th St., N.W., Washington, D.C. 20037, (202) 778-9510; cost is $19.95.

[6]*State Policy Reports* (Alexandria, Va.), Vol. 5, Issue 22 (Dec. 7, 1987), page 19. Also see Vol. 5, Issue 13.

[7]*Environmental Regulation of Industrial Plant Siting: How To Make It Work Better*, The Conservation Foundation, 1983, pp. 218-229 (see footnote 5 for address); cost is $15.00.

[8]*State Of The World*, annual report by the Worldwatch Institute, 1776 Massachusetts Avenue NW, Washington, D.C. 20036, first edition February 1988, $9.95 each (bulk order discounts available).

wastes—won't be easy. A central source of information on existing environmental information does not exist, and much of what does exist is technical. Currently, citizens, policymakers, news reporters, and lobbyists must gather data from many separate reports and offices. And once gathered, the pertinent information is often too technical to understand—or has severe gaps regarding important policy questions.

A beginning Index could be developed, however, even with existing data. And new types of data must be developed, refined, and consolidated to improve the Index in future years. As technology changes, so too will the values assigned to the indicators change—and analyzing those changes in future editions of the Environmental Index will also be difficult.

The question at the current juncture, then, is this: what could an Environmental Index contain if it were created now? And what actions could be taken to improve the collection of data in the future and the analysis of currently available data?

What follows is a discussion of what an Environmental Index might contain on air, land, and water. The professional staff at NRCD no doubt will have numerous suggestions for other environmental indicators and for improvements in these suggestions. So may other environmental experts, including the N.C. Environmental Defense Fund, the Sierra Club, the Conservation Council of North Carolina, and the Southeastern Environmental Law Center. Those suggestions can contribute to the debate over the proposal advanced here, but the key point of this article is to encourage the state of North Carolina to make regular assessments of its environmental quality. ***For these reasons, the N.C. Center for Public Policy Research recommends that the N.C. Department of Natural Resources and Community Development publish an annual North Carolina Environmental Index, beginning in 1991.***

FOOTNOTES

[1]*The Future of North Carolina—Goals and Recommendations for the Year 2000*, Report of the Commission on the Future of North Carolina, 1983, p. 192.

[2]N.C.G.S. 143B-278.1.

[3]See Chapter 479 (SB 1) of the 1985 Session Laws, Section 124. For more on the issue of special provisions, see *Special Provisions in Budget Bills: A Pandora's Box for North Carolina Citizens*, by Ran Coble, N.C. Center for Public Policy Research, June 1986 (pp. A-1 to A-3 list all the special provisions in the 1985 main budget bill; the environmental study requirement was one of 64 special provisions in the bill); see also, "N.C. Center Says 1986 Legislature Continued Abuse of Special Provisions in Budget Bills," released on March 2, 1987.

[4]"Education, Environment, and Culture: The Quality of Life in the South," 1986 Commission on the Future of the South, Cross-Cutting Issue Report No. 5, Southern Growth Policies Board, 1987, p. 12.

[5]The North Carolina Child Advocacy Institute unveiled on June 21, 1988, a "Children's Index: A Profile of Leading Indicators on the Health and Well-Being of North Carolina's Children." In developing its format, this group circulated a number of draft models to specialists in children's and policy issues. The final version of the Children's Index contains 30 indicators that meet most of the following criteria:

- *annual availability*—Typically, a state agency is the data source and collects the information each year, unless noted;
- *reliability*—The data are published and/or validated by their original source, and recognized professionally; and
- *simplicity*—The statistic is easily understood and commonly used, e.g., total number, percentage, or rate.

Another useful index to consult for various criteria was developed by the National Civic League and reported in *National Civic Review*, Vol. 76, No. 6, November-December 1987. This "national civic index" is put forward as a new way to approach community problem solving, and contains 10 components, including citizen participation, community leadership, intergroup relations, and others. These variables, in contrast to the criteria put forward by the child advocacy group, do not lend themselves to easy quantification, but represent another kind of use for an annual index.

"And there's this constant rumbling from the backhoes moving boulders for the tennis court. Evidently they've had to do a lot of blasting."

"How can he get away with that, it's wetlands?"

"I don't know, sweet, but he has the permit tacked up right on a tree."

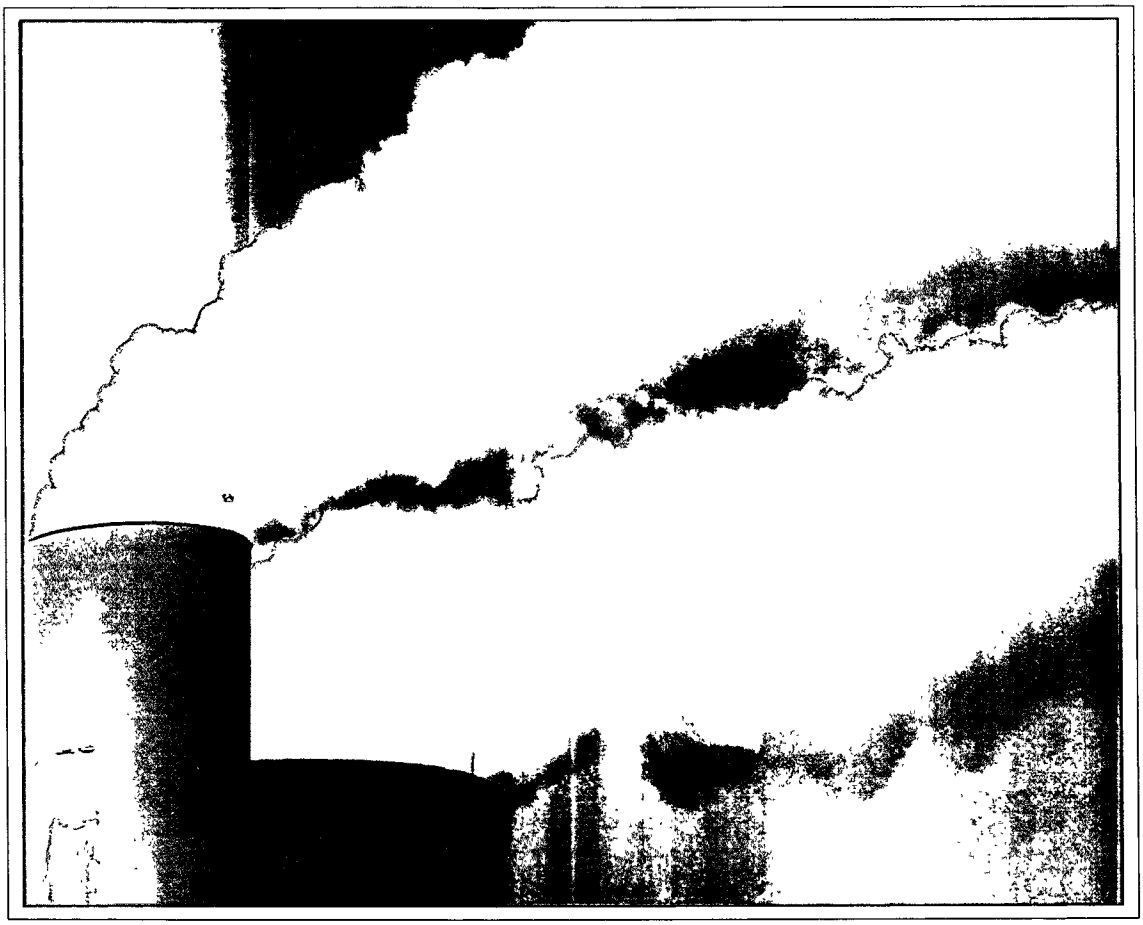
"The poor egrets."

"Oh Lexa, they have all the rest of Rhode Island to nest in. What's nature for if it's not adaptable?"

"It's adaptable to a point. Then it gets hurt feelings."

FROM THE WITCHES OF EASTWICK

BY JOHN UPDIKE



Robert Llewellyn

Part 1:

The Air Is Cleaner—Right or Wrong?

by Kim Kebschull

The air in North Carolina is getting cleaner, according to data gathered by state air quality monitoring stations. The federal Clean Air Act, passed in 1970 and updated in 1977, requires states to monitor six major pollutants for ambient air (i.e., air which the general public breathes). By 1985, all six were, on average, under the maximum limits allowed by government regulations. But the statewide data tell only part of the story.

"The available data hides the problem under the bushel basket," says Ogden Gerald, director of the Air Quality Section in the N.C. Department of Natural Resources and Community Development. "We don't know if we have a problem. We're not always measuring the problems."

Two of the six pollutants, carbon monoxide and ozone, illustrate the point. The levels of both pollutants have declined substantially, according to statewide data. From 1977 to 1985, the statewide average of amounts of carbon monoxide per cubic

Kim Kebschull, three times an intern at the N.C. Center for Public Policy Research, is a graduate student in government and foreign affairs at the University of Virginia.

meter of air dropped from 17 to 9.45 milligrams, below the acceptable government standard of 10 milligrams. Similarly, the amount of ozone dropped below the acceptable standard of 0.12 parts per million, from .126 parts in 1979 to .098 parts in 1985. (See Figure 1 for more data.)

Carbon monoxide, which comes principally from motor vehicle exhausts, can cause blood poisoning. Ozone, the principal pollutant in smog, is created from volatile organic compound emissions (often referred to as hydrocarbon emissions), which come from vehicle exhausts and from other sources, including certain industries. (Note that ozone in the air we breathe is harmful. Ozone far above earth, commonly known as the ozone layer, is good, for it filters harmful ultraviolet sun rays.)

The problems with the average statewide data became clear last summer. In August 1987, the Environmental Protection Agency ranked the Wake County-Durham County area 10th worst among 65 areas nationwide that did not comply with the carbon monoxide standard from 1984-86. Mecklenburg County was also on the EPA list of areas not complying with the carbon monoxide standard. In 1982, the legislature required Mecklenburg County to begin a mandatory emissions test as part of the annual state auto inspection system. "That might have helped the carbon monoxide levels some in Mecklenburg County, but we don't know that for sure," says Gerald. In November 1986, a similar program began in Wake County.

In an Aug. 29, 1987, editorial commenting on the EPA report, *The News and Observer* of Raleigh cautioned that the emissions test is not enough: "In addition, public officials in the Triangle should be planning for other means of reducing air pollution: Promotion of carpooling and vanpooling, the park-and-ride use of public transportation, special traffic lanes on commuter routes for high-occupancy vehicles, special appeals to limit driving on days of 'air pollution alerts,' and the placing of emission limits on stoves that burn wood and coal."

The Clean Air Act required that states meet all pollution standards by the end of 1987. Magazines from *Sierra* to *The Atlantic* pointed out that after many years and delays, the deadline finally came for meeting the federal standards. *Sierra* magazine, for example, reported in its September/October 1987 issue that "there are not just a few areas that will fail to meet clean air standards, there are 80."[1]

Three of those 80 are in North Carolina. Despite the fact that overall *state averages* are within acceptable limits, sections of Wake, Durham, and Mecklenburg counties are not. EPA could initiate official sanctions against these areas this year if steps are not taken to get under the limit. In other cities, the EPA has taken such actions, including bans on construction that could add to existing pollution, as well as cuts in federal highway funds.

"What I fear is stories saying that everything's okay except in certain areas," says Gerald. Sufficient data do not exist in three other urban areas—Greensboro, Asheville, and Fayetteville—to know whether there are violations of the carbon monoxide standard there as well, explains Gerald. He doesn't expect the legislature to require emissions testing in those counties, however, until there is better data. "We'll have to measure the problem before we put in a solution."

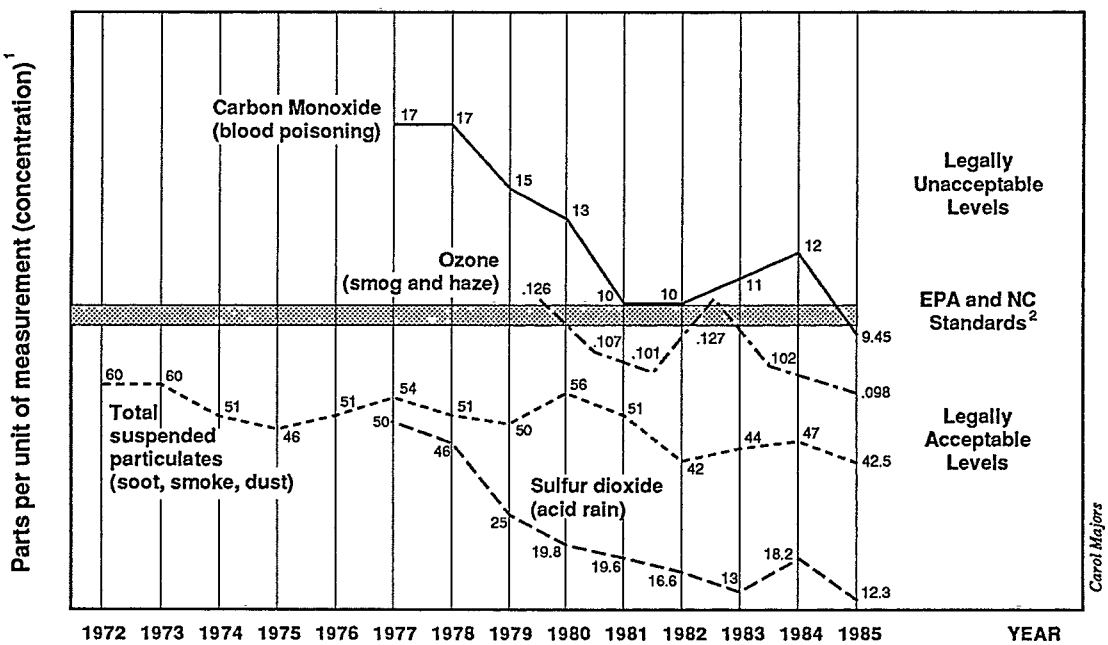
In May of 1988, the EPA considered taking action against even more counties than Gerald initially expected. The EPA indicated it would broaden the number of counties that must develop stricter programs for controlling air pollution. The EPA said it might accomplish this by broadening its definition of "non-attainment" areas to include the counties surrounding the main urban center where standards have not been reached. Ten North Carolina counties would come under the stricter EPA rules—four in the Triangle area (Durham, Franklin, Orange, and Wake) and six surrounding Charlotte (Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan, and Union, as well as York County, S.C.).

In addition to attaining pollution control levels, the EPA also requires other kinds of efforts. For example, an air quality index must be available on a daily basis in large cities. In North Carolina,

"... A nice distinction was made by the world traveler who explained the difference between a 'developed' and an 'under-developed' country; 'In an under-developed country, you don't drink the water; in a developed country, you don't breathe the air.'"

SIDNEY HARRIS

Figure 1. Air Quality Measurements in North Carolina for Four Pollutants, Compared to EPA and NC Standards



Source: All figures from *State of the Environment Report –1987*, Department of Natural Resources and Community Development

FOOTNOTES

[1] For purposes of conciseness and simplicity, this graph is plotted to show how the line would appear if the "part per unit" axis were graduated for the specific variable. For example, the carbon monoxide standard is 10 milligrams per cubic meter, and in 1981, the plotted point for carbon monoxide is directly on the EPA/State standard line.

Figure by Kim Kebschull

[2] The EPA and the state have set the following legally acceptable standards for the pollutants being measured:

Carbon Monoxide (CO) — 10 milligrams per cubic meter in an 8 hour exposure period

Sulfur Dioxide (SO_2) — 10 milligrams per cubic meter annually

Total Suspended Particulates (TSP) — 75 micrograms per cubic meter annually

Ozone (O_2) — 0.12 parts per million in a 1-hour exposure period.

this index is available through a computer telephone arrangement in Raleigh, Durham, Fayetteville, and Charlotte. The information is updated every four hours. The index shows the overall condition of the air (from "good" to "very unhealthful") and names the main pollutant, generally either carbon monoxide or ozone.

State officials decide which pollutants the state will monitor and what the acceptable standard might be for each pollutant. The N.C. Environmental Management Commission has adopted the ambient air quality standards recommended by the Environmental Protection Agency. (Note on Figure 1 that the line showing the acceptable level of pollutant is marked "EPA and NC standard.")

"We should also deal with agents not on the standard EPA list, particularly with toxic pollutants," says Dr. Robert Harris of the University of North Carolina at Chapel Hill, a former member of the Environmental Management Commission. Regarding the suitability of the EPA standards, Harris notes: "They were based upon the best

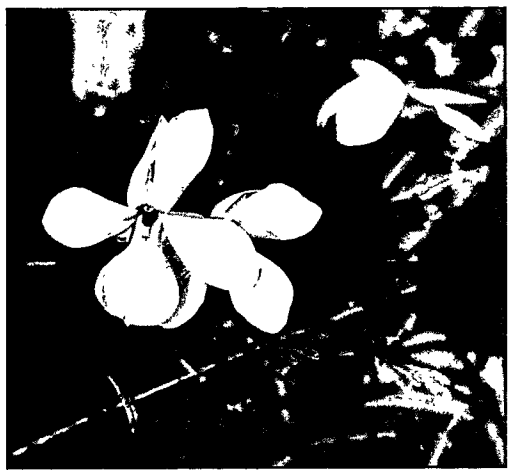
scientific information available at the time, so they probably represent levels that are technically defensible to protect public health. However, as we learn more about the effects of polluting agents, we learn more about the subtle effects that linger on to do damage later. Therefore, the regulations need to be reviewed on a regular basis and incorporate the most up-to-date information available."

Douglas N. Rader, senior scientist with the N.C. Environmental Defense Fund, adds that while some current data may paint a rosy picture, "[T]here is serious cause for concern about air quality in North Carolina, and . . . the present measures of air quality are misleading."

The state has developed a list of 116 more air pollutants that it may regulate under proposed rules before the Environmental Management Commission. The pollutants are air toxins that neither the state nor the federal government currently regulates, but which are known to cause health problems. Only 10 other states currently have regulations for controlling air toxins, but it could be the end of 1988 before North Carolina adopts its own regulations.

One notable exception to the list of toxic air pollutants the state is considering regulating is benzene. The N.C. Environmental Management Commission in May decided not to include benzene, despite its carcinogenic characteristics that many health experts say make it a much greater health threat than other chemicals on the toxic air list. State environmental officials agree that benzene can be a hazard, but say that strategies for controlling benzene need further consideration because it is so difficult to control.

North Carolina has been delayed in adopting its standards partly because under state law, the Environmental Management Commission (EMC) cannot adopt an air pollution standard tougher than the federal standard for that pollutant—unless the legislature repeals the state laws known as the Hardison Amendments.[2] The EMC could, however, expand the list of pollutants monitored under federal regulations, even under the limitations of the Hardison Amendments. To adopt an additional standard, the Hardison Amendment on air quality requires the EMC to review the economic impact of such an action and hold a public hearing on the issue. Observers believe that the Hardison Amendment has had a chilling effect on the state adopting air quality regulations even where there are no federal standards.[3] In addition, a larger state budget is needed for more extensive monitoring and enforcement inspections, say Harris, Gerald, and others.



Carol Majors

Birds-Foot Violet

Despite these limitations, the existing N.C. air quality monitoring and enforcement programs got a high rating in a 1987 study released by the Fund for Renewable Energy.[4] The study gave the N.C. program a rating of 8, on a scale of 1 to 10 (10 was highest). Only four states had a 9 or 10 rating, and hence were rated better than North Carolina (California, Connecticut, New Jersey, and Wisconsin); four other states also had a score of 8. The study did not rank the states on the individual issues examined but did compile a composite score on six issues; in that ranking, North Carolina was eighth among the 50 states (see sidebar on page 5 for more). However, the Fund for Renewable Energy based its analysis on the types of programs in place—not on how well the programs performed.

Many air quality experts believe that the data gathering process is much too limited when tied primarily to the six pollutants monitored under the Clean Air Act. "Air quality is *decreasing* in North Carolina," says Dr. Ellis Cowling, air quality expert at the North Carolina State University School of Forest Resources. "We can't think in terms of separate standards. We need to consider [air pollution] in a holistic manner."

Harris of UNC-CH agrees that the big picture is more complicated. "In the future, we will be studying such things as the greenhouse effect, carbon dioxide, and methane," he says. "The things we're concerned with now, such as nitrogen dioxide and TSPs [total suspended particulates], are important, but we're only looking at their short-term effects. Such things as the greenhouse effect could really change the heating and cooling balance of the planet, and these cannot be handled on a

statewide basis."

Mt. Mitchell in Yancey County signals another problem that goes beyond specific standards. What's known as acid rain, or more correctly acid deposition, may be causing the trees on Mt. Mitchell to die. Atmospheric reactions of sulfur dioxide and oxides of nitrogen result in the formation of acids, which fall to earth in acidic rain or as dry particles. This acid input significantly acidifies poorly buffered soils, lakes, and streams, damaging trees and other plants, killing aquatic life, and slowly destroying buildings and statues.

"Congress is considering some acid rain legislation, concentrating primarily on sulfur dioxide and nitrogen dioxide, but this attacks only a small portion of the problem," explains Gerald. "Scientists suspect that the *combination* of pollutants in acid rain makes vegetation vulnerable to otherwise normal environmental stresses," he adds. "It's like somebody shooting at you with a pistol, a rifle, a BB gun, a submachine gun, and a machine gun—you've got 40 holes in you. Which one killed you? That's the way it is with acid rain. It's the combination of these pollutants that is harmful, and it's difficult to attribute the problems to specific sources."

The acid rain discussion indicates how much the science of measuring air quality is in flux. William Hunt of the EPA office in Durham refers to air pollution reduction as a "dynamic process." Problems with lead have been markedly reduced, for example. But new evidence shows that there may be adverse health effects at much lower levels than was previously believed, and changes in the federal standards are being considered. Although North Carolina is below the standard statewide for carbon monoxide, Wake, Durham, and Mecklenburg counties are still not in compliance with emission standards. Auto emissions in metropolitan areas have not improved as much as regulatory officials had hoped, despite the more stringent emission controls on new cars. Ozone and sulfur pollution are still problems in urban areas in North Carolina, particularly during the summer. The EPA has threatened to impose new testing in the Charlotte and Raleigh areas to deal with this.

Overall, air quality *seems* to have improved over the years, but evidence of more complex air pollution questions is mounting. Experts warn of such far-reaching problems as acid rain and the greenhouse effect. The available data, prescribed for the most part by the EPA, might suggest a rosy picture—but only if one ignores the rest of the evidence. Even the officials in charge of gathering those numbers caution against relying on them too heavily. "Society tends to look the other way when we don't know if we have a problem," says Ogden.

FOOTNOTES

[1]"Clean Air Advocates: Still (Wheezing, Gasping, Crying) Trying After All These Years," *Sierra* magazine, published by the Sierra Club, September-October 1987, page 13; see also, "The December Almanac," *The Atlantic* magazine, December 1987, page 16.

[2]G.S. 143-215.107(f).

[3]Jack Betts, "The Hardison Amendments: Time for a Reappraisal?" *North Carolina Insight*, Vol. 10, No. 2-3, March 1988, pp. 107ff.

[4]"The State of the States, 1987," released by the Fund for Renewable Energy and the Environment (to order, see information in sidebar on page 8, footnote 1).

" ... Now comes the gloaming. The alpenglow is fading into earthy, murky gloom, but do not let your town habits draw you away to the hotel. Stay on this good fire-mountain and spend the night among the stars. Watch their glorious bloom until the dawn, and get one more baptism of light. Then, with fresh heart, go down to your work, and whatever your fate, under whatever ignorance or knowledge you may afterward chance to suffer, you will remember these fine wild views."

FROM WILDERNESS ESSAYS BY JOHN MUIR

Carol Majors

Part 2:

How Do We Gauge Progress or Decline in Land Resources?

by Bill Finger

*"The goodliest soile vnder the cope of heauen."**

This immortal phrase captures the image that remains in the minds of many North Carolinians more than 400 years later. Threats to this goodliest land have gradually increased over the years. Very little of the state's original natural habitat remains, and few of us know what North Carolina looked like four centuries ago, before pines began to forest the state as a cover to replace the virgin timber that had been harvested by the first settlers.

*Letter from Ralph Lane to Richart Hakluyt the Elder, September 3, 1585, describing what would later be named North Carolina.

Carol Majors

Common Fleabane

As late as 1980, 52 percent of the population lived in rural areas, making North Carolina one of the most rural of the 50 states. But in the wake of the modern Sunbelt boom, the rural lands have come under increased pressure from urban development. Clearly, rural lands are being converted to urban uses. The question is, how fast and at what cost? Answering such questions is difficult, even for the experts.

Determining clear measurements of the land resource that are comparable over time is essential for understanding how the use of land is changing. Making such measurements of land use clear to the public is the purpose of this section on the Environmental Index. But gathering data on the land resource—the first step in this land Index—is a challenging enterprise. For example, measuring non-point source pollution such as farm fertilizer runoff is particularly difficult to evaluate, manage, or correct.

"There's just an absence of data there. We get four or five requests a week for data about the land resource, and it's just not there," says Karen Siderelis, director of the Land Resources Information Service in the Department of Natural Resources and Community Development. "We need an overall land-use and land-cover inventory—all the urban areas, all the agricultural areas, etc.," she explains. "We need an inventory on a statewide basis and [need to] do it in a way that it could be updated. Then we could start to get at all those trends. Starting the process would take several hundred thousand dollars each year."

It's not that such an inventory is difficult to create. The technology for such mapping for land use and land cover has been vastly improved. But it would require a considerable sum of money to complete such an inventory for the entire state—and to keep updating it to remain current.

Even without undertaking a major new land inventory, an annual reporting of currently available data would be helpful. For example, from 1981 to 1983, the number of acres approved for new development *declined* by 9 percent, from 11,600 in 1981 to 10,500 acres in 1983. There were probably many reasons for the decline, but simple statistics explain the main one: The state was going through a recession, with the statewide unemployment rate up to 9 percent. In 1986 and 1987, in contrast, the state's economy boomed (the unemployment rate in 1988 has been below 4 percent), and the number of acres under development shot up 55 percent, from 20,000 in 1986 to 31,000 acres in 1987 (see Table 1). These figures, by the way, do *not* include land under development for state highways. Perhaps Department of Transportation figures should also be reflected in such an index. The figures also do not include small land developments of less than an acre, which the state does not monitor. The state does keep data on the number of acres of land disturbed for mining, however.

The tension is obvious in the numbers. Using such figures for a land index, of course, would require careful analysis. Simply because a certain amount of land is being developed does not alone mean either environmental improvement or environmental degradation. But it nonetheless could serve as an indicator of a very general trend of development, and could aid policymakers in determining the total amount of North Carolina land developed in relation to the amount undeveloped. Doug Lewis of NRCD's Division of Soil and Water Conservation puts it this way: "Development for commercial/urban purposes often adversely affects surrounding land for agricultural purposes, prematurely idling it from farming uses. Given the devel-

Table 1. Number of Acres Developed in North Carolina, 1980-87

Year[1]	Acres Disturbed by All Projects, Except Agriculture or Forestry, of More Than One Acre[2]	Acres Disturbed by All Projects Requiring a Major Permit in the 20 Counties Covered by the Coastal Area Management Act[3]
1980	13,600	NA
1981	11,634	NA
1982	10,678	NA
1983	10,466	NA
1984	14,251	1,670
1985	17,518	414
1986	19,709	275
1987	30,600	3,332

FOOTNOTES

[1]For the first column of data, the year is the state fiscal year, July 1 through June 30. The second column of data is on a calendar year basis.

[2]These numbers are based on the number of permits filed with NRCD and local governments, multiplied by 8.5 acres as the estimated average size of each project requiring a permit. Source: Land Quality Section, Division of Land Resources, Department of Natural Resources and Community Development.

[3]These numbers are acreage shown for major permits issued through the "major permit" process required by the N.C. Coastal Area Management Act. A major permit is required, in general terms, for a project being undertaken in an area that has been certified under a formal rulemaking process as an "area of environmental concern" (AEC). In the 20-county area covered by CAMA, only about 3 percent of the total land area is classified as an AEC. Source: Division of Coastal Management, Department of Natural Resources and Community Development.

opment of vacation properties on the coast and in the mountains, and the boom in industrial, commercial, and housing uses across the Piedmont, I argue that these estimates grossly understate the level of land development in the state."

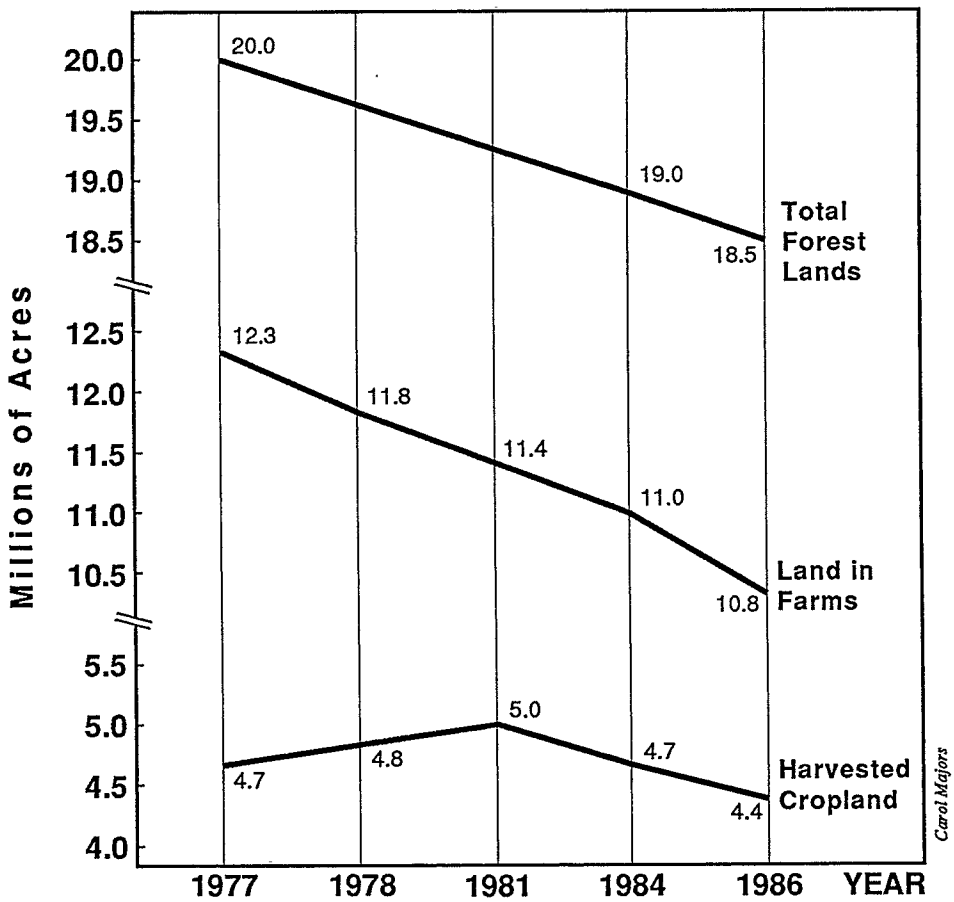
How do state land-use regulations balance development opportunities and environmental protections? The answer to that question lies in land-use plans and zoning ordinances, regulating fragile coastal and mountain areas, and other policy issues.[1] North Carolina has no statewide land-use planning or zoning, though most urban counties do have some form of zoning or land-use plans. The state's Coastal Area Management Act does work well in regulating development along the coast, but in much of North Carolina there is little land-use planning and regulation. To know which policy questions to ask, policymakers and the public need as much data about the land resource as possible. An Index of the land—how it is changing over time—is fundamental to any policy discussions about land use.

Some useful data are *already available* on an annual basis and could be built into an Index of the land. These data include:

"The earth is the Lord's, and the fulness thereof;"

PSALMS 24:1

Figure 2. N.C. Acreage in Forests, Farms, and Harvested Cropland, 1975-1986



Sources: N.C. Department of Natural Resources and Community Development (for forestland) and N.C. Department of Agriculture (for land in farms and harvested cropland).

Note: The baseline time scale used here illustrates the problem with state data collection: Data are not collected for each of these resources each year, and in only three years out of the last 11—1977, 1984, and 1986—were data collected and reported for all three resources.

1) the number of acres developed for all uses other than agriculture or forestry in projects of more than one acre in size (Table 1);

2) the number of acres developed in fragile coastal areas (Table 1); and

3) the number of acres of land in forestland, farmland, and in harvested cropland (Figure 2).

Even these data sometimes are compiled using indirect methods, and therefore are only approximate numbers. As Rader puts it, "All of this data is suspect or incomplete," especially when it comes to silviculture and agriculture. The best estimate of the number of acres being developed comes from field workers in the Department of Natural Resources and Community Development's Division of Land Resources. Under the N.C. Sedimentation Pollution Control Act, every project that will "disturb"—as the law puts it—more than one acre for any use other than forestry, mining, or agriculture must have approved sedimentation control plans.[2]

During the 1986-87 fiscal year, more than 2,300 permits moved through the state office and about 1,300 through local government offices. (State law allows local governments to establish their own sedimentation control programs, including issuing the permit.)

The NRCD field workers estimate that the average project size for these 3,600 permits was 8.5 acres. "While this is a rough estimate, it is remarkable that several of our field people came up with the same number independently," says Charles Gardner, chief of the Land Quality Section, which has responsibility for administering the sedimentation permit system. Applying the 8.5-acre estimate to the sedimentation permit records yields the data shown in Table 1. "This is a very rough estimate," admits Gardner, "probably plus or minus 20 percent. But it is comparable over the years and shows the trends." Other analysts point out that the numbers may not be so constant. Large planned unit developments are becoming the norm, many with large tracts such as golf courses.

The point needs to be emphasized. Data on the number of rural acres developed for urban uses are currently *not* gathered, though they may be available through county tax assessment offices. But by applying thoughtful estimates to the readily available permit data, an estimate of the number of acres of rural land being developed into urban land can be made. Determining the number of acres of land being developed in coastal areas also must be estimated, by using the "major" permit system required under the Coastal Area Management Act (see Table 1, footnote 3). Researchers at the Division of Coastal Management readily admit that the current estimates are rough. They say that linking the permit records to the actual acreage being developed would be desirable but would require improved computer record-keeping.

> *"Look at Mother Nature on the run in the 1970s."*
>
> NEIL YOUNG, SONGWRITER

The data in Table 1 and Figure 2, viewed together, *suggest* that rural land is being converted to urban uses at a rapid pace. Although there is still roughly 16 times more rural than urban land in North Carolina, the portion of land used for urban purposes is increasing rapidly. Table 1 shows the number of acres being developed for urban uses. Figure 2 indicates the decline in acreage for both forest land and farmland.

A more traditional and comprehensive set of data exists from a series of federal studies, but those data have even more severe limitations. The U.S. Soil Conservation Service conducted comprehensive national land inventories in 1958, 1967, 1977, 1982, and 1988 (in progress). Unfortunately, the data collection method has changed significantly from year to year, particularly in 1982. For example, total urban acres in North Carolina, according to these reports are:

1958 - 800,000 acres
1967 - 1,462,000 acres
1977 - 1,844,000 acres
1982 - 1,600,000 acres

These data indicate that the number of acres in urban uses declined by 244,000 acres from 1977 to 1982, but all analysts agree that acres in urban use increased during that five-year period. So what happened? The definition of

Painted Trillium

Carol Majors

"urban" changed substantially in the two studies, making comparisons difficult if not misleading.[3] Nor do the data indicate exactly where the land has changed. For instance, the decline in farmland has not occurred in the coastal plain region. In fact, agriculture, particularly livestock operations, is enjoying a boom in the area.

Other kinds of data which are important to understand but even more difficult to measure include: soil loss and soil regeneration, loss of wetland acres (help is on the way with completion of a National Wetland Inventory due soon), and the number of acres of formally protected lands (publicly and privately held). In each case, a number of policy questions and government programs are involved. With the soil loss question, for example, a system of "best management practices" is being implemented on agricultural lands.[4] Reliable data are essential in gauging the importance of such programs. Overall estimates are possible, but real data are difficult to develop, especially since agriculture projects are exempt from the sedimentation permit system.

"Estimated erosion in the state is in the range of 75 million tons annually," writes Doug Lewis, research specialist in the NRCD Division of Soil and Water Conservation. "Assuming 25 percent of total erosion becomes sediment, then enough is produced in North Carolina each year to fill 1.9 million dump trucks."

While data on the land resource are difficult to report, an Environmental Index could show the public the pace of several major trends: 1) how fast the portion of N.C. land in rural acres is declining; 2) how much soil is being lost despite efforts to combat this. The Index could document these trends with existing management reporting permit data, if used to estimate the changes in the land resource itself. The Index should also examine loss of natural habitat and of wetlands.

Still, these are very rough estimates. The state needs a more direct data collection system. An overall, comprehensive land-use inventory would allow the data in the tables shown here to be gathered in a more coherent and reliable way. The inventory would also provide a means for gathering other less accessible data, such as the total acreage of land in protected status, which now must be compiled from at least four different state and federal agencies. That protected status could include not only habitats, forests, wildernesses and the like, but also those under land-use plans or under zoning plans.

The land component of the Index, then, can measure the loss of rural land and of soil itself with a series of estimates using permit records. For this Index to be more reliable in the long haul, a better data collection system is necessary. A comprehensive land-use inventory should be created over the next five years, and it should be regularly updated.

FOOTNOTES

[1]See Larry Spohn, "Protecting the Land and Developing the Land—How Can We Do Both?" *North Carolina Insight*, Vol. 10, No. 2-3, March 1988, pp. 94ff.

[2]G.S. 113A, Article 4, particularly 113A-57 (standards for permit) and 113A-60 and 113A-61 (local erosion control programs).

[3]For a good review of the problems involved with the federal data, see "Land Use and Soil Loss: A 1982 Update" by Linda K. Lee, *Journal of Soil and Water Conservation*, Vol. 9, No. 4, July-August 1984, pp. 226-228.

[4]See Frank Tursi and Bill Finger, "Clean Water—A Threatened Resource?" *North Carolina Insight*, Vol. 10, No. 2-3, March 1988, pp. 58-61.

"The downside of Feliciana is that its pine forests have been mostly cut down, its bayous befouled, Lake Pontchartrain polluted, the Mississippi River turned into a sewer. It has too many malls, banks, hospitals, chiropractors, politicians, lawyers, realtors, and condos with names like Château Charmant.

Still and all, I wouldn't live anywhere else."

FROM THE THANATOS SYNDROME *BY WALKER PERCY*

Carol Majors

Part 3:

Measuring Water Quality — Four-Part Harmony

by Bill Finger

To keep the public posted on North Carolina's water resource, state officials have to sing a four-part harmony. Because no one can go without clean drinking water, this choir of officials has to sing a pretty good tune. Each of the four parts operates under separate legal, administrative, and regulatory arrangements. Consequently, arriving at a single indicator on the state of the state's water quality and supply is neither possible nor desirable. Any single indicator would obscure the subtleties and complexities involved. But indicators can lead to an Index within each of the four parts: surface water, groundwater, estuaries and sounds, and water supplies. (Estuaries and sounds are also surface waters but have separate ecological and legal considerations, and hence separate data sources; still, management strategies must be basinwide.) Under current administrative arrangements, the first three parts of this choir generally concern ambient water *quality* while the fourth focuses on water *supply*—drinking water quality.

The single most comprehensive source of in-

formation on water quality in North Carolina is the "305b report." Released by the Department of Natural Resources and Community Development every two years since the mid 1970s, it documents the state's effort in monitoring and regulating water quality as required by the federal Clean Water Act. The most recent report (July 1986) runs 150 pages, with separate sections on surface water, groundwater, water pollution control programs, and special concerns/problems. (The 1988 report, to be released this fall, emphasizes major problems in coastal waters). An additional 46-page appendix shows the technical measurements made at each water monitoring station. In its *State of the Environment Report-1987*, NRCD spotlighted water resources as one of two issues of special significance, relying mostly on the 305b data base.

Both the 305b and *State of the Environment* reports contain an upbeat tone on water quality but do not present clear data to support their claims. "Under guidance of the federal Clean Water Act, state efforts since the early 1970s have emphasized the control of point sources [of water pollution], and this has resulted in substantial improvement of our water bodies," says the 1987 NRCD report.[1] The 1986 305b report reads: "There is evidence that substantial success has been accomplished in improving lake and stream quality across the State."[2]

A close review of these two and other documents leads to a far more complicated picture than the "substantial improvement" or "substantial success" claimed by the two NRCD reports. Some data do indicate improvements; other numbers point out problems. Perhaps most important are the gaps in the data currently being collected—data that are not collected because of the difficulty and the expense. As Richard N.L. Andrews of the UNC Institute for Environmental Studies puts it, "What substances do you monitor for? . . . What information do we want to have? . . . There are fundamental tradeoffs here."

Surface Waters. There are 37,000 miles of fresh water streams and rivers in the state and some 320,000 acres of lakes and reservoirs (excluding small water supply reservoirs and private ponds). Water officials use a "best use" base measurement for surface waters as a guidepost for analyzing water quality. Virtually all N.C. inland surface waters have an assigned best usage within one of two general classes: water supply (6,400 miles of streams and rivers) and fishable/swimmable (31,000 miles). The Division of Environmental Management (DEM), which prepares the 305b report, matches a surface water segment with its best use classification to see whether it: 1) supports that use, 2) partially supports that use, or 3) does not support the use. For streams and rivers, 67 percent of the miles support the best-use classification, 27 percent are partially supporting, and 5 percent are not supporting (see Figure 3, for proportions according to river basin).

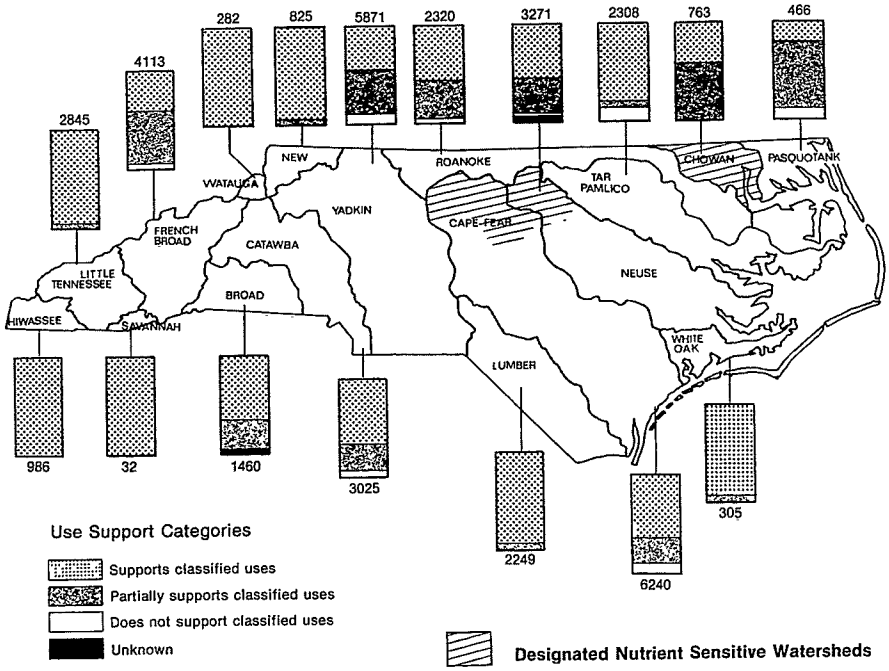
The most useful analysis of surface water quality over a span of years, according to interviews with the state officials who prepare the 305b report, is what they call a "use impairment index." Traditional analysis of water quality has tested chemicals in the water. This new index adds to that chemical analysis information on sediment, turbidity, biological indicators, and professional judgment. This new system, used first in 1986, "makes comparisons problematic" for past years' data on the percentage of surface waters meeting their best-use classifications, says the 305b report. The 1986 report did include a use impairment index for two river basins (the French Broad and the Cape Fear), showing trends from 1980 to 1985. Improvements appeared at some measuring stations but not at others. Data on water quality are taken at a series of measuring stations along the river.

Other 305b data show clear progress with surface water quality, such as a running total of streams classified as "degraded."

"The highest good is like water.
Water gives life to the ten thousand things and does not strive.
It flows in places men reject and so is like the Tao."

LAO-TZU

Figure 3. Total Freshwater Stream Miles and Proportions in Various Use Support Categories (1984-1985) for Major N.C. River Basins



Source: State of the Environment Report –1987, N.C. Department of Natural Resources and Community Development, p. 4

From 1977 to 1985, the number of miles of degraded streams *decreased* by 80 percent, from 3,000 to 600 miles. "Given the amount of money we've spent on wastewater treatment, one would expect to have progress on water quality—on the conventional criteria measured at point sources of pollution," says David H. Moreau, director of the Water Resources Research Institute, in the University of North Carolina system.

Moreau and others believe, however, that the current system of measuring surface water quality can make the quality *appear* to be better than it really is. "The samples are located primarily *below* point source discharges," explains Moreau, referring to the points in a stream or river where a municipality or major industry discharges its wastewater into a river or stream. "The samples are reflecting the effects of the construction program for wastewater treatment programs. What they do not reflect very well are the nonpoint source loads," he adds, referring to the pollutants that enter surface waters from rainwater washing across farms, developments, cleared land, and highways. "Nor do they reflect the emerging concerns over synthetic chemicals—pesticides and solvents going into our surface waters through nonpoint sources."

Douglas N. Rader, senior scientist for the N.C. Environmental Defense Fund and himself a former NRCD official, says, "Monitoring for water is exceedingly difficult if the aim is to test a hypothesis of improvement or degradation, because variability is so great. Dr. Moreau's points are well stated. Another major problem is the minimal compliance/enforcement program for surface water dischargers: compliance with discharge permits is verified by the dischargers themselves, and enforcement occurs only following citizen complaints."

The NRCD *State of the Environment Report-1987* does address the problems with nonpoint source pollution. NRCD reports that nonpoint

sources account for 71 percent of the pollution for streams and rivers not supporting their classified uses.[3] But neither the NRCD report nor the 305b document takes the issue one step further, to reflect Moreau's concern. Judging whether a stream supports its classified best use must still be done primarily on the basis of data taken at point sources of pollution, i.e., municipal or industrial wastewater discharge points. (For more on policies affecting point and nonpoint pollution, see "Clean Water—A Threatened Resource?," *North Carolina Insight,* March 1988, pp. 53ff).

Groundwater. The data problems concerning surface water pale compared to groundwater. "There is no comprehensive groundwater statute that requires good data gathering," explains Lark Hayes, a specialist on groundwater issues and director of the North Carolina office of the Southern Environmental Law Center. More than one of every two North Carolinians depends on wells, i.e., groundwater, for drinking water. North Carolina has more domestic wells (some 822,000) than any other state and another 5,100 community wells.

Some data related to groundwater exist. For example, a registration program has begun for underground storage tanks, which can leak and contaminate groundwater. "But this data needs to be related to existing and future drinking water supplies," says Hayes. Other data include the groundwater withdrawal permitting program information for designated Capacity Use Areas, as well as local municipal data.

The 305b report devotes 65 pages to surface water (plus the 46-page index) and *less than 4 pages* to groundwater. "We have hardly any measurements on groundwater contamination," says Moreau. Even so, he believes, "we do not have a groundwater contamination problem in North Carolina."

There are, however, localized problems that do not show up in statewide data—perhaps because groundwater is highly variable in quality. The state may not know about all these localized problems. And conversely, eastern North Carolina has high-quality groundwater supplies, but they are not used that often. Instead, surface waters like rivers, which may have a history of pollution problems, often are the suppliers of raw water for municipal drinking water supplies.

Hayes is more worried about the groundwater supply. "The counting up of the groundwater pollution sites needs to be related to current and future uses of groundwater." NRCD investigates about 200 such sites a year, but the data are not easily accessible. "We need a state-mandated planning process around future groundwater uses. Even within the general problems of data for water, groundwater is the neglected stepchild."

An eight-page report released by the U.S. Geological Survey in February 1988 found that groundwater in North Carolina is generally clean and mostly meets drinking water standards.[4] "Some other states are in a much weaker position than North Carolina," says James F. Turner Jr., district chief of the U.S. Geological Survey water resources division in Raleigh. "But the quality is becoming impaired as we get more development."

Estuaries and Sounds. While technically part of the state's surface water system, estuaries and sounds have characteristics unique to coastal ecosystems, development patterns, and regulatory systems. (For more on coastal issues, see "Upcoming Issues on the Coast," *North Carolina Insight,* March 1988, pp. 70ff.) Data that reflect *actual water quality* include shellfish acres that are closed and fish yields and kills. By contrast, data related to *managing* the coastal resource, such as the number of permits issued under the Coastal Area Management Act, indicate increased pressure on the water resource through escalating development but do not reflect the water quality directly.

Data on estuaries and sounds closed to shellfishing can be misleading. For example, overall data indicate an *improvement* in the quality of shellfish waters. From 1980 to 1987, the number of acres closed to shellfishing *decreased* by 4 percent, from 328,000 to 316,500, suggesting an improvement in overall water quality. But within this general set of data lie several important subsets, including prime shellfish acreage and brackish water acreage. In contrast to the overall data, from 1980 to 1987, the number of *prohibited* acres in saline waters (oyster and saltwater clam areas) *increased* by 16 percent, from 49,500 to 57,300 (see Table 2). And certain unusual incidents, such as the red tide phenomenon of 1987 (a toxic tide that closed shellfishing areas), also affect such data. Biological problems such as fish and crab diseases, fish kills, submerged plant beds disappearing, algae blooms, and other problems "demonstrate that environmental tolerance has been exceeded [and] that assimilative capacity for wastes has been surpassed," says Rader.

"We've lost some of our prime shellfish waters," says George Gilbert, researcher at the Shellfish Sanitation Office in the N.C. Department of Human Resources. "My grandkids aren't going to be able to harvest oysters and clams like we did.

People will have to harvest them mechanically."

Another indicator of coastal water quality is fish yields. These data also have many subtleties, whether based on commercial fishery landings or actual testing in the water for "juvenile fish," as officials in the state Division of Marine Fisheries call them. From 1980 to 1985, yields for nine of 14 principal commercial fish species declined, including croaker, blue crab, flounder, and spot. But other factors besides water quality have a substantial impact on these numbers, ranging from the numbers and efforts of fishermen to the availability of prime fishing grounds at Oregon Inlet.

"Existing methods of measuring catch per unit of effort are not adequate for making valid year-to-year comparisons, because they do not accurately reflect the many variables and hidden factors that may be involved," says the NRCD *State of the Environment Report-1987.*[5]

Water Supply. There is no systematic reporting on water *supplies* in the state. The federal Clean Water Act and other federal requirements, including the federal Safe Drinking Water Act, focus on water *quality*. Currently, each individual community keeps track of its own water supply needs. "It would be very useful to have the legislature require the largest communities to report on their water supply needs and resources," says Moreau. There are about 55 water systems in the state serving more than 10,000 people, plus thousands of smaller ones (mobile home parks, etc.). Roughly 3,000 small water supply systems serve small communities, and most of these systems are too small to deal with all the problems that can affect water supply and water quality. Each individual community may be thinking about drought planning, for example, but no state data source exists as a basis for reviewing where communities may be able to help each other. "The data become more important when you get into problems like interbasin transfer and capacity use issues," says Moreau.

Moreau and others point out that the state requires extensive reporting from local governments on such capital needs as schools and roads. "We have no such requirement for water supply or wastewater," says Moreau. "We need a simple report saying, 'Here's what I think I need over the next 10 years.' Then you can begin to see where you will get resource shortages around the state. It will tell you where the imbalances are. And in terms of fiscal planning at the state level, through Clean Water Bonds and tax programs, they would tell you what kind of financial resources are needed for water supply." Even more valuable would be an analysis of the fixed yield, current and potential demand, and rate of growth so that communities and the state would have a better fix on required expansion.

Table 2. Acres Closed to Shellfishing in North Carolina

Year	Acres Closed	Saline-Water Acreage Closed
1980	328,088	49,468
1981	317,608	57,388
1982	319,887	60,667
1983	320,672	61,452
1984	312,610	52,390
1985	316,187	56,967
1986	316,505	57,284
1987	319,459	51,738

Source: Shellfish Sanitation Branch, N.C. Department of Human Resources

Conclusion. An easy-to-read summary of the state's water resource would require a creative presentation of existing data and the generation of new data. Extensive data exist on surface water issues, and the increased sophistication of the "use impairment index" is leading to a more thorough data source. Adding new data on nonpoint pollution would complete the picture for surface waters. New groundwater data are desperately needed. Currently, no data exist linking such problems as storage tank leaks and contamination incidents with existing and future groundwater drinking water sources. Data on estuaries and sounds should improve markedly through the ambitious Albemarle-Pamlico Estuarine Study now underway. Finally, the legislature should require NRCD to collect data on water supply needs and resources in order to improve state-level planning.

FOOTNOTES

[1]*State of the Environment Report-1987,* Department of Natural Resources and Community Development, April 1987, p. 5.

[2]*Water Quality Progress in North Carolina, 1984-85/ 305b report,* N.C. Department of Natural Resources and Community Development, July 1986, p. iii.

[3]*State of the Environment Report-1987,* p. 5.

[4]"North Carolina Groundwater Quality," U.S. Geological Survey, Water Resources Division, Raleigh, 1988, pp. 1-8.

[5]*State of the Environment Report-1987,* p. 28.

Russell Norburn

Recommendations

What Should Go in a North Carolina Environmental Index?

"The earth belongs in usufruct to the living."

THOMAS JEFFERSON

The N.C. Center for Public Policy Research recommends that the N.C. Department of Natural Resources and Community Development publish an annual North Carolina Environmental Index, beginning in 1991. The Center also recommends that the 1989 N.C. General Assembly appropriate the necessary funds to establish, publish, and maintain the Index.

The N.C. Center has reviewed the data sources on air, land, and water, the primary environmental resources. A North Carolina Environmental Index —really a series of indicators—might start with these three areas. The Index could also cover such areas as wildlife, parks and recreation, hazardous and radioactive wastes, and solid wastes. Below are specific suggestions as to what a North Carolina

Environmental Index should contain regarding air, land, water, wastes, and wildlife. Where the existing data base does not provide good indicators, the N.C. Center also recommends ways to improve that data system.

The Air Resource

1. *The Index should contain data on the six major pollutants which the Environmental Protection Agency (EPA) requires the state to monitor, on a statewide basis and by county where possible.* The six pollutants are carbon monoxide, lead, nitrogen dioxide, ozone (including hydrocarbons), particulates, and sulfur dioxide. The county-level data are necessary to show which areas are still not meeting EPA standards. For example, Wake, Durham, and Mecklenburg counties are currently not meeting the carbon monoxide standards.

2. *Carbon monoxide and ozone levels should be reported for the 10 largest urban areas in the state.* Currently, sufficient data on these pollutants are not being gathered in places such as Fayetteville, Greensboro, and Asheville. These areas may or may not be meeting EPA standards, but sufficient data do not exist to tell. If they are not, new emission tests could be required in such counties, as the General Assembly has done for Wake, Durham, and Mecklenburg counties. Such additional monitoring would require an increase in state appropriations.

3. *The N.C. Environmental Management Commission should consider setting air quality standards for agents not on the standard EPA list, particularly toxic pollutants.* Information on air quality issues is changing rapidly. For the public to be fully aware of air quality issues, more pollutants need to be monitored than just the standard six. Such data could then be included in the Environmental Index. The Commission is considering adding up to 116 pollutants to the list of those regulated by the state, and may adopt standards by the end of 1988.

4. *The Index should include information on larger air-quality issues, such as acid deposition and the greenhouse effect, as they relate to North Carolina.* Increasingly, air quality issues are interrelated to larger ecological forces that go beyond a single state or even country. These issues need to be included in the Index of the state's air quality.

The Land Resource

5. *The legislature should appropriate sufficient funds for a statewide inventory of the North Carolina land.* Currently, no such inventory exists. Current data on how land is being used must be estimated from permit records and other methods. There is no data base on how the land is being used. This base should be developed in a way that it could be updated frequently.

6. *The Index should contain trends on how many acres are being developed for urban uses.* This data can be estimated from permit records — statewide except for forest land and agricultural land, and in 20 coastal counties using the major permit process in coastal "areas of environmental concern." Future refinements of this indicator would include digitization (an advanced computer application that could provide statewide map overlays of a variety of land features) of land-use patterns statewide, as well as developing new sources of data on habitat.

7. *The Index should contain trend data on acreage in cropland, forests, and pasture.*

8. *The Index should contain trend data on the number of acres of protected lands, both public and private.* This information is difficult but not impossible to collect. The Index should compile the number of acres of federal lands (parks, forests, etc.), state-held lands (parks, scenic river areas, etc.), and private reserves (available to some extent through the N.C. Nature Conservancy). These cumulative data, shown over time, would depict the extent to which state and private funds are increasing the total acreage of protected lands. Note: Careful analysis must be used here to distinguish among different types of protected lands and to assign environmental values to changes in these lands.

9. *The Index should contain data on state parks and recreation areas, including state forests and other lands used by citizens for recreation areas.* These data specifically should include information on the age and condition of each of these areas, and should report on critical needs of each park or area. The data should include but not be limited to replacement of existing structures and utilities; needed land acquisition, and trend data on appropriations to each of these areas.

The Water Resource

10. *The Index should contain basic information on surface waters, including data on "use impairment."* The 305b report made to the EPA every two years contains excellent data, including the percent of miles of surface waters meeting their best-use classification. The state has begun to measure more river basins with a broader group of tools, gathering biological, chemical, and other

data and resulting in a "use-impairment" index. This gives a fuller picture of whether the quality in a stretch of surface water is improving. The Index should draw on this approach for statewide data. The Chesapeake Bay Program in Maryland and Virginia routinely reports water quality information in an easy-to-understand format, and so can North Carolina. Such reports should include information on facilities out of compliance with their permits, as well as biological events such as fish kills, algae blooms, and diseases in aquatic life.

11. *The Index should contain better data on nonpoint pollution of surface waters.* Thorough data are collected on point sources of pollution but not on *nonpoint* sources. New state funds may be necessary to expand this data collection, and a land-use inventory would be critical to its success.

12. *A comprehensive data collection and reporting system for groundwater needs to be developed and funded.* Currently, little regular data are gathered on groundwater. Periodic surveys are made, and reports of incidents of groundwater pollution are investigated. But routine testing of groundwater is not done as it is with surface waters. With regular collection of data on groundwater, the Index could report trends on whether the quality of groundwater should be of concern to the public.

13. *The legislature should require all governmental units operating a water supply system serving more than 10,000 people to report estimates of water demand and supplies to a central state office.* Currently, no comprehensive information exists on the demand for water and the water supplies of various communities. Long-range planning is difficult, as is planning for emergency measurements under drought conditions. These data could be summarized and reported in the Index to show whether anticipated water supplies can meet anticipated water demands.

14. *The Index should contain newly-collected data on the quality of drinking water supplies, including data on the quality of water both before and after its treatment.* The federal Safe Drinking Water Act amendments adopted in 1986 require the EPA to monitor for a number of chemical compounds in water, and to add monitoring for 25 new compounds each year. This monitoring would provide valuable data.

Wastes

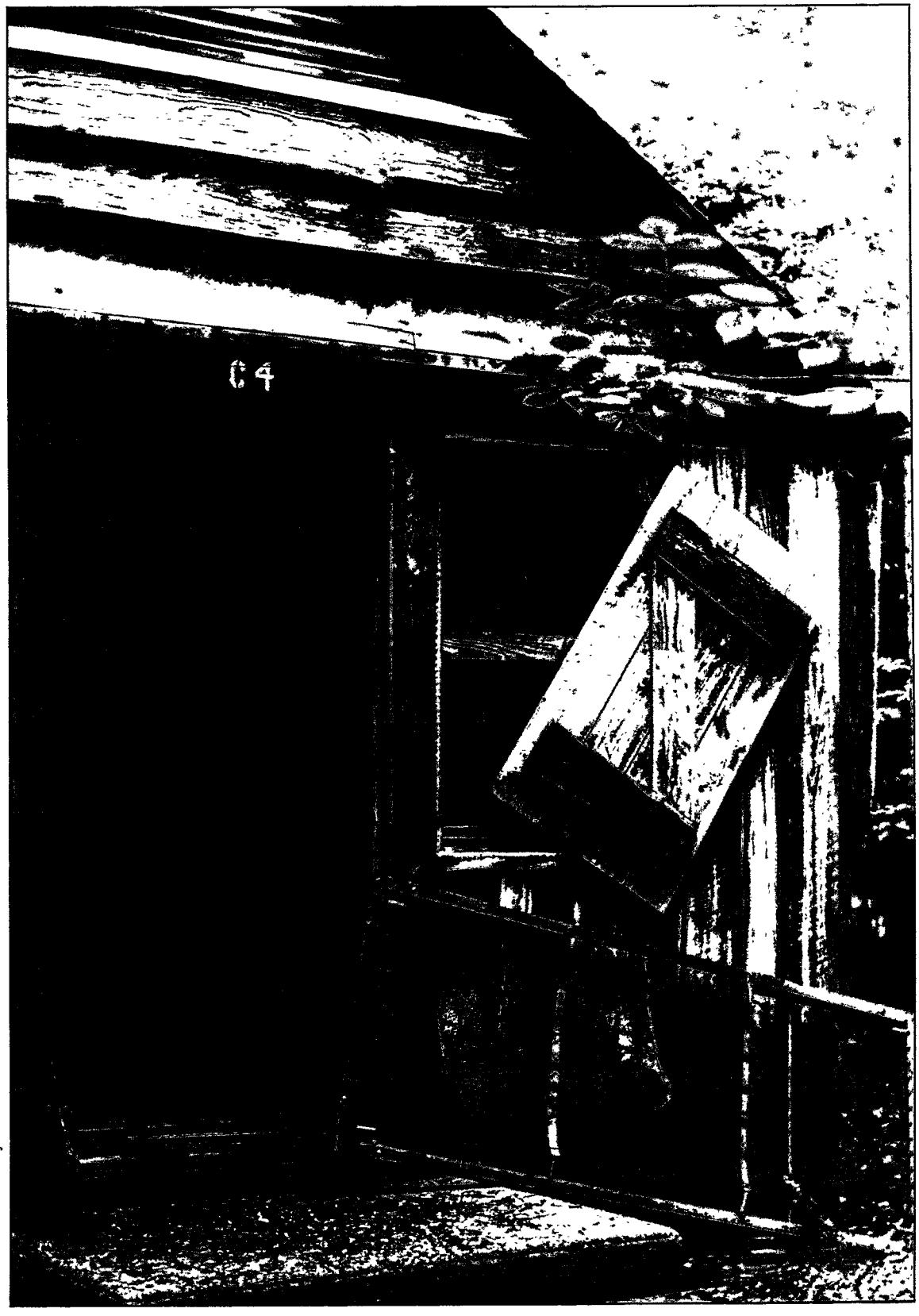
15. *The Index should also contain basic data on the generation, handling, storage, treatment, and reduction of various types of wastes.* These wastes include municipal solid wastes; hazardous wastes; low-level radioactive wastes; and high-level radioactive wastes (see "Resources At Risk: Environmental Policy in North Carolina," *North Carolina Insight*, Vol. 10, No. 2-3, March 1988, for more). The state Department of Human Resources also reported in late August 1988 that hazardous waste production, which had steadily declined in the 1980s, increased by 38 percent from 1986 to 1987. This surge in hazardous waste generation, which can be a sign of an expanding economy, also signals the pressing need for hazardous waste treatment facilities, and detailed data reporting. The Index should report, *by county*, solid waste generation and disposal capacity (whether by landfilling, reduction, recycling, or incineration); hazardous waste generation, transportation, treatment, reduction, or storage; low-level radioactive waste generation, storage, transportation, and monitoring; and high-level radioactive waste production, storage, transportation, and monitoring. The Index should also report annually on changes in the handling, treatment, or storage of each of these types of waste through new facilities or new technology. Index data provided on each of these waste items would provide a clearer picture of the impact of waste on the state's environment, and would show trends in environmental progress or degradation.

16. *The Index also should develop indicators that measure improvement in waste recycling, reduction, and prevention.* The Index could correlate the reduction in solid waste production with the savings in acre/feet of municipal landfills, for instance. In radioactive wastes, the Index could compare the kilowatts generated and the amount of low-level and high-level waste generated in producing that power.

Wildlife Resources

17. *The Index should develop annual data that would illustrate the condition of North Carolina's wildlife resources.* This data could include annual estimates of specific population of endangered wildlife; of game and non-game animals, of marine and aquatic life, and of waterfowl. In addition, the Index should report on state and private acreage specifically set aside for wildlife habitat, including wetlands and natural areas, to show trend data indicating whether natural habitat is declining or growing.

The research for this project was supported by a grant from the John Wesley and Anna Hodgin Hanes Foundation of Winston-Salem.



North Carolina Division of Parks and Recreation

Cabin in disrepair at Umstead State Park in Wake County

North Carolina's State Parks: Disregarded and in Disrepair

By Bill Krueger and Mike McLaughlin

More than seven million people visit North Carolina's state parks and recreation areas each year—solid evidence that the public supports its state park system. But for years, North Carolina has routinely shown up at or near the bottom in funding for parks, and its per capita operating budget currently ranks 49th in the nation. Some parks are yet to be opened to the public due to lack of facilities, and parts of other parks are closed because existing facilities are in a woeful state of disrepair. Indeed, parks officials have identified more than $113 million in capital and repair needs, nearly twice as much as has been spent on the parks in the system's 73-year history. Just recently, the state has begun making a few more gestures toward improving park spending. But the question remains: Will the state commit the resources needed to overcome decades of neglect?

Wedged between an interstate and a major highway in the narrowing strip of undeveloped property that separates the bustling cities of Raleigh and Durham lies a refuge from commercialization called William B. Umstead State Park.

The 5,400-acre oasis has become an easy retreat to nature in the midst of booming growth. But park Superintendent Edwin Littrell says decades of underfunding by the state are taking their toll on a park that serves more than a half-million visitors a year.

Park rangers across North Carolina are in the same predicament. They struggle to keep up appearances, but the money just isn't there.

"With the use of a lot of innovative and creative methods of maintaining and operating the parks, we are just barely keeping our heads above water," says Littrell. "Fairly frequently we are taking a big gulp of it and eventually, we are going to drown."

Visitors probably don't realize that about half the trails at Umstead—10 miles out of a 22-mile system—have been closed to the public because they are in such poor shape. They don't see the park's water lines, which were built more than 40 years ago and lose about 5,000 gallons a week through leaks. They don't see Littrell trying to figure out how to position his staff of five rangers to patrol two separate sections of the park, pick up trash, clean restrooms and bathhouses, and maintain dozens of deteriorating buildings. "I've got a total of 166 buildings—most of them built between 1933 and 1943," says Littrell. "I've got buildings with five generations of patches—places where patches were put on the patches that were holding the patches on the patches that were put on the patches. It's estimated that over $8 million is needed just to repair this park, and I haven't seen a piece of it yet."

Park superintendents throughout the state park system recount similar horror stories. Supporters of the parks say they have suffered over the years from inadequate funding, haphazard management, and struggles between the General Assembly and the executive branch. The problems have been well documented.

A 1968 report by the Research Triangle Institute established the need for expansion of park holdings and laid the groundwork for the General Assembly to add 10 parks during the 1973 session and enlarge the state's 10 existing parks.[1] Yet a 1973 report by the Legislature's Fiscal Research

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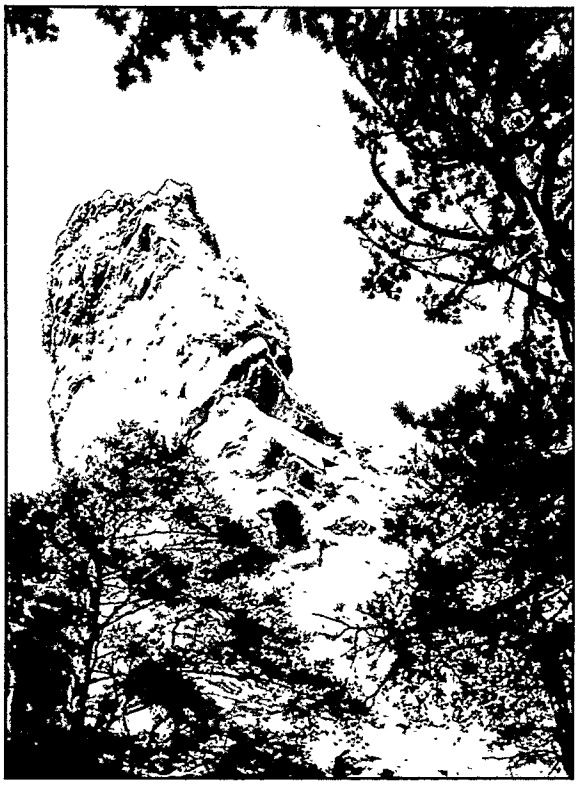
Bill Krueger is a reporter covering state government for The News and Observer *of Raleigh. Mike McLaughlin is associate editor of* North Carolina Insight.

Division found the parks in a woeful condition of disrepair.[2] *New Directions*, a 1979 report by the Legislative Study Committee on State Parks, laid out an ambitious five-year plan outlining land acquisition goals and park-by-park needs for roads, utilities, facilities, and new staff.[3] But *Parks and Recreation in North Carolina 1984*, a report compiled by the Department of Natural Resources and Community Development, found the state had again fallen short. The report cited a host of needs, including more staff, land acquisition to protect the integrity of the state parks, a more extensive trail system (the report noted that 72 percent of existing trails were located within the mountain regions, where less than 13 percent of the state's population resides), and a more aggressive program of designating Natural and Scenic Rivers to preserve them from development.[4] Subsequent reviews found the plight of the park system had gone from bad to worse. "North Carolina's parks and recreation system is in generally deplorable condition, is a burden to the full development of the state's tourism industry, and is inarguably a worst-case example of the abuse of a public trust and the abdication of responsibility," the State Goals and Policy Board says in its May 1986 report to Gov. Jim Martin.[5] The report goes so far as to suggest that the state use prison labor to get its ailing park system up to snuff.[6]

Hanging Rock State Park is one of the state's oldest and most popular attractions



North Carolina Division of Parks and Recreation

The parks have enjoyed increased attention since the board's 1986 report, but State Auditor Ed Renfrow still concluded in an audit released in January 1988 that "the basic system needs for repairs and renovation and park development are so extensive that continued increases in funding will be required to protect the state's investment and implement reasonable development plans."[7] As Renfrow notes in the audit report on the management of the state park system, state officials have identified more than $100 million in capital improvements needed at existing parks. Renfrow calls for a "significant commitment by the General Assembly over several years" to increased funding for parks.[8]

Attracting more than seven million visitors a year, North Carolina's park system stretches from the almost 1,500 acres in Mount Mitchell State Park in the west to the 385 acres of Jockey's Ridge State Park in Nags Head on the coast. The system, begun in 1915 with the establishment of Mount Mitchell State Park, now consists of 54 units and 124,532 acres. That includes 29 state parks, nine natural areas, and four recreation areas (See Table 1, p. 34).

But many of those properties either are closed to the public or in only partial use because of inadequate facilities. Mitchell's Mill is a 67-acre state park in eastern Wake County that few people have enjoyed because state officials have not been able to find the money to clear trails there. So it sits, unmarked, with its entrances blocked to vehicles by large stones. The same goes for Rolling View Recreation Area at Falls Lake in Durham County.

Starving the Parks

Although it ranks 21st in total state park acreage, North Carolina ranks 49th among the states in per capita funding for its state parks, according to the National Association of State Park Directors Annual Information Exchange. While other southern states such as Georgia and Tennessee spend $2.85 and $6.36 per person on parks, respectively, North Carolina spends a meager $1.12 a person. Neighboring South Carolina spends $3.96 a person, and Kentucky, which views parks as an economic development tool, spends $13.72 a person. Only Virginia, at $1.06 a person, spends less than North Carolina, and the national average is $4.08 (See Table 2, p. 42).[9] "The state park system in North Carolina has always been in last place," says William W. Davis, director of the state Division of

Parks and Recreation. "There's only one way, and it's up. Anything we do is an improvement. The concept of a state park system in North Carolina has not been well defined. It's been a citizen effort, not a state effort."

Indeed, were it not for the generosity of well-to-do property owners and the public works projects of the Depression, North Carolina might find itself with but a handful of state parks. As much as 70 percent of the system was acquired through donations to the state. Most of the visitors centers, campgrounds, and rangers' residences were built in the 1930s and 1940s by the federal Civilian Conservation Corps and the Works Progress Administration. The list includes those at Umstead, Hanging Rock State Park in Stokes County, and Morrow Mountain State Park in Stanly County.

North Carolina Division of Parks and Recreation

Canoeists at Merchants Millpond State Park in Gates County

Since then, efforts to nurture a state park system have been minimal. From 1915, the year the system was established, through 1973, a mere $24,250 was spent by the state to acquire land for state parks. The public purse snapped open during the administration of Republican Gov. Jim Holshouser, with $11.5 million appropriated by the legislature for land acquisition in 1973-1974, and $5.5 million appropriated for park land in 1974-1975. Yet funding for park lands slowed to a relative trickle during the two terms of Democratic Gov. Jim Hunt and did not pick up again until Republican Gov. Jim Martin took office in 1985.[10] (For more on differences in funding for state parks in Democratic and Republican administrations, see *The Two-Party System in North Carolina*, a special report published in December 1987 by the North Carolina Center for Public Policy Research and the University of North Carolina Center for Public Television.)

In the park system's 73-year history, only $38.3 million has been spent for land acquisition and $27.2 million has been spent to develop the parks—a total of $64.7 million. "Historically, funding has been up and down," says Bill Holman, a lobbyist for the Conservation Council of North Carolina and the N.C. chapter of the Sierra Club. "Parks didn't have a high priority for several years. It is a park system with tremendous potential but in poor condition."

The public has in recent years been beset by reports of maintenance woes brought on by underfunding of state parks, including sewage running down Mount Mitchell, boat docks collapsing at Carolina Beach State Park, and methane in the bathrooms at Waynesboro State Park in Wayne County.[11] The well-publicized problems in the parks have led to a host of calls from Tar Heel editors for more money. *The News and Observer* of Raleigh, for example, in April 1987 said, "North Carolina should be shamed by the lack of care given its state park system," and said the legislature had "for far too long treated the state park system as an unwanted stepchild."[12] The *Winston-Salem Journal*, in an editorial printed a month later, called North Carolina's per capita funding of its state park system an "embarrassing disgrace."[13]

Davis says the paltry funding of parks has been in part due to limited legislative involvement in the creation and funding of park units. The Council of State, an 11-member panel of statewide elected officials, typically accepted donated land to be assigned by the executive branch to a state agency for management, says Davis. "There was no local delegation involvement or committee system involvement, so they said, 'Tough potatoes. We're not going to give you money to capitalize.'"

In addition, says Davis, the state's agrarian heritage has worked against the full development of

Table 1. North Carolina's Parks and Recreation System

Unit	Size	Public Access	Activities	Capital Needs
Parks (29)				
1. Bay Tree Lake[1]	609 acres	no	none	$ 335,165
2. Boone's Cave	110 acres	yes	b,f,h,p	18,668
3. Carolina Beach	1,720 acres	yes	b,c,f,h,p	1,843,136
4. Cliffs of the Neuse	748 acres	yes	b,c,f,h,p,s,v	2,471,757
5. Crowders Mountain	2,083 acres	yes	c,f,h,p	3,127,977
6. Duke Power	1,447 acres	yes	b,c,f,h,p,s	7,386,921
7. Eno River	2,064 acres	yes	b,c,f,h,p	3,211,981
8. Fort Macon	389 acres	yes	f,h,p,s,v	6,720,000
9. Goose Creek	1,327 acres	yes	b,c,f,h,p,s	2,838,361
10. Hammocks Beach	892 acres	yes	c,f,h,p,s	451,852
11. Hanging Rock	5,852 acres	yes	b,c,f,h,p,s	1,538,010
12. Jockey's Ridge	393 acres	yes	h,p,v	463,560
13. Jones Lake	1,669 acres	yes	b,c,f,h,p,s	2,277,427
14. Lake James[2]	565 acres	yes	b,c,f,h,p,s	706,997
15. Lake Waccamaw	1,508 acres	yes	c,f,h,p,s	4,172,436
16. Medoc Mountain	2,287 acres	yes	b,c,f,h,p	4,459,100
17. Merchants Millpond	2,762 acres	yes	b,c,f,h,p	2,609,200
18. Morrow Mountain	4,693 acres	yes	b,c,f,h,p,s,v	6,897,085
19. Mount Jefferson	555 acres	yes	h,p	1,480,500
20. Mount Mitchell	1,677 acres	yes	c,h,p,v	416,875
21. New River[3]	531 acres	yes	b,c,f,p	3,566,995
22. Pettigrew	850 acres	yes	b,c,f,h,p	3,717,884
23. Pilot Mountain	3,703 acres	yes	b,c,f,h,p	7,883,672
24. Raven Rock	2,805 acres	yes	c,f,h,p	11,762,984
25. Singletary Lake	649 acres	yes	c,f,h,s	2,813,767
26. South Mountains	6,586 acres	yes	c,f,h,p	2,205,458
27. Stone Mountain	13,378 acres	yes	c,f,h,p	2,675,584
28. Waynesboro	138 acres	yes	f,h,p	195,776
29. William B. Umstead	5,229 acres	yes	b,c,f,h,p,s	7,784,219

NOTES:

[1]Bay Tree is now an underdeveloped state park. When facilities now planned are built, Bay Tree Lake will be designated a state recreation area.

[2]Lake James State Park is scheduled to open for public use in the spring of 1989. Public access and activities listed will be available at that time.

[3]Natural and Scenic Rivers legislation limits future acquisition to five acres in fee simple ownership and 1,260 acres in easements.

KEY

b.....boating c.....camping f.....fishing
h.....hiking p.....picnicking s.....swimming
v.....visitors center / museum

Land Needs*	County
**	Bladen
**	Davidson
**	New Hanover
21 acres	Wayne
1,656 acres	Gaston
**	Iredell
945 acres	Durham, Orange
**	Carteret
258 acres	Beaufort
**	Onslow
2,221 acres	Stokes
**	Dare
**	Bladen
**	McDowell, Burke
0 acres	Columbus
211 acres	Halifax
138 acres	Gates
**	Stanly
**	Ashe
**	Yancey
5 acres	Ashe, Alleghany
0 acres	Washington, Tyrell
**	Surry, Yadkin
2,577 acres	Harnett
**	Bladen
1,480 acres	Burke
4,382 acres	Wilkes, Alleghany
**	Wayne
349	Wake

— *continued on page 36*

* The Division of Parks and Recreation is currently updating its priority list for future land acquisition needs. The figures under the column "land needs" are based on a 1978 priority list and are presented to generally illustrate future needs. State parks officials estimate total land acquisition needs are in excess of 23,000 acres.

** Land needs currently being evaluated.

the state park system. "Farmers have difficulty envisioning the need to set aside land for parks," he says. A generous allotment of federally controlled public lands may also have obviated the need for state parks in the minds of some elected officials, says Davis. Substantial portions of the Great Smoky Mountains and the Blue Ridge Parkway lie within the boundaries of North Carolina. The state is also home to four national forests that provide camping and hiking opportunities and to miles of pristine beaches along the Cape Hatteras and Cape Lookout National Seashores. No other southeastern state can boast of such precious federal resources, and many of these treasures were acquired with the generous support and cooperation of state government. "The greater federal presence . . . eased the pressure on the state," says Davis. "Cape Hatteras was at one point a state park. The state made a conscious decision that the state park system was not up to handling it (and transferred the land to the federal government). The Smokies, the state had to buy the land."

North Carolinians who live in or near urban areas also have access to parks operated by 159 city recreation departments and 59 county recreation departments—perhaps the most expansive network of local parks in the nation. Such parks help make up for the lack of state parks, particularly in the Piedmont Triad cities of Greensboro, Winston-Salem, and High Point. The closest state parks to these areas are in Stokes (Hanging Rock Park) and Surry counties (Pilot Mountain). The lack of state park facilities in the region prompted the General Assembly to toy with the creation of a Triad State Park in the late 1970s, but representatives of local government never could agree on what kind of park they wanted, or where to put it. When one representative suggested that a state-owned theme park be developed in an area near Kernersville, the idea was hooted down and the proposal for a Triad State Park was dropped.

Jim Stevens, Davis' predecessor as state parks and recreation director, says North Carolina has lagged in park funding because other states got a head start. "We've been playing a game of catch-up," says Stevens. "Many older systems received more funding earlier in their existences than we have." In 1929, in fact, the General Assembly set out a policy that where possible, "park acquisition would not be funded by the state, but would be purchased or donated by 'public spirited citizens.'"[14]

That slammed shut the state coffer for four decades, but Kirk Fuller, a former public informa-

Table 1. North Carolina's Parks and Recreation System, *continued*

Unit	Size	Public Access	Activities	Capital Needs
Recreation Areas (4)				
30. Falls Lake	950 acres	yes	b,f,p,s,	$ 103,158
31. Fort Fisher	287 acres	yes	f,h,s,v	418,612
32. Jordan Lake	1,925 acres	yes	b,c,f,h,p,s	2,836,241
33. Kerr Lake	3,000 acres	yes	b,c,f,h,p,s	5,393,654
Natural Areas (9)				
34. Bald Head Island	1,249 acres	no	h	NA
35. Bushy Lake	1,341 acres	no	h	NA
36. Chowan Swamp	6,066 acres	no	h	NA
37. Dismal Swamp	14,344 acres	no	h	NA
38. Hemlock Bluffs	85 acres	no	h	NA
39. Masonboro Island	106 acres	no	h	NA
40. Mitchell's Mill	83 acres	no	h	NA
41. Theodore Roosevelt	265 acres	yes	h,v	NA
42. Weymouth Woods	676 acres	yes	h,v	409, 635
Rivers (3)				
43. Horsepasture River	13 miles	no	b,f	NA
44. Linville River	13 miles	no	b,f	NA
45. New River*	26.5 miles	yes	b,f	NA
Trails (1)				
46. Mountains-to-Sea[4]	210 miles	yes	h	NA[4]
Lakes (8)				
47. Bay Tree Lake***	1,418 acres	(See line 1)		
48. Jones Lake***	224 acres	(See line 13)		
49. Lake James***	6,510 acres	(See line 14)		
50. Lake Phelps*** (Pettigrew)	16,600 acres	(See line 22)		
51. Lake Waccamaw***	8,938 acres	(See line 15)		
52. Salters Lake*** (Jones Lake)	315 acres	(See line 13)		
53. Singletary Lake***	649 acres	(See line 25)		
54. White Lake	1,068 acres	no	b,f	NA

NOTES:

[4]The N.C. Division of Parks and Recreation is seeking right-of-way access on private land to link sections of the trail.

* The Division of Parks and Recreation is currently updating its priority list for future land acquisition needs. The figures under the column "land needs" are based on a 1978 priority list and are presented to generally illustrate future needs. State parks officials estimate total land acquisition needs are in excess of 23,000 acres.

** Land needs currently being evaluated.

*** Lake or river is part of a park or recreation area. If the name of the park or recreation area differs from the lake or river, the park name follows in parentheses.

Land Needs*	County
NA	Wake, Durham
**	New Hanover
NA	Chatham, Wake,
NA	Vance, Warren
**	Brunswick
785 acres	Cumberland
**	Gates
**	Camden
**	Wake
**	New Hanover
55 acres	Wake
**	Carteret
**	Moore
NA	Transylvania
NA	Burke
**	Ashe, Alleghany
**	NA
**	Bladen

KEY

b.....boating c.....camping f.....fishing
h.....hiking p.....picnicking s.....swimming
v.....visitors center / museum

Source: N.C. Division of Parks and Recreation
Chart prepared by Melissa Jones, N.C. Center intern

tion officer for the Division of Parks and Recreation, says the attitude of North Carolina officials toward purchasing land shifted in the late 1960s and early 1970s. "It was a realization of a movement across the country that the nation was losing unique natural areas and that the state could not depend on the goodwill of the people," says Fuller. "It had to come in and purchase unique natural areas to preserve them."

Still, Stevens says during the 40-year funding drought, the state was able to assemble an impressive portfolio of parks and natural areas, and the result was a bargain for North Carolina citizens. "We haven't spent a tremendous amount of money, and at the same time, we've made quite a bit of headway," he says.

Another shortcoming of the largely donated system is that the parks are not equally distributed among legislative districts. Rep. David Diamont (D-Surry), for example, has five state parks in his northwestern North Carolina district, while the majority of state lawmakers have none, says Davis. Diamont's five-county 40th House District includes Pilot Mountain, New River, Mount Jefferson, Hanging Rock, and Stone Mountain parks, and he is an aggressive advocate of the state park system. "In Kentucky," says Davis, "every legislative district has a state park. In Georgia, every legislative district has a state park. As a result, the legislature is more responsive." North Carolina's fragmented network of state parks means fewer pork barrel appropriations for capital projects and less general fund support for operating expenses.

The funding shortfall is felt on the frontlines, where rangers at understaffed parks struggle to keep the state's facilities open and presentable to the public. Kerr Lake State Recreation Area, opened in 1952 on land leased from the federal government, has in recent years been among the state's most heavily visited parks. The park features seven campgrounds at separate locations along the shores of Kerr Lake. But park Superintendent Robert Kirk says electrical hookups are outdated and not strong enough to power the homes on wheels the campgrounds must serve. He says waterlines are brittle and often rupture. And then there are the sagging ceilings and peeling paint on bathhouses that leave visitors with a poor impression and force the closing of some facilities deemed structurally unsound. "Some of the buildings are so bad we had to condemn them and close them down," says Kirk, "and people are increasing in number, not decreasing. We need to be adding buildings. This is what the legislature is giving for

Mike McLaughlin

Condemned picnic shelter at Kerr Lake State Recreation Area in Vance and Warren counties

their constituency." Kirk says Kerr Lake facilities need a complete overhaul, with new electrical and water systems for the campgrounds and renovation or replacement of bathhouses, picnic shelters, and refreshment stands.

"Last summer, a little girl was just walking across a campsite barefooted, and she was getting shocked just walking across the ground" due to a short in an electrical hookup, says Kirk. "It's really discouraging, to tell you the truth, but this is what the citizens are getting for their tax dollars."

Promises for Parks

There are indications that the long-neglected state parks are beginning to get some attention. A 1985 legislative study commission identified $50 million in property that should be acquired to complete and protect existing parks. In response, Governor Martin embraced a $50 million bond referendum. The legislature instead set aside $25 million, although only about $16.5 million went for its avowed purpose. In the 1987 legislative session, the General Assembly appropriated $3.8 million for capital improvements, an increase of more than $1 million over the $2.75 million budgeted for the 1986 fiscal year, which had represented more than a two-fold increase over the 1985 appropriation.

Sen. Tony Rand (D-Cumberland), the Democratic nominee for lieutenant governor, has made a campaign promise of spending $20 million on land acquisition and capital improvements over the biennium that follows the 1988 election. "I've talked about when I am lieutenant governor doing everything I can for state parks," says Rand. "It's a shame to let something that pretty and important to our people languish as it does."

"We're going to get off the bottom in per capita spending," says Sen. Henson Barnes (D-Wayne), chairman since 1985 of the legislative Study Commission on State Parks. "In a few short years, North Carolina is going to be offering an excellent park system to the people of the state." Barnes' study commission is scheduled to make recommendations to the 1989 session of the General Assembly. He says he expects those recommendations to include a means of putting the park system on a better financial footing. "The bottom line is money," says Barnes. "To build a good business, to build a good home, to do anything, you've got to first assess what the needs are. Once you assess the needs, you've got to determine how to access the money supply. The legislature is just like other folks. Show them a place to go, and they will find a way to get there."

Barnes says the recommendations likely will include "some small tax," with the revenue dedicated strictly to park use. According to Davis, 29 states have revenue sources specifically earmarked for parks. These sources include taxes, fees and licenses, donations, bonds, and lottery proceeds, and they provide a stable source of funding. Barnes specifically mentioned an increase in the tax for deed transfers, which is $1 per $1,000 in real property transactions. But the key to completing the parks puzzle, says Barnes, is increased public awareness of the need for more money. That will pressure elected officials to move the parks higher on the agenda when the budget pie is divided. "The parks have built a constituency in North Carolina, and it's for a good cause, too," says Barnes. "For a number of years, the park system had no constituency pushing it, supporting it."

Holman says, "There is growing public concern about the conditions of state parks." And while he says he finds the prospects for the system to be encouraging, he acknowledges that "it may take awhile" for the system's potential to be realized. "What is needed is for the Governor and the General Assembly to give a high priority to the state park system—a large appropriation for many years," says Holman. "One thing environmental-

ists have sought—so far without success—is a dedicated source of revenue for parkland, gamelands, and natural areas. Several states use a land [or deed] transfer tax."

Another option might be expansion of user fees with the stipulation that the money be plowed back into the state parks. (A 1987 bill sponsored by Barnes would have required that fees generated in the parks be channeled into a fund for operations, capital improvements, and land acquisition. But the bill was referred to the Senate Finance Committee and never acted upon.) Renfrow's audit notes that in a comparison among 13 southeastern states, North Carolina's state parks in fiscal year 1986 generated the least amount of revenue as a percentage of operating budget.[15] North Carolina remained last among the southeastern states in fiscal year 1987, when the state through various fees and charges to users took in revenue equal to 16.4 percent of its $7.2 million budget. That compares to Louisiana's 19.3 percent and Virginia's 24.8 percent at the low end of the scale, and, at the top of the scale, Delaware at 72.4 percent, Kentucky at 62.3 percent, and South Carolina at 61.6 percent. Renfrow offers a caveat that many neighboring states provide resort-style facilities such as lodges and golf courses that boost both operating costs and revenues and make comparisons between states difficult. But he notes that at $7 a day for a site with full hookups and $5 for a primitive site, North Carolina's camping fees are about 40 percent below the private market.[16] The State Goals and Policy Board, in its May 1986 *Report to the Governor*, recommended increased user fees for such things as cabins, campsites, and boat rentals as one means of boosting park revenue.[17]

Park advocates say potential is limited for expansion of user fees beyond those already in place. "There are only a few parks that would justify the luxury of user fees," says Holman. "At some parks, it would cost more to collect than you would raise. At Mount Mitchell and Jockey's Ridge, you could collect a lot of revenue. Conservation groups have not taken a position in support of or opposition to entrance fees. It's an ongoing debate."

A major increase in fees and charges, says Holman, could shut the park entrance gates to some of the state's less affluent citizens. "You don't want to exclude people from enjoying the parks," says Holman. "You want the parks to be open to all because a lot of private facilities are expensive. You need some places where just regular folks can go, camp out, have a picnic, and have an outdoor experience."

Barnes says the parks could turn to user fees in selected areas, but adds, "In general we want to say the parks should be like clean air and clean water—they should be freely enjoyed by all North Carolina citizens."

Jack Betts

Crumbling grill and eroding shoreline at Kerr Lake State Recreation Area

The Development Debate

Recent discussions about state parks have focused on how to use the little money available. The primary question has become whether to use the money to maintain and develop existing parks or to buy more land before land prices become prohibitive throughout much of the state. State parks officials say at least 23,000 additional acres are needed to protect existing parks. Stevens says in a series of nine public hearings conducted across the state in 1984, the chief priority expressed by those attending the hearings was maintaining the natural integrity of the park system. Acquiring enough land to provide buffers from development is one means of doing that, says Stevens. Environmental groups tend to favor land acquisition, while current state parks officials contend that more must be done to maintain and open to the public land already in the system. "You can always develop facilities later," says Holman. "Often you can't buy

Cash Crunch Hamstrings Programs Boosting Trails, Rivers, Natural Areas

While North Carolina has inarguably failed to hold its own in funding for state parks, officials say other programs within the Division of Parks and Recreation are even more cash starved.

The worst case example may be the *Natural and Scenic Rivers program.* The program began with a flourish in 1971 and aimed at preserving qualifying free-flowing rivers in their natural state.[1] Segments of more than 100 rivers were identified through surveys as worthy of consideration, but so far portions of only four rivers have been designated. A lone Parks and Recreation staff member dedicates one-sixth to one-seventh of his time to the program. "We have a keen river interest," says Kim Huband, the division planner responsible for maintaining the program. "We just have no staff — no resources to do it." Huband says the Natural and Scenic Rivers program has been reduced to the passive role of pressing for designation of a river when a request comes from county commissioners and there is unanimity among the local legislative delegation. Segments of the New River and the Linville River in the northwest, the Horsepasture River in the southwest, and the Lumber River in the southeast have been designated. "Obviously, you don't have a representative sample of rivers —by any stretch of the imagination—protected," says Huband.

The *Natural Heritage Program,* which aims at identifying and protecting the state's most outstanding natural areas and endangered natural resources—also is severely underfunded, state parks and recreation officials say.[2] Chuck Roe, the program's director, says inventories have been completed in only 10 of the state's 100 counties of natural resources worthy of protection. He says the program has in its 12-year history managed to secure conservation agreements to preserve 240 areas. But Roe says the program maintains a data bank that includes some 7,000 individual records of the locations of special ecological features across North Carolina, with 850 of them on a priority list for preservation. "If we were successful in systematically and thoroughly surveying the state's resources, that number would obviously climb," says Roe. He says the "frustration level is high" within the program because the legislature has rejected efforts at expanding it to complete the county-by-county inventory and establish and manage nature preserves.

The *N.C. Trails System,* by contrast, got a boost in the 1987 General Assembly when lawmakers approved the hiring of four regional trails coordinators. Duties of the coordinators include work on the Mountains-to-Sea Trail, which upon completion will traverse the entire state, connecting existing park lands and natural areas where possible. The coordinators also are to provide technical assistance for the development of trails in state parks and on other public lands, and to work with cities, counties, and recreational interest groups to develop local hiking trails, greenways, and the like. State Trails Coordinator Darrell McBane says the major weakness of the program is its almost complete reliance on volunteer labor. "We're asking volunteers to do a great deal of the work," says McBane. "If trails are to be developed, the people power has got to come from volunteers. We're asking a great deal of the volunteer, but there are a number of successes."

—Mike McLaughlin

FOOTNOTES

[1] *Parks and Recreation in North Carolina 1984,* report prepared by the Department of Natural Resources and Community Development for distribution at a 1984 series of public hearings on the future of the state parks system, p. 11.

[2] *Ibid.,* p. 9.

the land later. It doesn't make much sense to build a picnic area or a new campground in a park if someone puts in a landfill or a high-rise condominium just across the creek."

Davis says, "To simply buy land and do nothing with it is not stewardship," but he and Holman agree that in the scrap for funds, the issue has been improperly posed as an either-or question. "The answer to that is both," says Davis. He says there are a number of areas in which land acquisition is incomplete and park integrity is threatened by development. At Carolina Beach State Park, for example, condominiums are being proposed on a parcel of land bounded by park property. Commercial development along U.S. 70 threatens Umstead State Park, and in Burke County's South Mountains State Park a private horse farm is planned so that riders can venture onto public lands. "There'll be hell to pay for the water quality," says Davis.

Besides buying up land, Holman says the state should encourage the counties to use zoning powers to protect the integrity of the state parks. "One county proposed siting a landfill near a state park, and that's not a compatible use," says Holman. "Another county allowed the siting of a drag strip near a state park . . . and Wake County allowed a rock quarry on the west side of Umstead."

There is also debate over what types of parks are wanted in North Carolina. The state typically has sought to provide roads, campgrounds, and visitors' centers at its parks, a dramatic contrast to Kentucky, where many parks are highly developed with cottages, golf courses, and gift shops. Environmentalists argue the need to maintain a delicate balance between development for public use and conservation. Ray Noggle, president of Friends of the State Parks, a citizen support group that lobbies the legislature on park-related issues, says North Carolina already has tilted too much toward the pursuit of fee-generating facilities such as swimming lakes. "The people in the field, I think they're first class," says Noggle. "Downtown, they think the best way to serve the people is to turn the parks into Disneylands and make money."

"Nowhere in the budget does it call for building a resort," says Davis. "It's to provide a road, provide a trail, provide a rest room. It's not like we want to build Taj Mahals. We don't need motels and gas stations. But we do need recreational activities so people will want to stay."

Barnes says North Carolina is not aspiring to anything as elaborate as the Kentucky parks. "We do want a pleasant place for the people of North Carolina to go," he says. "We want them to have access to good, clean facilities." As simple as that sounds, state park officials say the parks are in such poor condition that they have identified $113.5 million in capital and repair needs. Environmentalists say the list is exaggerated but concede there are pressing needs. Holman says visitors to the state's parks are often disappointed to find no picnic areas, or portable toilets instead of rest rooms. Davis points to examples such as Hanging Rock State Park, where soil erosion has caused drops as deep as six feet on trails. Guard rails and other road improvements are needed at both Pilot Mountain and Morrow Mountain, he says, and at Lake Waccamaw State Park, there are no flush toilets. "They probably have the only handicapped-accessible pit privy in the state," says Davis.

Additional needs identified by state officials include $463,000 to renovate the septic tanks at Cliffs of the Neuse State Park, $950,000 to develop a picnic area at Stone Mountain State Park, $1.4

—continued on page 44

Cliffs of the Neuse State Park in Wayne County

North Carolina Division of Parks and Recreation

Table 2. Comparison of State Parks Systems, By State

	Total Acreage	Rank	Annual Visitation	Rank	Operating Budget Per Capita	Rank	Revenues	Percentage of Operating Revenue From Fees	Rank
Alabama	48,377	38	6,099,318	31	$ 3.7818	22	$ 8,798,779	56.98%	10
Alaska	3,110,268	2	5,289,607	36	9.2109	3	55,045	1.14	50
Arizona	37,040	43	2,088,101	45	1.5939	47	1,394,500	25.84	34
Arkansas	43,982	40	7,147,970	28	6.7284	5	8,799,355	54.77	11
California	1,268,955	3	72,856,593	1	4.8701	17	32,254,633	23.94	38
Colorado	287,309	6	7,924,132	24	2.3781	37	8,634,696	110.16	1
Connecticut	181,223	17	7,706,224	26	3.1143	31	2,282,174	22.82	41
Delaware	11,122	49	2,737,618	43	5.9912	9	2,916,220	72.43	5
Florida	278,442	7	14,290,383	14	1.7499	45	10,458,784	49.71	16
Georgia	61,001	33	13,310,355	15	2.8553	32	8,569,297	48.23	17
Hawaii	24,881	46	20,199,842	11	4.3259	19	1,192,871	25.46	35
Idaho	46,808	39	2,280,752	44	2.5327	36	815,075	32.25	29
Illinois	363,338	4	35,190,355	7	1.9619	41	2,123,292	9.34	48
Indiana	54,062	34	9,884,728	20	1.7979	42	7,434,438	74.76	4
Iowa	52,025	37	10,023,624	19	1.7741	43	2,161,831	43.00	20
Kansas	36,918	44	4,451,523	37	1.7723	44	1,928,985	43.96	19
Kentucky	41,501	41	24,210,000	9	13.7210	1	31,858,033	62.30	7
Louisiana	37,999	42	740,243	50	1.1500	48	990,463	19.31	43
Maine	71,761	32	2,071,752	46	3.2832	27	1,266,344	32.49	27
Maryland	215,945	14	6,890,264	29	3.3621	25	5,534,799	36.30	25
Massachusetts	265,903	9	12,239,770	17	3.1973	30	6,050,019	32.32	28
Michigan	252,626	11	22,845,271	10	2.1338	39	13,951,023	71.07	6
Minnesota	3,441,061	1	6,001,004	32	2.7119	34	4,596,000	39.91	23
Mississippi	22,490	47	4,433,670	38	3.5169	24	4,245,655	45.99	18
Missouri	106,682	27	12,442,359	16	3.2344	28	2,323,952	14.08	47
Montana	52,261	36	4,195,200	39	3.5420	23	466,733	16.29	46

Table 2. Comparison of State Parks Systems, By State, *continued*

	Total Acreage	Rank	Annual Visitation	Rank	Operating Budget Per Capita	Rank	Revenues	Percentage of Operating Revenue From Fees	Rank
Nebraska	147,948	19	8,412,954	23	$ 4.6904	18	$3,956,632	52.92%	13
Nevada	144,188	20	3,103,696	42	3.2005	29	756,918	23.49	40
New Hampshire	29,862	45	3,905,900	40	6.4813	7	6,818,757	99.53	2
New Jersey	299,599	5	9,599,129	21	2.6160	35	5,212,947	25.97	33
New Mexico	118,951	25	6,790,527	30	3.9061	21	2,231,100	38.08	24
New York	258,390	10	37,514,000	4	5.6118	12	22,632,000	22.63	42
North Carolina	**124,532**	**21**	**7,151,518**	**27**	**1.1259**	**49**	**1,181,883**	**16.37**	**44**
North Dakota	16,198	48	949,818	48	2.3608	38	639,811	40.33	22
Ohio	193,000	16	68,164,424	2	3.3462	26	9,999,926	27.71	31
Oklahoma	95,470	28	15,655,812	13	5.5695	13	5,605,568	30.76	30
Oregon	89,494	30	37,156,000	5	6.7247	6	6,223,000	33.97	26
Pennsylvania	276,250	8	36,303,046	6	2.8051	33	5,474,577	16.35	45
Rhode Island	9,223	50	5,807,250	33	5.5677	14	1,464,651	26.68	32
South Carolina	79,260	31	7,803,469	25	3.9639	20	8,359,667	61.58	8
South Dakota	113,370	26	5,578,819	34	6.8906	4	2,531,983	51.83	14
Tennessee	120,238	22	24,343,492	8	6.3584	8	15,661,589	50.73	15
Texas	224,667	13	19,925,396	12	1.6298	46	11,107,411	40.59	21
Utah	94,848	29	5,349,791	35	5.8699	10	2,322,155	23.55	39
Vermont	170,678	18	785,797	49	5.6152	11	2,801,402	91.04	3
Virginia	53,747	35	3,634,956	41	1.0651	50	1,557,965	24.78	36
Washington	233,596	12	46,685,652	3	4.8808	16	5,322,902	24.03	37
West Virginia	206,185	15	9,128,716	22	10.3222	2	10,462,431	53.43	12
Wisconsin	119,224	24	11,275,097	18	2.1223	40	6,096,550	59.76	9
Wyoming	119,364	23	1,855,819	47	4.9164	15	101,254	4.20	49

Source: National Association of State Park Directors, *Annual Information Exchange,* April 1988
Chart prepared by Kim Kebschull, N.C. Center for Public Policy Research Intern

North Carolina Division of Parks and Recreation

Visitors Center at Fort Macon State Park in Carteret County

million to develop a visitors center at Umstead State Park, $1.1 million to renovate the shoreline and trails at Morrow Mountain State Park, and $1.2 million to develop trails at Eno River State Park. The list includes the construction of several visitors centers, cabins, campgrounds, and picnic areas.[18]

Thomas Rhodes, secretary of Natural Resources and Community Development, has threatened to shut down parks in past years if the General Assembly refused to allocate more money for repairs. Parts of some are closed for lack of money for repairs or completion.

"Our parks are pretty much in rundown and dilapidated condition," says Davis. "We get numerous complaints." But Davis says the 1988 General Assembly appropriated $1 million in discretionary money for repairs and renovation, the first time such money had been appropriated without earmarking it for a specific project.

Staff Shortage

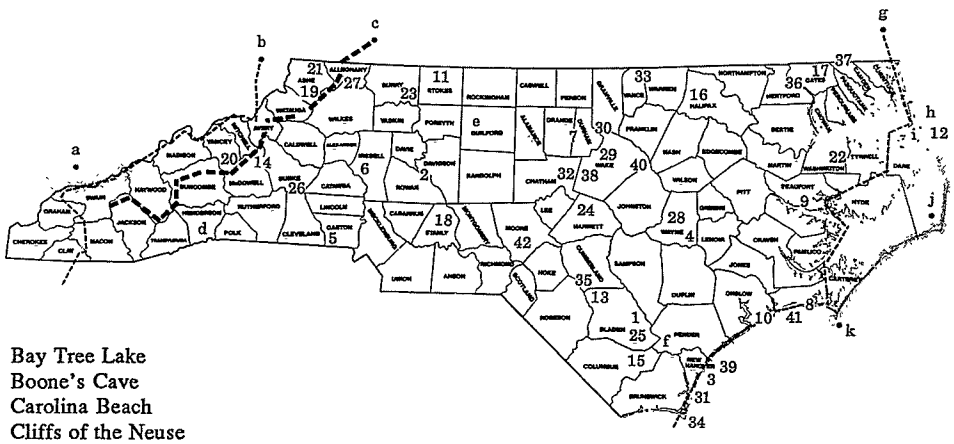
The park system also suffers from staffing shortages, a problem exacerbated by high turnover among rangers. Davis says rangers often are lured away by city and county park systems that offer up to 25 percent higher starting pay and a lighter work load. "They get basically the same salaries as people who are attendants at the rest areas and I resent that," says Bob Conner, immediate past president of Friends of the State Parks. "Many of them are college graduates. I think they deserve better. Some of them qualify for food stamps, and I don't think that's anything to be proud of." (The starting salary for a Park Ranger I is $14,436 and tops out at $22,136, while the starting pay for a Rest Area Custodian I is $13,332 with a maximum salary of $20,412, according to the Office of State Personnel.)

There are 103 field rangers, meaning that most parks are staffed by three or fewer rangers. Six parks have only two rangers, yet the gates are open seven days a week and, in the summer months, 13 hours a day. The long days, combined with restrictions requiring a 40-hour work week, demand that some parks at times be kept open with only part-time or seasonal workers on duty. Indeed, there are almost as many people running the state zoo in Asheboro as there are operating the entire state park system. (The North Carolina Zoological Park is operated by 141 full-time employees, while the Division of Parks and Recreation has 178 full-time employees, according to NRCD officials.) Park rangers grouse about the understaffing but still manage to keep the parks open. "We can get by," says Jody Merritt, superintendent at Fort Macon State Park on Bogue Banks, where a pre-Civil War fort and a public beach draw more than a million annual visitors. "You cut a man's arm off and he'll get by . . . . That's what we had to do for years and years. It just depends on at what degree you want to function."

Only four district naturalists are employed throughout the state park system, and most of the interpretive programs in the parks, such as nature walks, children's programs, and historical tours, are conducted by seasonal employees. "As far as natural facilities and natural areas, we have the finest park system in the United States," says Merritt. "We just need to expand facilities and interpretive services to the public. The schools are starting to demand it."

Rhodes recently told legislators that the system badly needed 22 maintenance workers to help repair state parks. "That could free rangers to be more responsive to other needs," Rhodes told lawmakers. Funding for the maintenance workers was

Figure 1. Existing National Parks, State Parks and Recreation Areas in North Carolina



Parks

1. Bay Tree Lake
2. Boone's Cave
3. Carolina Beach
4. Cliffs of the Neuse
5. Crowders Mountain
6. Duke Power
7. Eno River
8. Fort Macon
9. Goose Creek
10. Hammocks Beach
11. Hanging Rock
12. Jockey's Ridge
13. Jones Lake
14. Lake James
15. Lake Waccamaw
16. Medoc Mountain
17. Merchants Millpond
18. Morrow Mountain
19. Mount Jefferson
20. Mount Mitchell
21. New River
22. Pettigrew
23. Pilot Mountain
24. Raven Rock
25. Singletary Lake
26. South Mountains
27. Stone Mountain
28. Waynesboro
29. William B. Umstead

Recreation Areas

30. Falls Lake
31. Fort Fisher
32. Jordan Lake
33. Kerr Lake

Natural Areas

34. Bald Head Island
35. Bushy Lake
36. Chowan Swamp
37. Dismal Swamp
38. Hemlock Bluffs
39. Masonboro Island
40. Mitchell's Mill
41. Theodore Roosevelt
42. Weymouth Woods

National Park Areas

a. Great Smoky Mountains
b. Appalachian Trail
c. Blue Ridge Parkway
d. Carl Sandburg Home
e. Guilford Courthouse
f. Moores Creek
g. Intracoastal Waterway
h. Wright Brothers Memorial
i. Fort Raleigh
j. Cape Hatteras
k. Cape Lookout

Figure does not include state lakes, state rivers, or state trails. See Table 1, page 34, for detailed information about these and other units.

Source: N.C. Division of Parks and Recreation

included in Governor Martin's 1988-1989 fiscal year budget request but was deleted by the legislature when Martin's revenue estimate fell short. Davis says the positions could have been added despite the revenue shortfall. "The legislature was able to find millions upon millions of dollars for other projects that were not included in the Governor's budget to begin with, let alone eliminated or not considered," he says. "Salaries and benefits for the 22 positions amounted to less than $440,000. In a state budget of $10 billion, that is not a significant amount."

Parks officials had hoped freeing rangers of maintenance duties would help persuade the State Personnel Commission to upgrade salaries for rangers. Davis says the commission bases salary grades on duties rather than titles, and cleaning toilets, picking up paper, and collecting camping fees does not command a hefty pay check. Yet the rangers are solely responsible for lands worth millions of dollars and may be called upon in an emergency 24 hours a day.

The weekend of May 15, for example, Park Ranger John Speed at Kerr Lake's Hibernia Recreation Area was up at 7 a.m. fishing out a T-shirt someone had flushed down the bath house plumbing. At midnight, he was chasing drunks and rowdies out of the park. "For what we do, really, the pay stinks," says Kirk, "for all the responsibilities we are asked to have to handle—from car accidents to drownings to fights. A lot of it they have to try to take care of along with their day-to-day responsi-

bilities."

Renfrow suggests in his audit of the system that if sufficient funds are not made available to meet the parks' needs, some parks should be closed or ownership of them should be transferred to local governments. He says new parks should not be created until needs in existing parks are met.[19]

To some who have followed the progress of the park system, the answer to many of its woes lies in an act of the General Assembly in 1987. Lawmakers enacted the State Parks Act, which requires for the first time that the General Assembly approve all additions of land to the park system.[20] The act also requires that approval of those additions be accompanied by appropriations for their development and operation. Davis says the act will help steer the future development of the system. He says involving the General Assembly will help assure that future parks don't suffer the funding shortfalls experienced by existing parks. "It's giving them overview—giving them the opportunity to buy in," says Davis.

Yet no one is suggesting the parks' needs will be solved easily or quickly. "We're not even making our fair-share contribution to travel and tourism in attracting people to come to our area and see our natural resources," says Davis. "Facilities have stayed the same, infrastructure has stayed the same, staff has stayed the same—we're sort of like the McDonalds of state parks. We serve millions for very little money."

FOOTNOTES

[1] Michael Rulison, *Planning for State Parks and State Forests in North Carolina,* prepared by the Research Triangle Institute for the Department of Administration, December 1968.

[2] *Study of the State Parks,* report by the Fiscal Research Division of the General Assembly, December 1973.

[3] *New Directions: A Plan for the North Carolina State Parks and Recreation System, 1979-1984,* prepared by the Department of Natural Resources and Community Development and the legislature's State Parks Study Commission.

[4] *Parks and Recreation in North Carolina 1984,* A report prepared by the Department of Natural Resources and Community Development for distribution at public hearings on the future of the state parks system conducted across the state in 1984, pp. 1-12.

[5] State Goals and Policy Board, *Report to the Governor,* May 1986, p. 55.

[6] *Ibid.,* pages 40, 60, and 61.

[7] Office of the State Auditor, *Performance Audit Report: Management and Operation of the State Parks System,* January 1988, p. 6.

[8] *Ibid.,* p. 46.

[9] Rankings compiled by the State Division of Parks and Recreation based on the *National Association of State Park Directors Annual Information Exchange,* April 1988.

[10] Jack Betts and Vanessa Goodman, *The Two Party System in North Carolina,* A joint report by the North Carolina Center for Public Policy Research and the University of North Carolina Center for Public Television, December, 1987, pp. 40-41.

[11] "N.C. Ranks Last in Spending for Parks," Associated Press article published in the *Winston-Salem Journal,* May 24, 1987, p. B-6.

[12] "Time to End Parks Neglect," *The News and Observer* of Raleigh editorial page, April 28, 1987.

[13] "An Embarrassing Disgrace," the *Winston-Salem Journal* editorial page, May 27, 1987.

[14] Kirk K. Fuller, "History of North Carolina State Parks: 1915-1976," *Histories of Southeastern State Park Systems,* Association of Southeastern State Parks Directors, Oct. 1977, p. 128.

[15] *Performance Audit Report,* pp. 14-17.

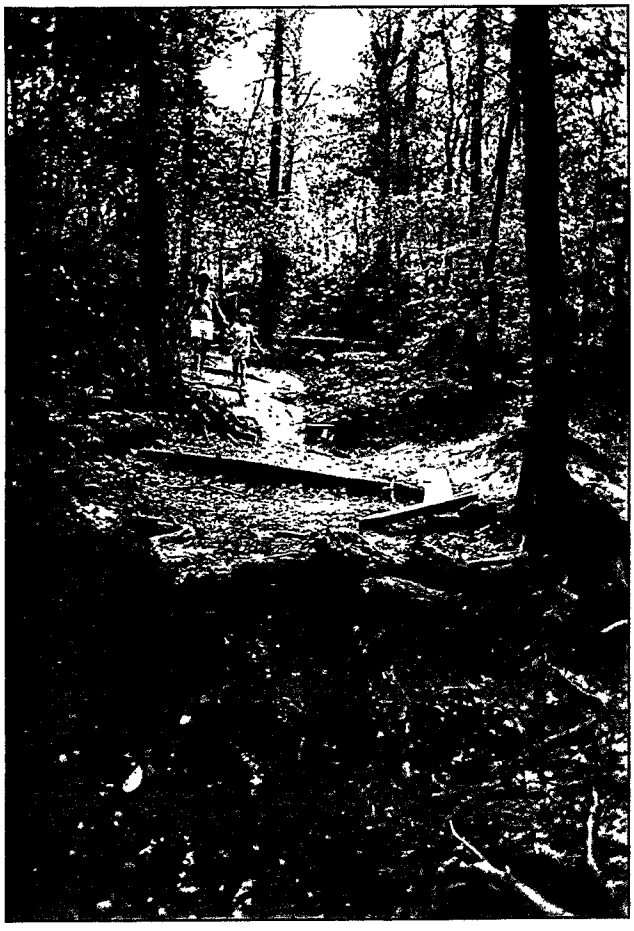
[16] *Ibid.,* p. 7.

[17] State Goals and Policy Board Report, p. 63.

[18] Biennial list of capital needs and projected costs prepared by the state Division of Parks and Recreation, Department of Natural Resources and Community Development, for the State Budget Office, April 28, 1988.

[19] *Performance Audit Report,* p. 8.

[20] Chapter 243 of the 1987 Session Laws, State Parks Act, now codified as N.C.G.S. 113-44.



North Carolina Division of Parks and Recreation

SELECTED RESOURCES

Resources on the Environment

Many resources on state policy and the environment appear in the footnotes to the articles in this issue on state parks and the State of the Environment, and in the footnotes to articles in Vol. 10, No. 2-3, Resources at Risk: Environmental Policy in North Carolina, North Carolina Insight, *March 1988. Listed below are some of those resources plus others which provide important background material, both on environmental policy in general and on North Carolina's specific situation.*

General Resources

"Ambient Air Quality 1986," N.C. Department of Natural Resources and Community Development, Division of Environmental Management, Air Quality Section, Oct. 1, 1987, a report designed to inform the public of air pollution levels throughout the state of North Carolina.

"The Crisis in Habitat: Protecting Wildlife's Future in North Carolina," a four-part series published May-August 1985 in *Wildlife in North Carolina* magazine, by Lawrence S. Earley, Division of Conservation Education, N.C. Wildlife Resources Commission. Series available in booklet form from the Commission, 512 N. Salisbury Street, Raleigh, N.C. 27611. Excellent guide to habitat in North Carolina.

Current Issues in U.S. Environmental Policy, Paul R. Portney, Editor, Resources for the Future, Inc., 1982, 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036. This book (and those listed below) outlines in detail the general environmental issues facing the nation, and serves as a guide to framing the questions and developing solutions to environmental needs. See also:

Down To Earth: Environment and Human Needs, Erik P. Eckholm, 1982, W.W. Norton & Co., 500 Fifth Avenue, New York, N.Y. 10010.

An Environmental Agenda for the Future, 1985, Island Press, 1718 Connecticut Avenue N.W., Washington, D.C. 20009.

Environmental Policy in the 1980s: Reagan's New Agenda, Norman J. Vig and Michael E. Kraft, 1984, Congressional Quarterly Press, 1414 22nd Street N.W., Washington, D.C. 20037.

Environmental Regulation of Industrial Plant Siting, by Christopher J. Duerksen, The Conservation Foundation, 1717 Massachusetts Ave. N.W., Washington, D.C. 20036, 1983. A state-by-state examination and ranking of state efforts to protect the environment when recruiting and promoting industrial growth.

An Environmental Lexicon, Division of Environmental Management, N.C. Department of Natural Resources and Community Development, May 1986. A short booklet defining common environmental terms.

The Guide to Environmental Organizations in North Carolina, by Lisa Blumenthal, N.C. Center for Public Policy Research, 1984. A thorough reference guide to 89 citizens' environmental groups in North Carolina, 46 state environmental agencies, and 41 boards and commissions with responsibilities in environmental policymaking or with advisory functions. Available for $15.60 plus $1.50 postage from the N.C. Center for Public Policy Research, P.O. Box 430, Raleigh, N.C. 27602.

North Carolina's Environment, 1981 Report, N.C. Department of Natural Resources and Community Development, P.O. Box 27687, Raleigh, N.C. 27611. The state's first major report on the state of the environment. It was followed six years later by: *North Carolina State of the Environment Report–1987,* N.C. Department of Natural Resources and Community Development, April 1987.

"Municipal and County Recreation and Park Service Study—Fiscal Year 1987-1988," Recreation Resources Service, N.C. State University, Raleigh, N.C. 27606, February 1988. This report serves as a

guide to municipal and county recreation units and services in each North Carolina county.

Hazardous and Radioactive Wastes

Videotape, N.C. Governor's Waste Management Board, Linda Little, Director, N.C. Department of Human Resources, Raleigh, N.C. 27611. This videotape, to be available later in 1988, is designed to answer many questions of concerned citizens about hazardous wastes.

The Nuclear Waste Primer: A Handbook for Citizens, The League of Women Voters Education Fund, 1985, $5.95, Nick Lyons Books, 31 West 21st Street, New York, N.Y. 10010. A guide to national radioactive waste questions.

Hazardous Materials in North Carolina: A Guide for Decisionmakers in Local Government, by Richard N.L. Andrews, Raymond J. Burby, and Alvis G. Turner, 1985, Institute for Environmental Studies, UNC-Chapel Hill, Chapel Hill, N.C. 27599-7410.

"Introduction to Hazardous Waste Management," Governor's Waste Management Board, 325 N. Salisbury Street, Raleigh, N.C. 27611. One of a series of helpful booklets in the board's education campaign called Project Reach. Other materials include: "Introduction to Toxic Substance Management," "Siting and Permitting Hazardous Waste Management Facilities in North Carolina," "Chemical Hazard Communication in North Carolina: The Right-To-Know," "Treatment Technologies for Hazardous Waste," "Pollution Prevention Pays," "Disposal and Long-Term Storage of Hazardous Waste," "Introduction to Low-Level Radioactive Waste," and "Directory of Federal and State Government Agencies Responsible for Toxic Substances and Hazardous Waste Management."

Land

Each of the following entries examines aspects of land-use planning in North Carolina:

"Coastal management in North Carolina: Building a Regional Consensus," David W. Owens, *Journal of the American Planning Association,* Vol. 51, No. 3, Summer 1985.

A Land Resources Program for North Carolina, Land Policy Council, N.C. Department of Administration, February 1977, 116 W. Jones Street, Raleigh, N.C. 27603.

Land Use and Land-Use Planning in North Carolina, E.C. Pasour Jr. and Kuo-Ching Lin, Economics Information Report No. 58, August 1979, Department of Economics and Business, N.C. State University, Raleigh, N.C. 27650.

Legislation Related to Planning, Development, and Land-Use Regulation, Richard Ducker and Philip Green Jr., 1981 through 1986, Institute of Government, UNC-Chapel Hill, Chapel Hill, N.C. 27514.

"State Land Policy: New Directions in Planning?" by William Swindaman, *Carolina Planning,* Vol. 2, No. 1, Department of City and Regional Planning, UNC-Chapel Hill, Chapel Hill, N.C. 27514. See also "A Rejoinder: Questions on North Carolina Land Policy," by David Godschalk, in same issue.

Striking a Balance, Reflections on Ten Years of Managing the North Carolina Coast, Kathryn Henderson, editor, 1987, N.C. Department of Natural Resources and Community Development, Raleigh, N.C. 27611.

Water

Citizens Guide to Water Quality, Clean Water Fund of North Carolina, P.O. Box 1008, Raleigh, N.C. 27602, undated. A brief guide to water quality questions and issues in North Carolina.

A Citizen's Handbook on Groundwater Protection, by Wendy Gordon, Natural Resources Defense Council Inc., 1984. This volume is a citizen's guide to national groundwater quality protection programs, practices, and issues.

"Options for Instream Flow Policies in North Carolina," Leslie Takahaski, Conservation Council of North Carolina, 307 Granville Road, Chapel Hill, N.C. 27514, Dec. 14, 1987. A report that details the state's alternatives for dealing with surface water issues in North Carolina's waterways.

State Water Quality Planning Issues, The Council of State Governments, 1982, $8, P.O. Box 11910, Lexington, Ky., 40578. A summary of national water quality issues and approaches to solving water quality problems.

State Water Resource Planning and Policy in North Carolina, by Maynard M. Hufschmidt, February 1980, Water Resources Institute of the University of North Carolina, 124 Riddick Building, N.C. State University, Raleigh, N.C. 27650, $8.

"Troubled Waters: Problems on the Pamlico," series by staff of the *Winston-Salem Journal*, April 5-9, 1987, available in reprint tabloid.

Water Quality Progress in North Carolina 1982-83/ 305b Report, Division of Environmental Management, N.C. Department of Natural Resources and Community Development, July 1984. Biennial report on water quality in North Carolina.

Water Quality Progress in North Carolina 1984-85 /305b Report, Division of Environmental Management, N.C. Department of Natural Resources and Community Development, July 1986. Biennial report on water quality in North Carolina.

Water Resources Management, Issues and Policy Options, National Conference of State Legislatures, November 1982, 1125 17th Street, Suite 1500, Denver, Colo. 80202. Summary Report also available. Detailed research report on national water resources issues.

Statewide Organizations

For a complete listing of all 89 major environmental organizations in North Carolina, see: *The Guide to Environmental Organizations in North Carolina*, by Lisa Blumenthal, N.C. Center for Public Policy Research, 1984. A thorough reference guide to citizens' groups, state agencies, and boards and commissions with environmental responsibilities and activities in North Carolina.

Audubon Society, North Carolina Council, Debbie Crouse, contact person, 526 Euclid Street, Raleigh, N.C. 27604 (919) 832-1160. The Audubon Society was organized to protect wildlife from indiscriminate hunting. There are eight local chapters of The Audubon Society in North Carolina.

Clean Water Fund of North Carolina, Lisa Finaldi, Director, P.O. Box 1008, Raleigh, N.C. 27602 (919) 832-7941.

Conservation Council of North Carolina, Mary Beth Edelman, President, 307 Granville Road, Chapel Hill, N.C. 27514, (919) 942-7935. The Council is a statewide coalition of groups and individuals dedicated to conservation and environmental protection. The lobbyist and spokesman for the Conservation Council of North Carolina and The N.C. Sierra Club is Bill Holman, 206 New Bern Ave., Raleigh, N.C. 27601 (919) 755-1329.

Environmental Resource Project, Institute of Environmental Studies, UNC-Chapel Hill, Frances M. Lynn, Director, CB No. 7410, 311 Pittsboro St., Chapel Hill, N.C. 27599-7410 (919) 966-2358.

Friends of State Parks, Ray Noggle, President, 501 E. Whitaker Mill Road, Raleigh, N.C. 27608 (919) 828-1893. Friends of State Parks was formed to promote and perpetuate North Carolina's state parks system.

League of Women Voters of North Carolina, Marion A. Nichol, President, 1508 Ward Street, Durham, N.C. 27707. The League addresses environmental and political matters in North Carolina.

North Carolina Chapter, The Sierra Club, Kim Martin Shaeffer, Chair, 2910 Skye Drive, Fayetteville, N.C. 28303 (919) 485-7203. The lobbyist and spokesman for both The N.C. Sierra Club and the Conservation Council of North Carolina is Bill Holman, 206 New Bern Ave., Raleigh, N.C. 27601 (919) 755-1329. There are 14 local groups of The Sierra Club in addition to the state-level N.C. Chapter of the Sierra Club.

North Carolina Coastal Federation, Todd Miller, Executive Director, 1832 J Bell Lane, Newport, N.C. 28570 (919) 393-8185.

North Carolina Environmental Defense Fund, Steve Levitas, Director, 128 E. Hargett St., Suite 250, Raleigh, N.C. 27601 (919) 821-7793. The N.C. office of the Fund, a national organization, was established in 1988 to combine economic, scientific and legal expertise to provide solutions to environmental problems.

North Carolina League of Conservation Voters, John Runkle, President, P.O. Box 12462, Raleigh, N.C. 27605 (919) 942-0600. The League is a state conservation political action committee.

North Carolina Nature Conservancy, Katherine Skinner, Director, Carr Mill, Suite 223, Carrboro, N.C. 27510 (919) 967-7007. The N.C. Nature Conservancy is a chapter of The Nature Conservancy, a national organization dedicated to purchasing and preserving threatened environmental resources.

North Carolina Office, Southern Environmental Law Center, Lark Hayes, Director, 137 E. Franklin St., Suite 30, Chapel Hill, N.C. 27514 (919) 967-

1450. The Center was created to act as an advocate for environmental and citizens groups in environmental matters.

North Carolina Trails Association, David Drexel, contact person, P.O. Box 1033, Greensboro, N.C. 27402 (919) 692-6691.

North Carolina Wildlife Federation, Dr. Michael Corcoran, Executive Director, P.O. Box 10626, Raleigh, N.C. 27605 (919) 833-1923. The lobbyist for the Wildlife Federation is Bill Holman, 206 New Bern Ave., Raleigh, N.C. 27601 (919) 755-1329.

Western North Carolina Alliance, Taylor Barnhill and Ron Lampe, Directors, Dr. Dan Pittillo, President, P.O. Box 18087, Asheville, N.C. 28814-0087 (704) 258-8737.

Publications

Carolina Conservationist, monthly newsletter of the Conservation Council of North Carolina, 307 Granville Road, Chapel Hill, N.C. 27514 (919) 942-7935.

The Courier, newsletter published by the N.C. Division of Parks and Recreation, Public Information Office, N.C. Division of Parks and Recreation, P.O. Box 27687, Raleigh, N.C. 27611-7687 (919) 733-4181.

Footnotes, bi-monthly newsletter of the North Carolina Chapter of The Sierra Club, 2910 Skye Drive, Fayetteville, N.C. 27608 (919) 828-1893.

Friends of Wildlife, bi-monthly magazine of the N.C. Wildlife Federation, P.O. Box 10626, Raleigh, N.C. 27605 (919) 833-1923.

A Guide to Environmental Internships: How Environmental Organizations Can Utilize Internships Effectively, National Society for Internships and Experiential Education, 3509 Haworth Dr., Suite 207, Raleigh, N.C. 27609 (919) 787-3263. $7 each.

"A Guide to North Carolina State Parks," *Tread Softly: Carolina Conservation Quarterly,* Vol. 1, No. 3, Summer / Fall 1983. May be obtained from Freinds of State Parks, 4204 Randleman Road, Greensboro, N.C. 27406.

Legal Tides, publication of the UNC Sea Grant Program, P.O. Box 8695, N.C. State University, Raleigh, N.C. 27695-8605.

News, bimonthly newsletter of the Water Resources Institute of the University of North Carolina, N.C. State University, Campus Box 7912, Raleigh, N.C. 27695-7912 (919)737-2815.

North Carolina Insight, quarterly magazine of the N.C. Center for Public Policy Research. See specifically "Waste Policy Challenges Growth Policy," by Wallace Kaufman, Vol. 4, No. 1, April 1981, pp. 2-9; "How Radioactive is Low Level?", Vol. 4, No. 1, April 1981, p. 4; "Coastal Management—A Planning Beachhead in North Carolina," by Bill Finger and Barry Jacobs, Vol. 5, No. 1, May 1982, pp. 2-13; "Water Management, A Tenuous State/Local Partnership," by David Moreau, Vol. 7, No. 1, June 1984, pp. 66-74; and "Resources at Risk: Environmental Policy in North Carolina," Special Double Issue of Insight, Vol. 10, No. 2-3, March 1988. Issues are $6.30 each from the N.C. Center for Public Policy Research, P.O. Box 430, Raleigh, N.C. 27602.

Popular Government, the magazine of the Institute of Government at UNC-Chapel Hill, frequently examines state environmental policy, programs, and statutes and reviews their application to both state and local governments. Particularly helpful may be the following articles: "Protection of Instream Flows and Lake Levels," by Milton S. Heath Jr., Vol. 50, No. 4, Spring 1985, pp. 6-15; "How Far May North Carolina Local Governments Go in Regulating Hazardous Waste?" by Glenn Dunn, Vol. 51, No. 2, Fall 1985, pp. 19-23; "Strategies for Protecting North Carolina's Natural Areas," by Charles Roe, Vol. 51, No. 3, Winter 1986, pp. 15-24; "Ground Water Quality Law in North Carolina," by Milton S. Heath Jr., Vol. 52, No. 3, Winter 1987, pp. 39-49; "Recycle Now, Mecklenburg County's Recycling Program," by Betsy Dorn, Vol. 53, No. 3, Winter 1988, pp. 36-43; and "Piedmont Storm Water Management," by Ann Brewster Weeks, Vol. 53, No. 4, Spring 1988, pp. 30-37.

Waste Line, bi-monthly newsletter of the Governor's Waste Management Board, Hope Lucas, editor, Room 603, Albemarle Building, 325 N. Salisbury Street, Raleigh, N.C. 27611 (919) 733-9020.

Wildlife in North Carolina, the monthly magazine of the N.C. Wildlife Resources Commission, James W. Dean, editor, 512 N. Salisbury Street, Raleigh, N.C. 27611 (919) 733-7123.

Comparing the Performance of For-Profit and Not-For-Profit Hospitals in North Carolina

by Lori Ann Harris
and Marianne M. Kersey

The Center's latest book-length research report, second in a series, examines the performance of commercially owned or operated hospitals and of not-for-profit hospitals. An earlier report, titled The Investor-Owned Hospital Movement in North Carolina *and published in 1986, focused on the trend toward for-profit hospitals in this state, while the second, to be published this fall, compares the performance of for-profit and not-for-profit hospitals in such areas as costs, charges, indigent care provided, range of services offered, and taxes paid into government coffers. The latest report,* Comparing the Performance of For-Profit and Not-For-Profit Hospitals in North Carolina, *will be available from the Center this fall. Following are excerpts from the new report's Executive Summary.*

For-profit hospitals charge more and provide less indigent care than not-for-profit hospitals in North Carolina, but they pay sizable amounts in taxes, the N.C. Center for Public Policy Research has found. Hospitals that are owned, managed under contract, or leased by national, investor-owned hospital chains perform differently in these and in other ways than comparable not-for-profit hospitals.

For generations, most hospitals in North Carolina were publicly-owned or not-for-profit hospitals designed to provide health care at modest rates for the citizenry. But since 1980, the ownership and management of North Carolina's hospitals has changed dramatically, and now 47 of the state's 162 non-federal hospitals—more than one in every four—are either owned, leased or managed (at least in part) by for-profit, commercial enterprises. In the past few years, however, a retrenchment has begun in the national investor-owned hospital movement.

Trends Facing Hospitals in North Carolina and the Nation

Significant changes in both the public and private sectors have combined to slow the American investor-owned hospital movement:

■ Federal prospective payment systems and pre-admission reviews have significantly lowered

—continued on page 54

Lori Ann Harris and Marianne M. Kersey are researchers and writers at the N.C. Center for Public Policy Research.

Table 1: Investor-Owned Involvement with Hospitals in North Carolina 1988

Hospital Name	Location	Beds in Use	Hospital Type	Owned/ Leased/ Managed/ & Company	Date I-O Involvement Began	Date of Latest Changeover
A. Owned by Investor-Owned Corporations (24)						
1. Appalachian Hall	Asheville	100	P	O-PIA	1931	1981
2. Blackwelder Memorial Hospital	Lenoir	35	G	O-FHCS	1985	1987
3. Brynn Marr Neuropsychiatric Hospital	Jacksonville	76	P	O-HSA	1984	1984
4. Central Carolina Hospital	Sanford	142	G	O-AMI	1980	1980
5. Charter Hills Hospital	Greensboro	68	P	O-CMC	1981	1981
6. Charter Mandala Center	Winston-Salem	99	P	O-CMC	1973	1981
7. Charter Northridge Hospital	Raleigh	66	P	O-CMC	1984	1984
8. Charter Pines Hospital	Charlotte	60	P	O-CMC	1985	1985
9. Community Hospital of Rocky Mount	Rocky Mount	50	G	O-BAHC	1913	1986
10. CPC Cedar Spring Hospital	Pineville	50	P	O-CPC	1985	1985
11. Davis Community Hospital	Statesville	149	G	O-HT	1925-37	1987
12. Franklin Regional Medical Center[1]	Louisburg	53	G	O-HMA	1983	1986
13. Frye Regional Medical Center	Hickory	275	G	O-AMI	1912	1972
14. Heritage Hospital[2]	Tarboro	127	G	O-HT	1982	1987
15. Ten Broeck Hospital[3]	Hickory	64	P	O-UMC	1935	1979
16. Highland Hospital	Asheville	98	P	O-PIA	1904	1982
17. Highsmith-Rainey Memorial Hospital	Fayetteville	150	G	O-HCA	1901	1983
18. Holly Hill Hospital	Raleigh	106	P	O-HCA	1978	1984
19. HSA Cumberland Hospital	Fayetteville	154	P	O-HSA	1976	1983
20. Life Center of Wilmington	Wilmington	27	S	O-CAPS	1984	1984
21. Lake Norman Regional Medical Center[4]	Mooresville	111	G	O-HMA	1983	1986
22. McPherson Hospital	Durham	24	S	O-Ind	1926	1926
23. Orthopaedic Hospital	Charlotte	120	S	O-HT	1971	1987
24. Raleigh Community Hospital	Raleigh	140	G	O-HCA	1950	1977
B. Managed or Leased by Investor-Owned Corporations (23)						
25. Angel Community Hospital	Franklin	81	G	M-HCA	1926-65	1983
26. Ashe Memorial Hospital	Jefferson	48	G	M-HCA	1981	1981
27. Bertie County Memorial Hospital	Windsor	49	G	M-FHI	1985	1987
28. The Brunswick Hospital	Supply	60	G	L-HT	1981	1987
29. Burnsville Hospital[5]	Burnsville	24	G	M-HCA	1982	1982
30. Chatham Hospital	Siler City	68	G	M-HMP	1987	1987
31. Craven Regional Medical Center[6]	New Bern	24	G	M-HHM	1987	1987

—continued

Hospital Name	Location	Beds in Use	Hospital Type	Owned/ Leased/ Managed/ & Company	Date I-O Involvement Began	Date of Latest Changeover
32. District Memorial Hospital[7]	Andrews	61	G	M-HCA	1987	1987
33. Duplin General Hospital[8]	Kenansville	20	G	M-PIA	1987	1987
34. Gaston Memorial Hospital[9]	Gastonia	70	G	M-MHM	1987	1987
35. Granville Medical Center	Oxford	66	G	M-HMP	1988	1988
36. Hamlet Hospital	Hamlet	64	G	L-HMA	1987	1987
37. Hoots Memorial Hospital	Yadkinville	54	G	M-HCA	1986	1986
38. Hugh Chatham Memorial Hospital	Elkin	81	G	M-HMP	1985	1985
39. Johnston Memorial Hospital	Smithfield	107	G	M-HCA	1983	1983
40. Margaret R. Pardee Memorial Hospital[9]	Hendersonville	21	G	M-MHM	1987	1987
41. The McDowell Hospital	Marion	65	G	M-Delta	1982	1982
42. Medical Park Hospital	Winston-Salem	120	G	M-HCA	1971	1986
43. Morehead Memorial Hospital	Eden	85	G	M-HMP	1984	1984
44. Person County Hospital	Roxboro	54	G	M-HCA	1981	1981
45. Rutherford Hospital	Rutherfordton	165	G	M-HMP	1983	1983
46. Spruce Pine Community Hospital[5]	Spruce Pine	68	G	M-HCA	1982	1982
47. Wilson Memorial Hospital[9]	Wilson	23	G	M-MHM	1987	1987

G - General hospital (primarily)
P - Psychiatric
S - Specialty

O - Owned
M - Managed
L - Leased

Full names for the 17 for-profit corporations listed above are as follows:

AMI ....American Medical International, Inc.
BAHC .Best American Health Care
CAPS ..Comprehensive Addiction Programs
CMC ...Charter Medical Corporation
CPC ....Community Psychiatric Centers
Delta ...The Delta Group, Inc.
FHCS ..Futura Health Care Services
FHI.....Forum Health Investors
HCA....Hospital Corporation of America
HHM ...Horizon Health Management Co.
HMA ...Health Management Associates, Inc
HMP ...Hospital Management Professionals, Inc.
HSA ....Healthcare Services of America
HT.....HealthTrust, Inc. — The Hospital Company[10]
MHM ..Mental Health Management Co.
PIA.....Psychiatric Institutes of America[11]
UMC ...United Medical Corporation
Ind.....Independently owned, not affiliated with a chain

FOOTNOTES

[1]Formerly named Franklin Memorial Hospital.

[2]Heritage Hospital was built in 1985 as a replacement facility for Edgecombe General.

[3]Formerly named Hickory Memorial Hospital.

[4]Formerly named Lowrance Hospital.

[5]Spruce Pine Community Hospital and Burnsville Hospital are the only hospitals in the Blue Ridge Hospital System, which is managed under contract by Hospital Corporation of America.

[6]Craven Regional Medical Center, formerly Craven County Hospital, is county-owned; Horizon Health Management Co. manages 24 psychiatric beds of the hospital's 276 beds.

[7]Formerly named Mountain Park Medical Center.

[8]Duplin General Hospital has 60 beds and is county-owned; Psychiatric Institutes of America manages 20 psychiatric beds of that total.

[9]Gaston Memorial Hospital is a private, not-for-profit hospital, as is Margaret Pardee Memorial Hospital; Wilson Memorial Hospital is county-owned. Mental Health Management Co. manages 70 psychiatric beds of Gaston Memorial's 354 total beds, 21 psychiatric beds of Margaret Pardee Memorial's 149 total beds, and 23 psychiatric beds of Wilson Memorial's 281 total beds.

[10]HealthTrust is an Employee Stock Ownership Plan formed in September of 1987 by Hospital Corporation of America. HCA divested 104 of its 186 acute care hospitals in the United States that year.

[11]Psychiatric Institutes of America is a subsidiary of National Medical Enterprises, one of the largest national investor-owned hospital companies.

Jack Betts

Participants in a panel discussing the Center's latest hospital report on the UNC Television Network are, left to right, Chris Fitzsimon and Jill McSweeney of UNC-TV; Lori Ann Harris of the N.C. Center for Public Policy Research; Earl Tyndall of Medical Park Hospital in Winston-Salem; Glenn Wilson of the UNC School of Social and Administrative Medicine; and moderator James Bernstein of the N.C. Department of Human Resources Office of Health Resources Development.

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hospitals' inpatient occupancy rates, shortened the length of patients' stays, and restricted the potential profits on inpatient hospital care.

■ Investor-owned companies' efforts to diversify their business holdings have met with only limited success, and the industry has witnessed widespread divestment of these ventures.

■ Many states have intensified their scrutiny and regulation of the health care system, which may have helped slow the pace of the investor-owned hospital movement.

■ Competition from inside and outside the investor-owned hospital industry has slowed the investor-owned hospital movement nationwide.

One part of the investor-owned hospital industry has weathered the storms in the health care system—specialized facilities such as psychiatric, chemical dependency, and rehabilitation hospitals. Many of the new, small firms in the for-profit hospital industry have used these avenues to move into the business. And these firms are succeeding at a rate which significantly outpaces the industry's giants.

Other trends affecting hospitals and identified by the N.C. Center include:

■ Occupancy rates have fallen for all hospitals during the 1980s, but they have fallen to precariously low levels at small hospitals—which, in North Carolina, are usually rural facilities with a high percentage of Medicare and Medicaid patients. According to James Bernstein, adviser to rural hospitals and section chief of Health Resources Development in the N.C. Department of Human Resources, North Carolina hospitals with fewer than 50 beds "are at the highest risk and are going to have a difficult time operating solely as inpatient institutions. Many will enter a period of transition from inpatient care to multi-service centers, including skilled nursing and outpatient services," he predicts.

■ Once patients are admitted to the hospital, they are being discharged sooner than in previous years.

■ Long thought to be a problem distant from the Tar Heel state, the national shortage of nurses and other skilled medical personnel has hit North Carolina this year.

■ Hospitals have begun to use marketing techniques to attract patients.

Research Questions

The N.C. Center's research compares the performance of for-profit (investor-owned, -managed, or -leased) hospitals and not-for-profit hospitals. The research was designed to answer the fol-

lowing four questions:

- Do for-profit hospitals provide more or less indigent care than not-for-profit hospitals?
- Do for-profit hospitals have higher or lower costs and charges than not-for-profit hospitals?
- Do for-profit hospitals offer a broader or narrower range of services than not-for-profit hospitals?
- If for-profit hospitals provide less indigent care, do they (as for-profit corporations) pay taxes which would offset any deficiencies in indigent care?

Comparison of Levels of Indigent Care

The Center's findings on indigent care are based on a survey sent to all 127 general, acute care hospitals in North Carolina. Sixty-three percent (80) of the 127 hospitals replied, including both for-profits and not-for-profits. Of these 80 responses, 75 surveys (60%) were complete enough to use in the data analysis. The data were later verified in telephone interviews.

The private not-for-profit and public hospitals responding to the survey provided uncompensated care in an amount equal to 8.4 percent of their gross patient revenue in 1984. This compares with 6.6

Table 2. Uncompensated Care Provided By For-Profit and Not-For-Profit Hospitals in North Carolina, 1984

Variables	Eleven Investor-Owned and -Managed Hospitals Responding to Survey	Sixty-Four Not-For-Profit and Public Hospitals Responding to Survey	Percentage Difference
Average uncompensated care[1] as percentage of gross patient revenue[2]	6.6%	8.4%	27.3%
Average uncompensated care per bed	$7,000	$8,593	22.8%
Average uncompensated care per inpatient admission	$ 203	$ 237	16.7%
Average uncompensated care per inpatient and outpatient admission[3]	$ 44	$ 53	20.5%

[1]Uncompensated care is defined as the total of indigent care, charity care, and bad debt.

[2]Gross patient revenue consists of revenue from services rendered to patients, including payments received from or on behalf of individual patients.

[3]Outpatient admissions include outpatient clinic visits, outpatient surgery visits, and emergency room visits.

Sources: N.C. State Center for Health Statistics, *Health Facilities Data Book, 1984,* and surveys of chief executive officers of general acute care hospitals in North Carolina by the N.C. Center for Public Policy Research.

percent of gross patient revenue going to uncompensated care at investor-owned and -managed hospitals—*27.3 percent less than that provided by not-for-profit hospitals.* Uncompensated care is defined in the study as the total of a hospital's indigent care, charity care, and bad debt.

A recent study conducted by Lewin/ICF, a Washington-based consulting firm, also found differences in the provision of uncompensated care by investor-owned and not-for-profit hospitals. In four of five states examined (one of which was North Carolina), the study found that not-for-profits commit significantly more of their resources to uncompensated care than do investor-owned hospitals. Harry Nurkin, president of Charlotte Memorial, a public hospital, is not surprised by such findings. "If they are investor-owned, their first obligation is to their investors," says Nurkin. "Providing services to people who are sick and injured is secondary." But Earl Tyndall, administrator of Medical Park Hospital in Winston-Salem, which is managed by a for-profit corporation, contends, "The emphasis on patient care and business orientation are identical at for-profit and not-for-profit hospitals." Medical Park Hospital was an independent for-profit hospital until it was purchased by Carolina Medicorp, Inc. in 1986, and is now a private not-for-profit hospital managed by for-profit Hospital Corporation of America.

The increasing number of indigent patients is likely to become a major issue facing the N.C. legislature. For example, the Center cites a Duke University study which estimates that nearly 900,000 individuals in North Carolina have no health insurance at some point during the year. The Center also cites a 1986 report by the University of North Carolina at Chapel Hill Health Services Research Center that revealed nearly one-fourth (23) of the 100 counties in North Carolina had more than 6 percent uninsured poor. The estimate was based on an analysis of data from an N.C. Citizens Survey conducted by the N.C. Office of State Budget and Management. Statewide distribution of the uninsured poor ranged from 1.1 percent in Alexander County in western North Carolina to 9.2 percent in Warren County in the northern Piedmont.

Comparison of Costs and Charges

In a comparison of costs and charges, the Center matches seven investor-owned hospitals with seven not-for-profit hospitals of similar size (number of beds), number of employees and admissions, and occupancy rates. (There were only seven hospitals in North Carolina *owned* by investor-owned corporations during fiscal year 1983, the year of the most recent available data when this analysis began.) Using Medicare Cost Reports—financial reports filed annually with the federal Health Care Financing Administration—the Center compared costs (to the hospital) and charges (to the patient) between for-profits and not-for-profits. *For-profits had higher charges generally than comparable not-for-profits, particularly for what are called ancillary services.* Ancillary services are those which are not included in the room charge, such as x-rays, drugs, anesthesiology, and laboratory services. The Center found that gross inpatient revenue per day from ancillary services was almost 30 percent higher at investor-owned hospitals.

The only previous study on hospital charges in North Carolina was done by Blue Cross and Blue Shield of North Carolina in 1983. This study compared the charges to Blue Cross subscribers in 1981-1982 for three commonly performed procedures—hysterectomies, cholecystectomies (gall bladder removals), and normal baby deliveries at investor-owned and not-for-profit hospitals. Blue Cross and Blue Shield found that charges at the six investor-owned chain hospitals in the sample were higher than those at the not-for-profit hospitals with which they were compared, with one exception. Only one investor-owned hospital had lower charges for normal deliveries than the not-for-profit hospitals.

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Table 3. Selected Comparions of Revenues/Charges and Costs/Expenses Between Investor-Owned and Not-For-Profit Hospitals

	Average Percentage Difference of Investor-Owned Charges Over Not-for-Profit Hospitals	P(t), or Level of Significance (*** = highly significant)
I. Comparisons of *Revenues/Charges* to Patients		
A. *Charge Payers* — self-pay, private insurance, Blue Cross (ipf)		
1. Gross inpatient revenue per day	+ 18.1 %	**
2. Gross inpatient ancillary revenue per day	+ 29.6	**
B. *Cost Payers* — Medicare and Medicaid (expf)		
3. Inpatient allowable costs (plus return on equity for investor-owned hospitals) per day	+ 21.5	***
C. *Net Patient Revenue* (ipf)		
4. Adjusted net patient service revenue per day	+ 24.4	***
5. Adjusted net patient service revenue per admission	+ 25.3	***
II. Comparisons of *Costs/Expenses*		
A. *Total Operating Costs*		
1. Total operating costs per adjusted day	+ 20.0 %	***
B. *General Service (Nonpatient) Costs*		
2. General service costs per adjusted day	+ 26.9	***
3. Administrative and general costs per adjusted day	+ 48.1	***
4. Building and fixture depreciation per adjusted day	+ 59.1	**
C. *Patient Care Costs*		
5. Total patient care costs per adjusted day (ipf)	+ 15.9	***
6. Total inpatient care costs per inpatient day (ipf)	+ 14.3	**
7. Total inpatient care costs per inpatient day (expf)	+ 16.5	***
8. Routine inpatient service costs per inpatient day (expf)	+ 19.5	***
D. *Ancillary Department Costs*		
9. Total inpatient ancillary costs per day (expf)	+ 13.2	*
10. Operating room inpatient costs per day (expf)	+ 38.5	***
11. Drugs charged to patients costs per day (expf)	+ 25.2	**

ipf = including professional fees
expf = excluding professional fees
\+ = **investor-owned hospitals as a group had higher values than not-for-profit hospitals on this measure**
*** = $p(t) \leq .05$
** = $.05 < p(t) \leq .1$
* = $.1 < p(t) \leq .2$

Table 4. Comparisons of Services Offered More Frequently by *Medium-Sized* For-Profit and Not-For-Profit N.C. Hospitals in 15 Non-Standard Services†
(Ranked in order of greatest percentage difference)

A. Services offered more frequently by all Medium Sized Not-For-Profit Hospitals (10)

1. obstetrics
2. newborn nursery
3. cardiac ICU
4. eye, ear, nose, and throat (EEN&T)
5. orthopedics
6. gynecology
7. pediatrics
8. cardiology*
9. psychiatric outpatient*
10. neurosurgery*

B. Services offered more frequently by all Medium-Sized For-Profit Hospitals (5)

1. outpatient clinic
2. psychiatry
3. medical/surgical ICU*
4. neonatal ICU*
5. thoracic surgery*

† Non-standard services are those *not* offered by *all* medium-sized hospitals.
* Percentage difference between hospital types was 10% or less.

Interestingly, charges for room rates were almost identical in the for-profit and not-for-profit hospitals examined in the Center's most recent study. The average room rate in the for-profit hospitals in 1986 was $147, while the average in not-for-profits was $148. This finding is consistent with that of other studies nationally. For-profit hospitals make money on ancillary services, not room rates. As Dwight Gentry, formerly associate director of the not-for-profit New Hanover Memorial Hospital in Wilmington, puts it, "They [for-profit hospitals] pump up high the I-V [intravenous solution] and all the ancillary charges—sky high."

Comparison of Range of Services

The Center also compares 22 service offerings at for-profit and not-for-profit hospitals in North Carolina. Over the years, critics have charged that for-profit hospitals "skim the cream" in providing services. That is, detractors allege that for-profits offer only services that make money and do not offer other less lucrative services. The Center's findings on this issue were mixed.

First, the Center found that there are four services that can be considered standard at all N.C. hospitals regardless of size or ownership—general medicine, general surgery, pharmacy, and emergency room services. And medium-sized and large hospitals also had three additional standard services—physical therapy, outpatient surgery, and urology—regardless of ownership type.

In hospitals of medium size (101-399 beds)—the category with the largest number of hospitals (62)—for-profit hospitals offered a narrower range of services. Ten of the 15 non-standard services at medium-sized hospitals were offered more frequently by not-for-profits, including obstetrics and newborn nursery services, generally regarded as less profitable services or revenue losers. By contrast, investor-owned hospitals were more likely to offer only five services more frequently than not-for-profits.

Among small (100 beds or fewer) hospitals, however, for-profits offered 11 of the 18 non-standard services more often than not-for-profit hospitals, including outpatient clinic, outpatient surgery, and psychiatric outpatient services. Three services—gynecology, medical/surgical intensive care unit (ICU), and eye, ear, nose, and throat (EEN&T)—were offered more frequently by small not-for-profit hospitals than by for-profit hospitals.

The Center also examines whether investor-owned multi-hospital systems, in order to ensure profitability, take into account the population and wealth of an area when deciding whether to purchase a hospital or pursue a management contract. *Fortune* magazine suggests that at least one for-profit chain does. "Humana prefers to own facilities in suburbs where young working families are

having lots of babies," the magazine reported in its Nov. 17, 1980 issue. "Though young people use hospitals less than the elderly, they are more likely to be privately insured and in need of surgery, which makes the most money. The babies provide a second generation of customers."

Research by the N.C. Center shows a similar pattern in North Carolina as well. When the three groups of for-profit hospitals—owned, managed, and leased—were combined, the indicators were strong that investor-owned corporations do take wealth and population size into consideration. Twenty-three of the 44 hospitals owned, managed, or leased by a for-profit chain as of June 1987 were located in the 25 wealthiest of North Carolina's 100 counties, and 20 of these 23 hospitals were also in the top 25 counties in terms of urbanization.

Taxes Paid By For-Profits and Charitable Contributions Received by Not-For-Profits

Finally, the Center examines the issue of taxes paid by for-profit hospitals. The chief explanation offered by for-profit hospital officials for their lower levels of indigent care is that for-profits pay taxes to state and local governments. Again through use of surveys of all general acute care hospitals in North Carolina, the Center found that *for-profit hospitals pay substantial amounts in taxes—more than $7.5 million in 1984*. More than $2.1 million was paid in local and state taxes. The vast majority of the taxes paid, however—$5.4 million—went to the federal government.

Among survey respondents, the highest contributor in *total* taxes was Frye Regional Medical Center in Hickory, which paid almost $2.6 million in total taxes in 1984. Highsmith-Rainey Memorial Hospital in Fayetteville paid the most in *local* property taxes ($203,203), while Frye Regional Medical Center and Raleigh Community Hospital paid the most in *state* income taxes ($290,709 by Frye Regional Medical Center and $258,294 by Raleigh Community Hospital).

For-profit hospital officials point to a number of advantages enjoyed by their tax-exempt counterparts. Exemption from taxes under Section 501(c)(3) of the Internal Revenue Code allows not-for-profits to devote more of their gross revenues to internal operations and expansion and to secure tax-exempt bond financing. Also working to the advantage of not-for-profits are lower postal rates, access to state appropriations, and tax-deductible

Table 5. Comparisons of Services Offered More Frequently by *Small* For-Profit and Not-For-Profit N.C. Hospitals in 18 Non-Standard Services†
(Ranked in order of greatest percentage difference)

A. Services offered more frequently by all Small For-Profit Hospitals (11)

1. outpatient clinic
2. thoracic surgery
3. outpatient surgery
4. cardiac ICU
5. neurosurgery*
6. newborn nursery*
7. obstetrics*
8. orthopedics*
9. physical therapy*
10. psychiatry*
11. psychiatric outpatient*

B. Services offered more frequently by all Small Not-For-Profit Hospitals (3)

1. gynecology
2. medical/surgical ICU*
3. eye, ear, nose, and throat (EEN&T)*

C. Services offered by same percentage of Small For-Profit and Not-for-Profit Hospitals (4)

1. urology (80%)
2. pediatrics (60%)
3. cardiology (10%)
4. neonatal ICU (0%)

† Non-standard services are those *not* offered by *all* small hospitals.
* Percentage difference between hospital types was 10% or less.

Table 6. 1984 Taxes Paid By For-Profit Hospitals (Investor-owned, -managed, and -leased)

Hospitals Paying Taxes in N.C.	County	Local Property Tax Paid	State & Local Sales Tax Paid	State Income Tax Paid	Federal Income Tax Paid
1. Frye Regional Medical Center (IO)	Catawba	$ 177,349	NA	$ 290,709	$ 2,095,042
2. Raleigh Community Hospital (IO)	Wake	161,571	$ 164,564	258,294	1,701,943
3. Highsmith-Rainey Memorial Hospital (IO)	Cumber-land	203,203	50,195	146,525	1,055,961
4. Central Carolina Hospital (IO)	Lee	123,468	14,636	95,344	491,637
5. Davis Community Hospital (IO)	Iredell	61,056	70,985	9,129	62,195
6. Humana Hospital Greensboro (IO)[a]	Guilford	119,652	NA	NA	NA
7. Medical Park Hospital (IO)	Forsyth	73,286	16,773	0[c]	0[c]
8. Heritage Hospital (IO)[d]	Edgecombe	61,323	NA	NA	NA
9. Community Hospital of Rocky Mount (IO)	Nash	29,704	NA	NA	NA
10. Cape Fear Valley Medical Center (IM)	Cumber-land	3,800[e]	0	0	0
11. Angel Community Hospital (IM)	Macon	2,939	NA	NA	NA
TOTAL:		$1,017,351	$ 317,153	$ 800,001	$ 5,406,778

IO = Investor-Owned

IM = Investor-Managed

NA = Not Available

FOOTNOTES

[a] Humana Hospital was purchased by Moses Cone Memorial Hospital, a private, not-for-profit hospital, in 1988.

[b] Denotes hospitals which did not respond to the North Carolina Center for Public Policy Research survey. Property tax information was supplied instead by the county tax supervisors. Thus, this figure may not accurately depict the total taxes paid by the hospital to other levels of government.

[c] Because Medical Park was a limited partnership in 1984, the hospital itself did not pay any state and federal income taxes. The holding corporation (Maplewood Corp. and Casstevens Co.) made all tax payments. Medical Park Hospital was sold to Carolina Medicorp, Inc. in 1986.

[d] Formerly Edgecombe General Hospital.

[e] Taxes were paid on property leased by the hospital. Cape Fear Vally Medical Center ended its

Other Taxes Paid	Total Taxes Paid	County Appropriations for Hospital Services
$ 535	$ 2,563,635	$ 0
0	2,286,372	3,846,000
33,819	1,489,703	0
11,163	736,248	0
0	203,365	0
NA	119,652 [b]	205,000
0	90,059	0
NA	61,323 [b]	0
NA	29,704 [b]	0
0	3,800	0
NA	2,939 [b]	0
$ 45,517	$7,586,800 [f]	

management contract with National Medical Enterprises, Inc. in 1985, and is currently managed by SunHealth Enterprises.

[f] 94% of the federal, state, and local taxes paid by the 75 hospitals responding to the Center's survey came from five investor-*owned* hospitals (7% of the total sample of 75 hospitals). These five investor-owned hospitals which provided complete tax information paid $7, 279,323.

charitable contributions from foundations, corporations, and individuals.

The Center's research on charitable contributions to hospitals confirms that philanthropic giving can be a considerable source of income for not-for-profit hospitals. *In 1982, North Carolina's not-for-profit hospitals and health care institutions received more than $25.3 million in charitable gifts from foundations and corporations.* The Duke Endowment alone made more than $10 million in grants to hospitals for construction, equipment, and free bed days for indigent patients that year, and Cabarrus Memorial Hospital in Concord received grants totaling $1,755,000 from four different Cannon foundations in 1983.

The Institute of Medicine of the National Academy of Sciences attempted to answer the question of whether for-profit hospitals make as great a social commitment in taxes paid and charity care given as do not-for-profit hospitals in charity care alone. To do so, the Institute created a social commitment index by adding (a) expenditures within the hospital for indigent care and (b) taxes paid to the county, which theoretically could then also be spent for indigent care. The total was compared to the amount spent on indigent care by not-for-profit hospitals. For-profit hospitals were found to have the greater social commitment. Using the same concept, the Center's research showed a similar finding within two North Carolina counties (Iredell and Wake), but in three other counties (Catawba, Cumberland, and Forsyth), not-for-profit hospitals were found to have the greater social commitment.

Conclusions and Recommendations

The Center's research findings lead to four major policy conclusions—(1) the state should develop a policy of allocating the burden of indigent care among hospitals; (2) the state needs to make available to the public more information about costs and charges of health care services; (3) the public should be notified if a hospital plans to eliminate or decrease the level of a service; and (4) all not-for-profit hospitals should be monitored by the state to see if they are providing sufficient benefits to their communities to merit their tax-exempt status, and counties should earmark tax revenues received from investor-owned hospitals for indigent care for county residents. The Center does *not* recommend a moratorium or prohibition on further expansion by for-profit hospital chains in the state. Such a moratorium was enacted by the

N.C. legislature for six months in 1984. Other states such as Nevada have placed limits on the amount of profits hospitals can make.

The N.C. Center for Public Policy Research recommends that the N.C. General Assembly enact one of the four options below, each of which is designed to promote two goals: (a) to provide health care for indigent patients, and (b) to ensure that every hospital in North Carolina does its fair share in providing indigent care. The four options are as follows:

(1) to establish a state-level system of hospital assessments, with the revenue generated to be allocated to hospitals with high levels of uncompensated care;

(2) to require all hospitals to provide a certain amount of indigent care as measured by a percentage of gross patient revenues;

(3) to require each of the 100 counties to enact their own indigent care programs, leaving decisions both as to how to spread the burden and how to tax the hospitals to the counties; or

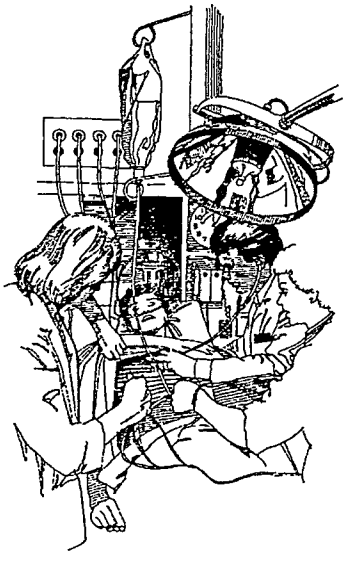
(4) to appropriate state funds for indigent care to hospitals with high levels of uncompensated care.

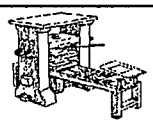
The Center also recommends that the General Assembly adopt legislation enabling the N.C. Medical Database Commission to collect data on costs, as well as charges, at all hospitals in North Carolina. The Commission should be authorized to publish this data in order to help the public make more informed choices in the health care marketplace.

The Center's third main recommendation is that a new article be added to Chapter 131E of the N.C. General Statutes requiring any hospital—public or private, not-for-profit or investor-owned—to give notice and hold a public hearing if (a) the hospital plans to eliminate permanently or indefinitely any health care service; (b) if the hospital plans to reduce permanently the volume of a service to the extent that the hospital deliberately plans to limit its treatment to fewer patients than used the same service the year before; or (c) if a hospital has temporarily eliminated or reduced a service for more than 30 days.

The Center's last major recommendation is that all private not-for-profit and public hospitals should be required to meet a "social benefit = tax exemptions" test. Not-for-profit hospitals should be required by the legislature to submit a "community benefit report" to the N.C. Medical Database Commission documenting services to the poor, educational services for all income levels, and other community services. The commission should submit this data to the N.C. Department of Revenue, which would then determine if the community benefit provided justifies each not-for-profit hospital's tax exemption. Currently, under the state's revenue laws, any organization that is exempt from federal income tax under the Internal Revenue Code is also exempt from state income tax. The Center proposes that the linkage between the state and federal exemption policies be severed. If state policymakers do not adopt this recommendation, then the Center recommends that (a) the state consider removal of the tax exemption for investor-*managed* hospitals; (b) the state allow public and private not-for-profit hospitals to retain their tax exemptions; and (c) that counties receiving tax payments from investor-owned hospitals earmark the revenues to provide indigent care for county residents.

The Center's report served as the research base for a joint production with the University of North Carolina Center for Public Television which aired on the North Carolina Public Television Network on May 25, 1988. James Bernstein, chief of the state's Office of Health Resources Development, led a discussion by a panel composed of: Earl Tyndall, administrator of Medical Park Hospital in Winston-Salem; Glenn Wilson of the UNC-CH School of Social and Administrative Medicine; Chris Fitzsimon and Jill McSweeney of UNC-TV; and Lori Ann Harris of the Center for Public Policy Research. Copies of the videotape are available for $87 by contacting Ted Harrison at WUNC Television at 919-737-2853. Call the Center at (919) 832-2839 for the price of the latest report. The first report is available from the Center for $31.40.





"Visual Bubblegum"—Dial-In TV Polls Spark Debate Among Broadcasters

by Mike McLaughlin

This regular feature of Insight examines how the news media—newspapers, television and radio—cover public affairs in North Carolina. In this issue, Insight *examines the dial-in poll, in which television viewers pay 50 cents to dial a 900 number and register their yes or no opinion on a question posed during a television newscast.*

Should U.S. Attorney General Ed Meese resign? Should the admission by Douglas Ginsburg of marijuana use disqualify him from consideration as a Supreme Court Justice? And what about a state lottery for North Carolina? Yes or no?

These are questions Tar Heel broadcasters have thrown to their viewers in dial-in polls—opinion tallies in which viewers are charged 50 cents a pop to talk back to their televisions by dialing one of two telephone numbers to register a yes or a no vote. An AT&T computer tabulates the number of yes phone calls and no phone calls and the tally is fed back to the television station for on-the-air reports. There is no chance to elaborate on one's opinion or even to say a single word. The computer places the caller in the correct category based on the phone number the viewer dials.

It isn't science, and broadcasters tell their viewers as much. But it's like the health warning on a package of cigarettes—they still want to sell the product. The dangers are misinformation and confusion about the opinions of North Carolinians on sensitive public policy issues and erosion of credibility for those who conduct their polls according to the exacting standards of social science.

Still, the polls have proliferated to the point that every North Carolina resident with a television set is likely to be able to tune in to a station that flashes a pair of 900 numbers across the screen in hopes of enticing viewer participation in the newscast. Of the 17 commercial television stations across North Carolina that feature at least a half hour each of evening and late night news, eight reported using the polls as a regular feature. A ninth station, WECT in Wilmington, dropped the dial-in polls in January 1988 because they were not generating enough response to justify their cost, says Bob Keefer, WECT assignment editor.

But costs were rarely cited among editors and news directors charged with making decisions on whether to use the polls. Dial-in polls are cheap compared to public opinion studies in which random samples are drawn so that the results can be generalized to represent the views of a larger population.

AT&T charges a $250 start-up fee for initiating the service. If the poll generates at least 500 calls—and most do—there are no additional charges. Stations are charged 25 cents for each call short of the break-even point. If a poll generated only 300 calls, for example, the station would be faced with an additional charge of $50.

Stations can also make money if the response is strong enough. AT&T reimburses stations on a sliding scale that begins at 2 cents for each call

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above the 2,000 call mark and goes up to 5 cents a call for every response above 20,000 calls. While the reimbursement rate sounds paltry compared to the phone company's take, WITN in Washington rang up $600 in revenue in a March 1987 poll. Viewers were asked whether they favored a state holiday celebrating the birthday of slain civil rights leader Martin Luther King Jr. and more than 20,000 responded, says news director Jim Bennett.

But despite the potential for a kickback, dial-in-poll users say making money is not their intent. "Dial-in polls are not revenue makers for WSOC-TV," says Mark Casey, executive producer of the Charlotte station's 11 p.m. news. "Such polls are not identified as revenue makers. Such polls are not designed to produce revenue. Very simply, making money has never and never will be a consideration in producing a dial-in poll."

Proponents of dial-in polls also say they are not intended to be scientific and are not presented as such. News directors who use the polls say they take pains to point out during the newscast the limitations of the poll, although most say they have heard of instances of abuse—cases in which disclaimers are inadequate or are omitted. They defend the polls as a means of enhancing viewer interest and participation in the newscast. A viewer who dials in a vote during the 6 p.m. news is likely to tune-in again at 11 p.m. to catch the results. "It's a way to get the viewer to talk back," says Casey. "So often we just bombard people with information. Very rarely do we ask them what they think."

News directors say the disclaimers they use with the polls inform viewers that the results are unscientific and represent only the opinions of viewers who call in a vote. At the same time, they say the polls help them get a feel for issues their audiences feel strongly about. "I just think it gives us a way of showing what some of our people are thinking," says Connie Howard, news director at WRAL in Raleigh. "I can't go away saying 50 percent of the people in the WRAL viewing area feel this way. If I had $10, I could call as many times as I wanted to."

"It identifies an issue on the national, international, state, or local level that is hot enough—touches people enough—to make them get up off the chair and pick up the telephone and give their opinion," says WSOC's Casey, who points out his station also conducts scientific public opinion surveys—five of them in 1987 alone. "I want to stress that dial-in polls were never intended to replace the scientific survey. They are intended to give the viewer instant, talk-back contact with a news program. The dial-in is designed for viewer interaction. It puts into action the viewer's often mut-

North Carolina Commercial Television Stations That Conduct Dial-in Polls

	Station	Location	Conduct Dial-in Polls Yes	No
1.	WBTV	Charlotte		X
2.	WSOC	Charlotte	X	
3.	WCTI	New Bern		X
4.	WECT	Wilmington		X
5.	WFMY	Greensboro	X	
6.	WGHP	High Point	X	
7.	WHKY	Hickory		X
8.	WITN	Washington	X	
9.	WKFT	Fayetteville		X
10.	WLOS	Asheville	X	
11.	WNCT	Greenville		X
12.	WPCQ	Charlotte		X
13.	WPTF	Raleigh	X	
14.	WRAL	Raleigh	X	
15.	WTVD	Durham		X
16.	WWAY	Wilmington	X	
17.	WXII	Winston-Salem		X

Note: WUNC Television, the state's leading public television station, carries news and public affairs programming but does not conduct dial-in polls. Stations included in the table were those that feature at least a half-hour each of evening and late night news.

Table prepared by Mike McLaughlin.

tered response to a medium that constantly speaks to [the viewer]."

Casey sets up dial-in polls for the Carolina News Network, which includes WSOC, WRAL, WFMY in Greensboro, WWAY in Wilmington, and WLOS in Asheville. He says successful polls often feature an ideologically charged issue that touches the emotions of viewers. For example, more than 10,000 viewers registered their votes when asked in an October 1987 poll whether the Senate should confirm Judge Robert Bork, President Reagan's first choice to fill the vacancy created on the Supreme Court by the retirement of Associate Justice Lewis Powell. A notable flop came later that same month when viewers were asked whether Dick Crum should resign as football coach at the University of North Carolina at Chapel Hill. "Our worst was Dick Crum's future at UNC," says Casey. "We pulled less than 500 calls. Nobody cared enough to get up and spend 50 cents."

As is the case at most stations, Bennett of Washington's WITN follows a strategy to assure that the dial-in polls generate viewer interest. The poll is announced during the noon broadcast. Reporters then collect sidewalk interviews on the same subject which are aired along with early poll results during the 6 p.m. newscast. Viewers get reminders about the poll and the phone numbers to dial throughout the evening. The final results are broadcast at 11 p.m. "You've got to tease it," says Bennett. "You've really got to promote it pretty heavily to get the proper response."

Critics among North Carolina broadcasters cite the amount of promotion required to conduct a successful dial-in poll as one of its chief drawbacks. "It takes up valuable time that could be used [for] more news stories," says Dave Davis, news director at WTVD in Durham. A feature package built around a dial-in poll can take two to three minutes. That's a significant chunk out of a half-hour broadcast.

Jim Ogle, news director at WGHP in High Point, says he has aborted scheduled dial-in polls when more important news has developed. "We don't run them on days when we've got major stuff going," says Ogle. "I'm not going to run visual bubblegum when people come to the table for a full-course meal." But Ogle concedes that once a poll is underway it must be completed, or else the station will face a host of angry viewers when they get their telephone bills. There is a potential for a dial-in poll to devour news time when a major story breaks after a poll has already started.

And some news directors say they believe that despite the disclaimers, many viewers confuse the dial-in polls with scientific public opinion samples. They say including the dial-in polls in a newscast lends them undue credibility. "No matter how carefully you couch the information you present in the polls, I suspect the overwhelming impression the audience is left with is this is a scientific opinion poll and should be given the same weight in assessing public opinion," says Mark Mayhew, assistant news director at WXII in Winston-Salem. "They are not designed to be accurate. All they do is muddy the waters, and there's enough misinformation out there as it is." Many television stations spend thousands of dollars on polls that do follow the guidelines of social science research. Some do not like to spend their credibility on polls that fall short of the mark.

"People assume that because it is on the TV news there is some kind of built-in accuracy to it," says WTVD's Davis. "They lend their credibility to something that probably doesn't deserve it."

Some critics also question the use of news time to promote a moneymaker for AT&T. "The tele-

Polling Checklist

Here are some points to consider when evaluating the merits of a poll:

1. who paid for the poll;
2. when the polling was done and any events that might have affected polling results at that time;
3. how the poll was taken—by telephone, mail, or in person;
4. the population surveyed and screening questions, such as those used in a political poll to identify likely voters;
5. the size of the sample and, where the survey design makes it relevant, the response rate;
6. some indication of the allowance that should be made for sampling error;
7. the treatment of sub-groups in the sampling process—e.g., under-representation of women and blacks; and
8. the actual wording of the poll's questions.

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phone company provides the service to you," says Bill Knowles, news director at WCTI in New Bern. "They set it up and they reap the benefits. I just don't like it because it costs something from the viewer, and it's going to the telephone company. And they're just the middleman."

Ron Laughlin, state AT&T public relations manager, concedes the service is a moneymaker but says most of the 50 cents charge to viewers represents fixed costs. These include the cost of setting up the lines and of tabulating the results and providing them to television stations, as well as local telephone company access charges.

The key to getting an accurate public opinion sample is making sure that every member of a population being surveyed has a chance of being selected.[1] This is called random sampling, and without it, the results cannot be presented legitimately as representative of a larger population.[2] Because viewers decide whether to participate in a dial-in poll, the concept of random sampling is abandoned. That means there is no need to bother with the basics of reporting poll results, such as sample size, margin of error, and confidence level. It also means the results are meaningless beyond their face value.[3] (For more on what to look for in a good scientific poll, see box on page 65.)

"There is no way to tell whether any given dial-in poll is representative or not," says Phil Meyer, a Kenan Professor of Journalism at the University of North Carolina at Chapel Hill and former research director for the Knight-Ridder newspaper chain. "It might be, and it might not be." Meyer says the biases inherent in the dial-in poll are similar to those of the clip-out survey sometimes used by newspapers. "There is a strong probability of over-representation of people for whom time is not a heavy cost, such as retired people and bored housewives," he says. "It takes 50 cents, and it takes some effort."

Meyer, who has published a number of scholarly articles on journalistic ethics and is vice president of the American Association for Public Opinion Research, says he sees no ethical problem with using the polls as long as stations include a promi-

Viewers Veto Dial-In Poll

Dial-in polls are a prominent part of many North Carolina newscasts, but do viewers want them? In at least one instance, when a television audience got to vote on the question, the answer was a resounding no.

In April 1983, an aggressive *Charlotte Observer* media critic took aim at WBTV's dial-in poll, a feature in which viewers were posed a question and asked to dial one of two telephone numbers flashed on the screen to register either a yes or a no vote.

Mark Wolf, in a column on television and radio, charged that one edition of the poll had been misrepresented as "decisive" on whether Charlotteans favored a nuclear freeze.[1] Wolf said the poll actually was "about as scientific as standing in the middle of Tryon Street (one of Charlotte's main streets) and asking people to shout their opinions out the window." He said viewers should be told the primary purpose of the poll was to boost ratings so the station could increase its advertising rates.

WBTV threw the issue to its viewers in an appropriately unscientific manner—it conducted another dial-in poll. Viewers were asked, "Do you think [Channel] 3's Poll is a worthwhile part of this newscast?"

"The overwhelming response to it was no," says Bill Foy, the station's current news director.

The *Observer*, in an article measuring about two column inches, reported the vote as running two to one against the poll, with 63 percent of viewers voting no.[2]

That was the "kiss of death" to 3's Poll, says Foy.

Of course, there was nothing scientific about the vote, but then isn't that the case with every dial-in poll?

—Mike McLaughlin

FOOTNOTES

[1] Mark Wolf, "Without Scientific Methodology, WBTV's '3's Poll' Lacks Meaning," *The Charlotte Observer*, April 7, 1983, p. 9-B.

[2] "Viewers Reject '3's Poll' in Poll," *The Charlotte Observer*, April 9, 1983, p. 13-A.

nent explanation of their worth in predicting public opinion. "As long they are doing it just for fun and it's clear that it's just for fun, I don't think there is anything wrong with it," says Meyer. "Once you begin generalizing and say this poll proves such and such a thing, then you've crossed the line. I think it's better if it is used for a frivolous question, because that way it's much less likely that the consumer will be misled. It's hard to use it on a serious subject and then convince people it should be taken frivolously."

Others in academic circles are less tolerant of dial-in polls. "They're absolute junk," says Prof. Seymour Sudman, immediate past chairman of the Standards Committee of the American Association for Public Opinion Research. "They have no redeeming value at all. If the public recognized they are absolute trash it would be OK, but many people believe they have valid meaning."

Sudman says when news organizations have conducted comparison polls using social science research techniques in conjunction with dial-in polls on the same subject, the results have been "hugely different."

ABC News, for example, conducted a dial-in poll on the question, "Should the United States take strong action against the Soviets?" for shooting down a Korean passenger plane and killing 269 people in August 1983. More than 236,000 viewers called to register their opinions, and about 94 percent favored strong action. In a scientific poll conducted by the network the same night, however, 83 percent of those surveyed favored strong action against the Soviets.[4]

"The results have absolutely no relationship to public opinion," says Sudman. Because responding to the polls costs money, Sudman says there is a built-in economic bias. He also points out there are no safeguards to prevent viewers from calling more than once. "The ideologues and so on—people who feel very strongly about their viewpoint—are likely to jump in and try to win," he says. Interest groups may also misrepresent the results of the polls even when they are presented properly on television.

Sudman says the association has taken no formal action regarding use of the polls but encourages reputable news organizations to steer clear of them. "We're sensitive about issues of free speech," says Sudman, "but we try to persuade any rational user of this thing not to do it. People find it interesting, but there's just no reality."

Mayhew, of Winston-Salem's WXII, says dial-in polls should be avoided by North Carolina broadcasters, although he does not believe use of the polls should be restricted.[5] "I feel TV shows should be free to follow their own editorial judgment," says Mayhew, "but I'm pleased that the station for which I work no longer does them."

FOOTNOTES

[1] Seymour Sudman, immediate past chairman of the Standards Committee of the American Association for Public Opinion Research, says what is necessary for a legitimate public opinion poll is that every member of a population being sampled have a known, non-zero chance of being selected and that weighting be used to adjust for unequal probabilities.

[2] A shortcoming of every telephone poll is that not everyone has a telephone and those without a phone cannot participate. This is true of dial-in polls as well as other telephone polls that use scientific sampling techniques. Southern Bell provides telephone service to the majority of North Carolina residents, and a spokesman says about 89 percent of the households within the company's service area have phones. Southern Bell's definition of household includes nursing home rooms, college dormitory rooms, and the like.

[3] Sample size is the total number of respondents who participate in an opinion poll. Margin of error is the range the results of an opinion poll may vary at a given confidence level from the actual division of opinion within the population being sampled. For example, a poll with a sample size of 500 carries a margin of error of plus or minus 4 percent at the 95 percent confidence level, meaning that in 95 of 100 samples drawn, the results would lie within 4 percentage points of the true value in the population. For more on opinion polls, see *North Carolina Insight*, October 1984, Vol. 7, No. 2, pp. 2-14.

[4] "Punishing the Soviets—What U.S. Options?" ABC News Nightline transcript, Sept. 2, 1983, Show No. 605, pp. 10-11.

[5] The North Carolina Association of Broadcasters says it has taken no position on whether dial-in polls should be used in television newscasts.

The Committee System: How Much Is Too Much?

by Paul T. O'Connor and Kim Kebschull

This regular feature of Insight *focuses on the process of policymaking in the N.C. General Assembly. In this installment,* Insight *takes a look at the legislature's committee system and examines whether there are too many committees—and whether members have too many committee assignments.*

Harold Brubaker is a lucky man. According to the Senate Rule Book, the Randolph County Republican, a veteran legislator with six terms under his belt, serves on 13 standing committees in the N.C. General Assembly. Nine of those meet each week (some of them every day during the legislative session), another (the UNC Board of Governors Nominating Committee) meets whenever there are vacancies that need nominations, and three more meet at the call of the chairman. It all makes for a rugged schedule for the Asheboro businessman, but he's not complaining. Many of his committee assignments are actually subcommittees of the Appropriations Committee, and most days, he can make all of his committee meetings. Not everyone can say that.

For instance, during the 1987 legislative session, some of the fiercest debates occurred in the House Committee on Manufacturing and Labor, where Brubaker is a member. House Speaker Liston Ramsey had divided the committee equally between advocates of the usually conflicting interests of business on one side and consumers and workers on the other. Members of the committee from both sides say that some cases—issues like workmen's compensation benefits, child care leave, and consumer protection on new car purchases—were decided not by the force of argument or the merits of debate, but by each side's ability to get its votes to the committee meeting.

"Every time that a vote was called," Brubaker recalls, "things were so tight pro and con that you literally had to go around and count to see if it would pass. The vote would constantly change depending on who was in the room at the time."

The proceedings of the Manufacturing and Labor Committee are not recalled here to accuse legislators of dodging their responsibility to work. Rather, the committee's often boisterous hearings of 1987 highlight a problem with the way the legislature operates. Members serve on so many committees that they are often scheduled to be in two places at the same time. When the crunch comes at the end of a session, they must often choose which important meeting they will attend, and which they will miss. For instance, Rep. Joe Hackney (D-Orange) serves on Manufacturing and Labor and on the Natural and Economic Resources committees, both major panels in the General Assembly. They meet at the same hour, and Hackney often must rush from one to the other.

Sen. Laurence Cobb (R-Mecklenburg) has had similar conflicts in the past, though the Senate tries to avoid scheduling conflicts except where a legisla-

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tor specifically requests assignment to committees that meet at the same time. "You have to develop a buddy system [with another legislator] to help you keep up with what's going on in committee, and when something important is going to come up, you can make sure you're both there," says Cobb. And if a member is sponsoring a bill in yet another committee at the same hour, that legislator must be there to help guide it through.

According to *The Book of the States,* North Carolina ranks right at the top of the 50 state legislatures in the number of standing committees.[1] In 1985, the N.C. House of Representatives had 58 committees, the largest number of any of the states. The Senate, that same year, had 30 committees, second only to New York's 31. In 1987, the N.C. Senate took over first place as the number of its committees grew to 37—more than double the national Senate average of 15.6. The N.C. House's 58 committees were more than twice the national House average of 20. See Table 2, p. 70, for more.

Committees in both the House and the Senate are appointed by the presiding officers—House Committees by the Speaker of the House, according to House Rule 26, and by the Lieutenant Governor, who is the president of the Senate, according to Senate Rule 31. By custom, the Speaker and the Lieutenant Governor can increase or decrease the number of committees, subject to the approval of the Rules committees and the membership. Committees meet during the morning, beginning at 8:30 a.m. for both Appropriations committees (which meet until 10 a.m. Other committees meet for an hour, with sessions beginning on the hour, until 1 p.m. Legislative sessions usually begin around 1:30 p.m.).

Too Many Assignments?

In the 1980s, the *number of committees* in the House has altered very little; the number of Senate committees has undergone greater fluctuation, but there seems to be no consistent trend. The Senate Alcoholic Beverage Control Committee has been dropped and re-instituted over the years, as have committees on Senior Citizen Affairs and Veterans and Military Affairs. Committees on Public Utilities and Energy, Congressional and Senatorial Redistricting, Small Business, and the University Board of Governors Nominations have been dropped, and Committees on the Environment and Children and Youth have been added.

Because of the large number of committees, North Carolina legislators hold many committee appointments. In 1987, the average was 10.7 committees per Democratic representative, and 10.2 per Democratic senator—the highest in years for each. Republicans in both chambers had fewer committee assignments—9.9 each in the House, 8.0 in the Senate. See Table 3 on page 73 for more. Rep. Betsy Cochrane (R-Davie), the House minority leader, isn't surprised by the difference in workload. "Republicans usually get the committees they ask for," says Cochrane, "but I've checked in previous years and I've found that Republican representation is often higher on the less important committees, and not as high on the important policy-making committees."

The average *number of committee assignments* for House Democrats and Republicans has shown a consistently upward trend in the 1980s, up about 17 percent for House Democrats, 13 percent for House Republicans. Senate Democrats were on more committees in 1987 than they were in 1981 (up 5 percent), but in 1983 and 1985 the numbers actually went down, reaching their lowest point (about 8 committees per member) in 1985. Senate Republicans today have slightly fewer committees, measured both by average and mode (most frequently occurring number), than they did in 1981, but more than they had in 1983 and 1985, when Republicans had only 6.6 committees each. That low number could be attributed to the fact that there were more Republicans in the Senate in 1985 (12) than in any other year surveyed, at a time when the number of

Table 1. Number of Legislative Committees in N.C., 1957-1987

	Senate	House
1957	29	47
1967	35	47
1977	35	45
1981	38	59
1983	34	57
1985	30	58
1987	37	58

Source: North Carolina Manuals, 1957-1988

Table 2. Number of Committees Per Chamber, by State, 1987

State	Senate	Rank Among All States	House	Rank Among All States
Alabama	17	18	24	16
Alaska	9	44	9	47
Arizona	11	37	16	28
Arkansas	10	42	10	44
California	22	6	26	11
Colorado	11	37	12	40
Connecticut	20 *	7	20 *	21
Delaware	20	7	20	21
Florida	16	20	28	7
Georgia	24	4	28	7
Hawaii	20	7	17	26
Idaho	11	37	14	35
Illinois	18	13	25	15
Indiana	19	11	26	11
Iowa	15	22	15	29
Kansas	18	13	21	18
Kentucky	15	22	17	26
Louisiana	15	22	15	29
Maine	19 *	11	19 *	24
Maryland	9	44	10	44
Massachusetts	7	49	6	48
Michigan	15	22	30	5
Minnesota	18	13	21	18
Mississippi	28	3	30	5
Missouri	23	5	49	2
Montana	16	21	14	35
Nebraska	13 **	31	—	—
Nevada	9	44	13	37

— continued

committees had been reduced to 30. The number of Democratic committee assignments dropped in 1985 as well.

In both 1985 and 1987, certain Republicans were given vice chairmanships of one Senate or House committee; most Democrats serve as chairmen of one committee and also serve as committee vice chairmen. Senate committee chairmen usually are also given one committee vice-chairmanship, while House committee chairmen may also have two or more vice-chairmanships.

Republicans, who haven't controlled the legislature since the turn of the century, don't fare very well in assignments. Not only do Republicans serve on slightly fewer committees per member (2.2 committees fewer in the Senate, 0.8 committees fewer in the House), they also do not get committee chairmanships—though some Republicans have been named to vice-chairmanships. Both Cochrane and Cobb say that while Republicans generally

Table 2. Number of Committees Per Chamber, by State, 1987, *continued*

State	Senate	Rank Among All States	House	Rank Among All States
New Hampshire	15	22	23	17
New Jersey	17	18	27	10
New Mexico	8	48	15	29
New York	32	2	37	3
North Carolina	**37**	**1**	**58**	**1**
North Dakota	15	22	15	29
Ohio	11	37	26	11
Oklahoma	18	13	28	7
Oregon	14	29	15	29
Pennsylvania	20	7	21	18
Rhode Island	6	50	6	48
South Carolina	18	13	11	42
South Dakota	13	31	13	37
Tennessee	9	44	11	42
Texas	12	34	34	4
Utah	10	42	10	44
Vermont	12	34	15	29
Virginia	11	37	20	21
Washington	13	31	19	24
West Virginia	15	22	13	37
Wisconsin	14	29	26	11
Wyoming	12	34	12	40
Average:	**15.6**		**20**	

* All joint committees.

** Nebraska's legislature is unicameral, but is called the Senate.

Note: These figures do not generally include joint committees, except as noted for Connecticut and Maine, which use joint committees exclusively.

Source: The Book of the States, 1988-1989.

get the committee assignments they ask for, representation on the major committees is not always what it should be. "If Republicans make up one-third of the House, then you might expect they'd make up one-third of *each* committee. But the last time I looked, our [Republican] representation on the major committees ran a little less than that, and it ran a little higher on the lesser committees," says Cochrane. Adds Cobb, "There are some cases of under-representation on the major committees, but I don't feel that we've [Republicans] all been dumped into committees like Building and Grounds or anything like that."

Efforts For Reform

The assembly has long been criticized for its large number of committees, which some detractors believe weakens the legislative process because members may be spread too thin. The most recent

effort to change the system came in 1983, when Sen. Gerry Hancock (D-Durham) sponsored the Citizen Legislature Act, designed to preserve a citizen legislature by making it easier for the average citizen to serve. Among Hancock's recommendations for changes in the legislative process were shorter sessions and more standing committee work between legislative sessions. His bill, which passed the Senate but failed in the House, recommended a reduction in the number of standing committees in each house to somewhere between 10 and 20. "The objective is to get a committee system under way that will allow any member to meet his or her committee obligations without conflicts and overlaps," Hancock wrote at the time.[2]

Supporters of that proposal argued that committee work was too important to the legislative process to continue saddling members with so many assignments. Cutting down the number of committees would allow members to develop more expertise and knowledge in a particular field—although it also would mean that each committee would handle far more legislation, assuming that no restriction on bill introductions was adopted.

But the proposal did not attract widespread support, and the number of committees remains high. Legislators generally express support for the current system, saying they are not willing to trade away the benefits that come with many committee assignments for the benefits that come from a system of fewer committees. They identify three basic trade-offs involved when choosing between the two systems.

■ *The current system allows more legislators to serve as committee chairmen, and it therefore disperses legislative power among a greater number of legislators.* "When you reduce the number of committees, you reduce the opportunities for a lot of members to play an important role" in the legislature, says Rep. Robert Hunter (D-McDowell).

Lt. Gov. Robert B. Jordan III, who reduced the number of Senate committees when he came into office (from 34 to 30) but who in 1987 named 37 committees, says he's opposed to further reductions. "You spread the power when you have more chairmen. If you had only four chairmen, we'd have an even greater degree of concentration of power."

Proponents of fewer committees see the issue in exactly the opposite terms. They say that by reducing the number of committees, the legislature would involve more members in the nuts-and-bolts of each piece of legislation. Thus, they see their proposal as a way to disperse power. "If we had fewer committees, we'd have more members on each committee," says Sen. Harold Hardison (D-Lenoir). Then, when a bill got to the floor, more members would have had the benefit of hearing the detailed debate, which usually occurs in committee and not on the floor, and more legislators would have had input into fashioning the bill as it is presented on the floor.

That would be a real dispersal of power, agrees Brubaker. The current system doesn't really disperse power because "on the important issues, the chairmen are going to check with the leadership anyhow," he says. A chairman of a committee of minor or moderate importance is not going to buck the preferences of the House Speaker or Lieutenant Governor, Brubaker adds.

■ *Supporters of the current system say that it allows legislators to develop a broader knowledge of the issues which are coming through the General Assembly.* "It's best to have as broad a view as possible," says Rep. Joe Mavretic (D-Edgecombe). "It's a question of whether the General Assembly ought to be a population of specialists versus a population of generalists."

Reducing the number of committees would limit the number of people who have knowledge of an area. As Representative Hunter puts it, "I enjoy being on a number of different committees because I don't get confined to one area."

But Sen. Charles Hipps (D-Haywood) argues that the large number of committees creates some absurd situations. "Look at the Education Committee," he said. "I don't understand why we have an Education Committee with one chairman [for education policy issues] and a different committee with a different chairman for education funding." Those two committees should be combined, he says, because it often is impossible to distinguish between a policy issue and a funding issue. If combined, the new committee might involve just as many people, Hipps adds.

Brubaker says that legislators are stretched thin. They spend only one hour in most committee meetings and never really develop an in-depth understanding of the issues. With fewer committees, meetings could run longer and legislators could learn more about the proposals before them. Even Hunter, an opponent of fewer committees, concedes that "it's harder to do in-depth analysis" on most issues when legislators have so many committees to attend and so many bills to monitor. Yet others

Table 3. N.C. Legislators: Number of Committee Assignments, 1957-1987

Senate

	Democrats	Republicans
1957	Avg. 8.3	Avg. 8.7 (All Republicans given Vice-Chairmanships)
1967	Avg. 11.6	Avg. 10.4
1977	Avg. 8.9	Avg. 8.3 (All Republicans given Vice-Chairmanships)
1981	Avg. 9.7	Avg. 8.8
1983	Avg. 8.6	Avg. 7.8
1985	Avg. 8.2	Avg. 6.6 (Some Republicans given Vice-Chairmanships)
1987	Avg. 10.2	Avg. 8.0 (Some Republicans given Vice-Chairmanships)

House

	Democrats	Republicans
1957	Avg. 9.1	Avg. 8.7
1967	Avg. 8.1	Avg. 8.0
1977	Avg. 6.9	Avg. 6.7
1981	Avg. 8.9	Avg. 8.6
1983	Avg. 10.1	Avg. 9.2
1985	Avg. 10.2	Avg. 9.5 (Some Republicans given Vice-Chairmanships)
1987	Avg. 10.7	Avg. 9.9 (Some Republicans given Vice-Chairmanships)

Chart prepared by Kim Kebschull

point out that with fewer committees, each committee would have to handle more bills—and the time that could be allotted to each measure would be reduced.

A spin-off to this debate is the question of staff. Brubaker says that the shallow knowledge legislators obtain on any individual proposal increases the power of legislative staff. They do most of the research, they draft bills, and they fashion amendments, he says. With this system, Brubaker charges, the staff gains too much power. But Mavretic says the current system should be applauded for encouraging the development of a "good-sized and competent staff" which can advise legislators.[3]

Another staff consideration is the increasing likelihood that one day, the General Assembly may create separate staffs for the House and the Senate. Currently, one staff serves both the House and the Senate for fiscal research, bill drafting, and general research. But as relations between the two chambers become more strained, as they have in recent sessions, the pressure for separate staffs will grow, legislative observers say.

■ *The current system allows the legislature to highlight special needs, but reducing the number of committees would de-emphasize important issues.* Supporters of the current system point with pride to such committees as the House Committee on Commissions and Schools for the Blind and Deaf. If the number of committees were reduced, this committee would almost certainly be a casualty, they say, because these schools use such a small piece of the state education budget. "The current system gives those people a committee which is well-versed and attentive" to the needs of those schools, Mavretic says. If the committee were consolidated into a larger education committee that handled all schooling from pre-school to the universities, the concerns of the deaf and blind "would only be a small part of the agenda, and they wouldn't get any attention," he warns.

Sen. Tony Rand (D-Cumberland) says that concern over the loss of forums for specific interests is one of the biggest stumbling blocks to any sizable reduction in the number of committees. "If you try to eliminate a committee you encounter a certain amount of turf fighting. People with an interest in an area want a committee to handle their problems," says Rand, the Democratic nominee for lieutenant governor in the 1988 elections.

Those problems would not be overlooked, say proponents of fewer committees. Brubaker and Hipps note that subcommittees likely would be created for individual areas of interest. The issues would get just as much individual attention in the subcommittees, and then get another review when considered by the full committee before going to the

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Table 4. Standing Committes in the 1987-88 General Assembly

Senate	House of Representatives
	Aging
Alcoholic Beverage Control	Alcoholic Beverage Control
Agriculture	Agriculture
Appropriations	Appropriations-Expansion Budget
Appropriations – Education	Appropriations Base Budget – Education
	Appropriations Expansion Budget – Education
Appropriations – General Government	Appropriations Base Budget – General Government
	Appropriations Expansion Budget – General Government
Appropriations – Human Resources	Appropriations Base Budget – Human Resources
	Appropriations Expansion Budget – Human Resources
Appropriations – Justice and Public Safety	Appropriations Base Budget – Justice and Public Safety
	Appropriations Expansion Budget – Justice and Public Safety
Appropriations – Natural and Economic Resources	Appropriations Base Budget – Natural and Economic Resources
	Appropriations Expansion Budget – Natural and Economic Resources
Base Budget	Appropriations Base Budget
	Banks and Thrift Institutions
Children and Youth	Children and Youth
Commerce	
	Commissions and Schools for the Blind and Deaf
Constitution	Constitutional Amendments
	Corporations
	Corrections
	Courts and Administration of Justice
	Cultural Resources
Economic Growth	Economic Growth
Education	Education
Election Laws	Election Laws
	Employment Security

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Table 4. Standing Committes in the 1987-88 General Assembly, *continued*

Senate	House of Representatives
Environment	Water and Air Resources
Finance	Finance
	Governmental Ethics
	Health
Higher Education	Higher Education
	Highway Safety
	Housing
Human Resources	Human Resources
Insurance	Insurance
Judiciary I	Judiciary I
Judiciary II	Judiciary II
Judiciary III	Judiciary III
Judiciary IV	Judiciary IV
	Law Enforcement
Local Government and Regional Affairs I	Local Government I
Local Government and Regional Affairs II	Local Government II
Manufacturing and Labor	Manufacturers and Labor
	Marine Fisheries
	Mental Health
	Military and Veterans' Affairs
Natural and Economic Resources and Wildlife	Natural and Economic Resources
Pensions and Retirement	Pensions and Retirement
	Public Utilities
Rules and Operations of the Senate	Rules and Operations of the House
	Small Business
State Government	State Government
State Personnel	State Personnel
	State Properties
Transportation	Transportation
Veterans Affairs and Senior Citizens	
Ways and Means	
	Wildlife Resources
University Board of Governors	University Board of Governors Nominating Committee
Board of Community Colleges	

New Faces in Those Rated Most Influential Lobbyists

by Jack Betts

Planning for a lucrative career as a lobbyist? No problem—just be born male, get a law degree, get elected to the N.C. General Assembly, and—if you can swing it—become Governor of North Carolina. That will almost guarantee you a lofty place in the N.C. Center for Public Policy Research's rankings of the most influential lobbyists.

Lawyers and former legislators continue to rank at or near the top in the Center's fourth biennial lobbyist effectiveness rankings, but public-interest lobbyists are moving up on the list as well. So are women, according to the Center's latest rankings.

Ran Coble, the Center's executive director, and himself a former legislative staff member and former legislative liaison for the N.C. Department of Human Resources, says, "Historically, lobbyists for businesses, state agencies, and associations have done well, but what's new in these rankings is that public interest lobbyists and women lobbyists are making their first real appearances near the top."

The Center's rankings are based on surveys of all 170 legislators, registered lobbyists in the 1987 session, and capital news correspondents. This year's rankings show that the top four lobbyists are both former legislators *and* lawyers, and that 11 of the top 25 lobbyists are former legislators or legislative officers. (One of the 11 is former Gov. James B. Hunt Jr., who as Lieutenant Governor was President of the Senate from 1973-1977.) And 13 of the top 25 lobbyists are lawyers.

Some familiar names head the list of top lobbyists. Former state Sen. Zebulon V. Alley, a close ally of House Speaker Liston B. Ramsey, moved into the top spot this year, up from fourth in 1986. Alley displaced former top lobbyist Samuel H. Johnson, who ranks second this year and has ranked first or second every year the rankings have been published. In third place is J. Allen Adams, a former five-term House member who also placed third in 1986. Fourth was John R. Jordan Jr., another former legislator, who placed second in 1986 and first in 1982 and 1984.

Center Staffer Lori Ann Harris, who did the research on which the rankings are based, says, "It's no coincidence that lawyers and legislators make good lobbyists. It helps to be a lawyer, because a lawyer is more likely to understand how to draft a bill and what its implications will be. Former legislators naturally have more experience in the legislative process, and current legislators are more apt to trust a former member's judgment." As Sen. Don Kincaid (R-Caldwell) puts it, "If they've been in the trenches with you two or three times, there's got to be a camaraderie there."

The developing strength of public interest lobbyists* is exemplified by William E. Holman, an

Jack Betts is editor of North Carolina Insight.

*The Center defines a public interest lobby as one which seeks a collective good, the achievement of which will not selectively and materially benefit the membership of the organization. This definition excludes groups which engage in some public interest lobbying but have as their primary purpose the benefit and protection of their membership.

environmental lobbyist, who moved from 10th in 1984 to sixth in 1986 to fifth this year; Margot Roten, a lawyer and lobbyist for the N.C. Legal Services Resource Center, representing the poor, who ranked 17th; and Roslyn S. Savitt, lobbyist for the State Council for Social Legislation, who ranked 19th.

Roten and Savitt were joined by three other women in the rankings—Patricia J. Shore (25th) who represents R.J. Reynolds Tobacco Company; Fran Preston (27th) of the N.C. Retail Merchants Association; and Jo Ann Norris (31st) of the Public School Forum of N.C. This is the first appearance in the rankings for Roten, Savitt, Shore, and Preston, and the first time more than one woman has been ranked.

Legislative experience and legal expertise are not the only requirements. "Hard work, determination and perseverance can pay off, too," adds Coble. "For instance, Bill Holman was just out of college when he began lobbying the legislature. Over the years, he has moved up steadily so that legislators now seek him out because he does his homework and represents a growing citizen concern about protecting North Carolina's environment. Now he ranks fifth among all lobbyists."

Holman says he relies on citizens and environmental groups at the local level to help make him more effective. "You could call it the heat and light theory. I try to provide the light, and the local conservation groups provide the heat," he says.

The lobbyist who moved up the most in the rankings is C. Ronald Aycock, lobbyist for the N.C. Association of County Commissioners. Aycock was 17th in 1986; this year he placed ninth. Also

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Rankings of the Most Influential Lobbyists in the 1987 General Assembly

1987-88 Ranking	Previous Ranking (Where Applicable) 1985-86	1983-84	1981-82	Lobbyist	Former Legislator	Lawyer
1	4	3	5	**Zebulon D. Alley** of the Raleigh office of the Waynesville law firm of Alley, Killian, & Kersten, representing 25 clients with business/industry, health care, and utility interests, including Burlington Industries, the Microelectronics Center of N.C., N.C. Vending Association, Kaiser Health Foundation Plan of N.C., and Texasgulf Chemicals Company.	yes	yes
2	1	2	2	**Samuel H. Johnson** of the Raleigh law firm of Johnson, Gamble, Hearn, & Vinegar, representing 23 clients with business/industry interests, including N.C. Associated Industries, N.C. Automobile Dealers Association, N.C. Association of Certified Public Accountants, and the Soap and Detergent Association.	yes	yes
3	3			**J. Allen Adams** of the Raleigh law firm of Adams, McCullough, & Beard, representing 16 clients with business/industry, arts and health care interests, including Arts Advocates of N.C., N.C. Cemetery Association, N.C. Association of Electric Cooperatives, and GSX Chemical Services.	yes	yes

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Rankings of the Most Influential Lobbyists in the 1987 General Assembly *continued*

1987-88 Ranking	Previous Ranking (Where Applicable) 1985-86	1983-84	1981-82	Lobbyist	Former Legislator	Lawyer
4	2	1	1	**John R. Jordan Jr.** of the Raleigh law firm of Jordan, Price, Wall, Gray, & Jones, representing 17 clients with business/industry and health care interests, including the N.C. Bankers Association, N.C. Association of Life Insurance Companies, N.C. Day Care Association, American Express Company, and the N.C. Association of ABC Boards.	yes	yes
5	6	10		**William E. Holman,** representing the N.C. Chapter of the Sierra Club, the Conservation Council of N.C., the N.C. Chapter of the American Planning Association, and the N.C. Chapter of the Wildlife Federation.	no	no
6	8			**William C. Rustin Jr.** of the N.C. Retail Merchants Association.	no	no
7				**W. Paul Pulley Jr.** of the Durham law firm of Pulley, Watson, King, & Hofler, representing business/industry, government, and health care interests, including Allstate Insurance Company, Consolidated Coin Caterers Corporation, N.C. Aquarium Society, High Point Enterprise, and Wake County, N.C.	yes	yes
8	5	4	4	**J. Ruffin Bailey** of the Raleigh law firm of Bailey & Dixon, representing the N.C. Credit Union League, N.C. Bus Association, N.C. Beer Wholesalers Association, and the American Insurance Association.	yes	yes
9	17	15		**C. Ronald Aycock** of the N.C. Association of County Commissioners.	no	yes
10				**Jay M. Robinson,** representing the University of North Carolina System.	no	no
11				**David M. Blackwell,** then with the N.C. Academy of Trial Lawyers, and now publisher of the *North Carolina Lawyers Weekly*.	yes	yes
12				**James B. Hunt Jr.**, former governor and now attorney in the Raleigh law firm of Poyner & Spruill, representing nine clients with business/industry interests including R. J. Reynolds Tobacco Company, U.S. Sprint Communications Company, ElectriCities of N.C., and the National Multi-Housing Council.	no*	yes

*Hunt was a N.C. Senate officer when he was Lt. Governor.

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Rankings of the Most Influential Lobbyists in the 1987 General Assembly *continued*

1987-88 Ranking	Previous Ranking (Where Applicable) 1985-86	1983-84	1981-82	Lobbyist	Former Legislator	Lawyer
13				**Durwood F. Gunnells** of the N.C. State Employees Association.	no	yes
14				**Roger W. Bone** of the Raleigh lobbying firm of Bone & Associates, representing the N.C. Automobile Dealers Association, Blue Cross and Blue Shield of N.C., Educational Excellence in the Tar River Region Area Committee, Olin Corporation, and the Tobacco Institute. Bone is also a part-time employee of the N.C. Department of Community Colleges.	yes	no
15	7	5		**R. D. McMillan Jr.**, representing the University of North Carolina System and the Committee for Church Related Non-Profit Homes for the Aging.	yes	no
16	15	14		**Robert R. Harris** of Carolina Power & Light Company.	no	no
17				**Margot Roten** of the N.C. Legal Services Resource Center.	no	yes
18				**John T. Bode** of the Raleigh law firm Bode, Call, & Green, representing Burlington Industries,Consult Care, and Independent Insurance Agents of N.C./Carolinas Association of Professional Insurance Agents.	no	yes
19				**Roslyn S. Savitt** of the State Council for Social Legislation.	no	no
20				**Roy M. Wall** of Duke Power Company.	no	no
21	10			**John T. Henley** of the N.C. Association of Independent Colleges and Universities.	yes	no
22				**Christopher L. Scott** of the N.C. State AFL-CIO.	no	no
23 (tie)	12			**John D. Hicks**, then of Duke Power Company.	no	yes
23 (tie)				**Bryan Houck** of Southern Bell.	no	no
25				**Patricia J. Shore** of R. J. Reynolds Tobacco Company.	no	no
26				**Patric Mullen**, then of the N.C. Association of Educators.	no	no

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Rankings of the Most Influential Lobbyists in the 1987 General Assembly *continued*

1987-88 Ranking	Previous Ranking (Where Applicable) 1985-86	1983-84	1981-82	Lobbyist	Former Legislator	Lawyer
27				**Fran Preston** of the N.C. Retail Merchants Association.	no	no
28	9	8		**Alan D. Briggs,** Deputy Attorney General for Policy and Planning in the N.C. Department of Justice.	no	yes
29	16	7		**Virgil McBride,** representing the N.C. Pharmaceutical Association, R. J. Reynolds Tobacco Company, National Automobile Transporters Association, N.C. Telephone Association, and the N.C. Trucking Association.	no	no
30				**William A. Pully** of the North Carolina Hospital Association.	no	yes
31	18			**Jo Ann Norris** of the Public School Forum of North Carolina.	no	no
32				**Samuel L. Whitehurst** of the N.C. Soft Drink Association.	yes	no

moving up were Alley, Holman, and William C. Rustin Jr., president of the N.C. Retail Merchants Association.

Among the other newcomers to this list who Coble characterizes as likely to be perennial heavy-hitters as lobbyists are former Gov. James B. Hunt Jr. of Raleigh and Wilson, whose corporate law clients include Pepsico, R.J. Reynolds Tobacco Company, and ElectriCities of North Carolina, and who ranks 12th in this survey; former state Rep. W. Paul Pulley of Durham, whose clients include Burlington Industries and Allstate Insurance and who ranks seventh in his first stab at lobbying; Durwood F. "Butch" Gunnells of the N.C. State Employees Association, who ranks 13th; and former state Rep. Roger W. Bone of Rocky Mount, representing several clients including the Automobile Dealers Association of N.C. and Blue Cross and Blue Shield of N.C., who ranks 14th.

Coble also points out that the rankings indicate a changing of the guard for several organizations that traditionally have lobbyists ranked among the most influential. UNC System President William C. Friday, who ranked 13th in 1986, has retired, but UNC Vice President Jay Robinson, who has assumed most of Friday's lobbying chores, ranks 10th in the current survey. Similarly, Alan D. Briggs was ranked ninth in 1986 when he lobbied for the N.C. Academy of Trial Lawyers, but Briggs since has gone to work for the N.C. Attorney General. Briggs' replacement, former legislator David Blackwell, is ranked 11th in the 1988 rankings—but now Blackwell has left that job to be publisher of the *North Carolina Lawyers Weekly.* And in 1986, Jo Ann Norris placed 18th in the rankings for her work as the lobbyist for the N.C. Association of Educators. Norris has left the NCAE for the Public School Forum of North Carolina, and her replacement, Patric Mullen, ranks 26th in the 1988 rankings.

During the 1987 session, there were 412 lobbyists registered with the Secretary of State's office. They represented 395 different companies or organizations. There were also 258 legislative liaisons representing 63 different agencies in the executive branch of state government. By the end of the 1988 short session, there were 688 registered lobbyists. Unlike figures compiled by the Secretary of State's office, these calculations count each lobbyist only once. They do not reflect multiple listings when a lobbyist represents more than one client. These rankings were based on lobbyists' performance during the 1987 long session.

The lobbyist rankings are available for $4.15 from the N.C. Center for Public Policy Research, P.O. Box 430, Raleigh, NC 27602. They are a companion piece to *Article II: A Guide to the 1987-88 N.C. Legislature* and the 1988 rankings of legislators' effectiveness, which are available for $16.80 plus $1.50 postage from the Center. Both prices include postage and handling. The *Guide* is a directory of legislators serving in the 1987-88 sessions that includes each legislator's education, occupation, list of bills introduced, voting record, and effectiveness rankings before 1988.

IN THE LEGISLATURE — *continued from page 73*

floor. That should give bills a thorough airing and allow more legislators to bone up on the issues.

Hardison, who chaired the Senate Commerce Committee for the past two sessions, says his experience proves that. The committee was formed out of the three old committees on Banking, Public Utilities, and Small Business. Rather than have their issues lost in the shuffle, Hardison said, these industries found a more efficient and coordinated Senate system under the merged committee.

Of course, the General Assembly uses subcommittees now to resolve tough issues, although they are not standing subcommittees, as is common in the U.S. Congress. And critics of a smaller committee system with regular subcommittees point out that the need for a large number of subcommittees will merely duplicate what the legislature now has—a large number of committees, regardless of whether they are called committees or subcommittees.

Other arguments also enter the debate. Supporters of the current system, for example, note that the large number of committees provides a good training ground for new legislators. Freshman Democratic senators, and House members in only their third term, often can get minor committee chairmanships. There they learn how to handle a committee and prepare themselves for the days when they might be Appropriations, Finance, or Judiciary Committee chairmen.

Also, Mavretic argues that committee chairmen must learn the rules well. With so many members holding a chairmanship of one kind or another, a greater number of members develop a good understanding of the chamber rules.

One final argument is mentioned by both sides. With a great many committees, almost every Democratic legislator gets to be a chairman, and that is good for legislative egos. It also may look good to the homefolks. "Everyone wants to be a hero, and the way to make them a hero is to make them a committee chairman," says Hipps.

That's not the point, Mavretic replies. "If you think the public out there in Tarboro gives one whit that I'm the chairman of a committee, you're nuts," notes Mavretic.

Still, most legislators would much prefer to be a committee chairman than just another member—and it takes a lot of committee chairmanships to feed the needs of 170 legislators.

FOOTNOTES

[1]*The Book of the States 1986-87,* Council of State Governments, Lexington, Ky., p. 123.

[2]Gerry Hancock, unpublished paper in support of the Citizen Legislature Act (SB 5406), 1983 General Assembly. The bill was approved by the Senate 35-12, but failed in the House when the Rule Committee declined to act on the bill.

[3]For a closer look at the development of the legislative staff and its expertise, see Ran Coble, "Three Key Trends Shaping the General Assembly Since 1971," *North Carolina Insight,* Vol. 9. No. 4, June 1987, p. 35.

INDEX TO VOLUME 10

Below is a subject index to *North Carolina Insight*, Volume 10 (1987-88). Following the subject heading is the article title, the author(s), the number of the issue in Volume 10 where it appeared, and the page number in the issue. Vol. 10, No. 1 was published in October 1987; Vol. 10, No. 2-3 (a Special Double Issue) was published in March 1988; and Vol. 10, No. 4 was published in June 1988.

IN THE MAIL

Vol. 10, No. 2-3
Theme Issue on the Environment

The March 1988 *North Carolina Insight*, "Resources at Risk: Environmental Policy in North Carolina," is the most comprehensive analysis of North Carolina's environmental problems and policies to date.

You've helped educate citizens and policymakers, and you have provided environmental organizations and policymakers with an agenda for 1988 and the future. Keep up the good work.

Bill Holman, Lobbyist
Conservation Council of North Carolina
Sierra Club, N.C. Chapter
Raleigh

Your special double issue on environmental policy was especially helpful. I have recommended it to a number of persons as a reference and resource.

However, I feel you erred in your recommendations (page 52).

First of all, you recommended a revolving loan fund for local landfill construction, but more landfills are not the answer. Also, present North Carolina regulations make it almost impossible to site a landfill.

More important, the last part of the first recommendation states: "The fund might be used . . . to open regional waste disposal centers, including *regional waste incinerators* to reduce waste volume before landfilling the remains" (emphasis mine).

The evidence against waste incinerators is voluminous. In brief, the major problems are air pollution; hardly any incinerator has so far been constructed to eliminate this. Next is the problem of ash disposal. The "remains" cannot be landfilled in the usual manner, as the ash is usually toxic or high in heavy metals. Lined ash disposal facilities collect water. Then one must somehow remove this toxic leachate. And finally, incineration does not result in the promised waste reduction.

In view of the many environmental drawbacks concerning landfills and incinerators, policymakers should seriously consider alternatives before appropriating government funds for their construction. The solution to the solid waste crisis lies in a combination of waste reduction, reuse, recycling with source separation where feasible, recycled materials processing, and composting, in that order, with land disposal as a last alternative.

Leah Karpen, Weaverville

Vol. 10, No. 4
School Bus Safety

Your article in the June, 1988 issue of *North Carolina Insight* on the school bus safety situation in North Carolina was excellent. It addressed the major issues with fairness for all sides of the debate. I believe that one thing that your article has proven is that statistics are irrelevant in this matter. Good common sense is the more appropriate way of dealing with the problem of the age of bus drivers. It is the opinion of the N.C. School Bus Safety Committee that a fairly paid, well-trained corps of professional school bus drivers makes good common sense as opposed to what we have had in the past.

Another point that was not mentioned in your article is that North Carolina has historically underfinanced its school bus transportation program. North Carolina spends about 98 cents per mile of service while the national average is $1.87. Michigan, with approximately the same number of pupils transported and number of buses, spends $2.63 per mile of service. Even West Virginia, a state that has known economic depression much better than we have, spends at over twice the rate of North Carolina. The fact is that there are only five states that spend under $1 per mile of service, and North Carolina is one of them.

With the future of our state being transported daily on almost 14,000 buses across our state, doesn't it make good common sense to provide the safest and most efficient school bus system available to us?

North Carolina has a long way to go, but we are on the right path. Articles such as yours should help shed light on what has become, until recently, a hidden problem.

M. Reid Overcash, President
N.C. School Bus Safety Committee
Raleigh

Coming Soon ...

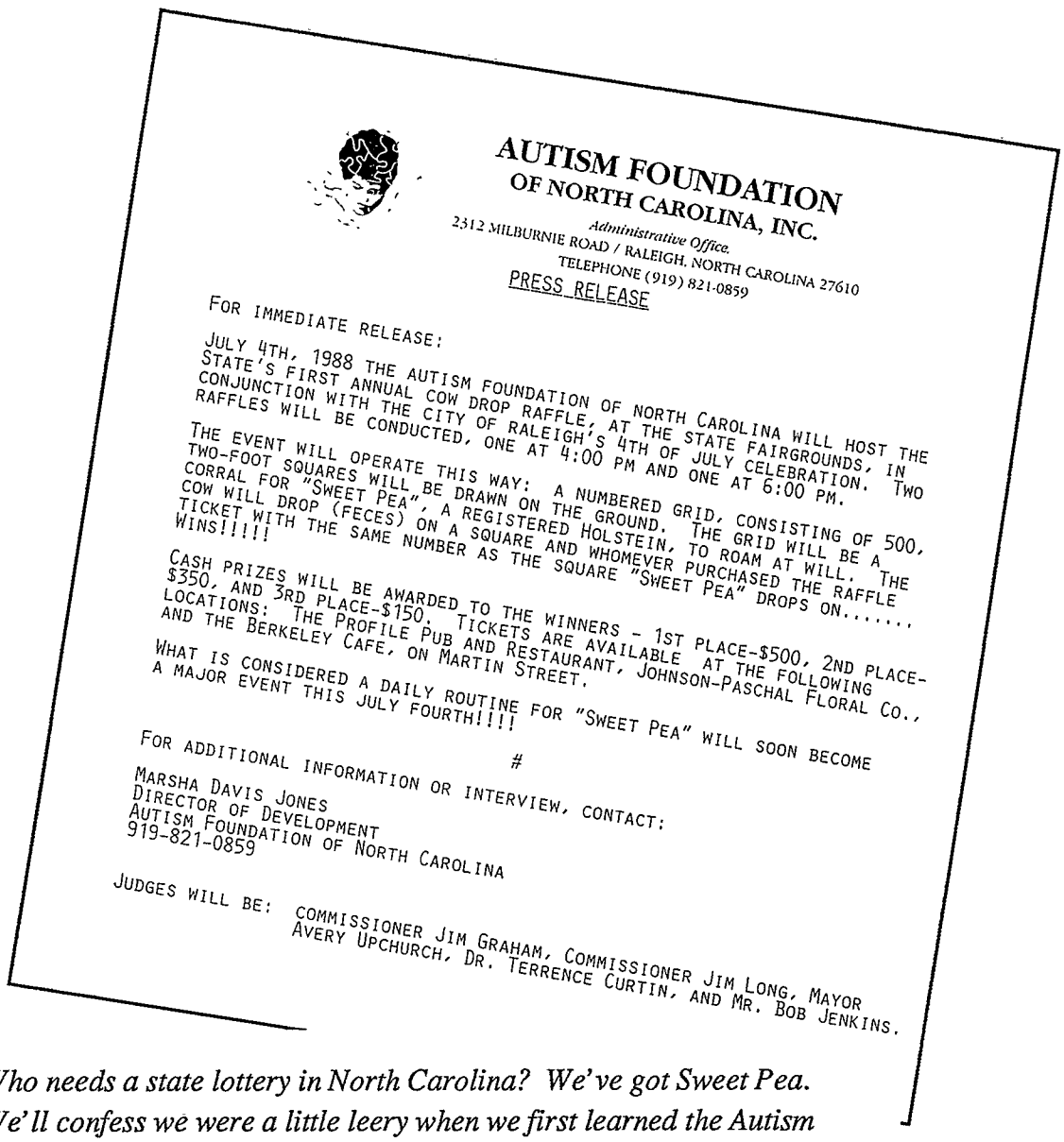
Comparing the Performance of For-Profit and Not-for-Profit Hospitals in North Carolina

The Center's latest book-length research report, this study examines these questions:

- Do for-profit hospitals charge more or less than non-profits?
- Do for-profits offer a broader or narrower range of services than not-for-profits?
- Do for-profits provide more or less health care for indigent patients?
- And do taxes paid by for-profits offset any deficiencies in indigent care?

Available in Fall 1988.
For information on ordering and price, call Sharon Moore at the Center (919) 832-2839.

MEMORABLE MEMO



AUTISM FOUNDATION
OF NORTH CAROLINA, INC.

Administrative Office.
2312 MILBURNIE ROAD / RALEIGH, NORTH CAROLINA 27610
TELEPHONE (919) 821-0859

PRESS RELEASE

FOR IMMEDIATE RELEASE:

JULY 4TH, 1988 THE AUTISM FOUNDATION OF NORTH CAROLINA WILL HOST THE STATE'S FIRST ANNUAL COW DROP RAFFLE, AT THE STATE FAIRGROUNDS, IN CONJUNCTION WITH THE CITY OF RALEIGH'S 4TH OF JULY CELEBRATION. TWO RAFFLES WILL BE CONDUCTED, ONE AT 4:00 PM AND ONE AT 6:00 PM.

THE EVENT WILL OPERATE THIS WAY: A NUMBERED GRID, CONSISTING OF 500, TWO-FOOT SQUARES WILL BE DRAWN ON THE GROUND. THE GRID WILL BE A CORRAL FOR "SWEET PEA", A REGISTERED HOLSTEIN, TO ROAM AT WILL. THE COW WILL DROP (FECES) ON A SQUARE AND WHOMEVER PURCHASED THE RAFFLE TICKET WITH THE SAME NUMBER AS THE SQUARE "SWEET PEA" DROPS ON..... WINS!!!!!

CASH PRIZES WILL BE AWARDED TO THE WINNERS - 1ST PLACE-$500, 2ND PLACE-$350, AND 3RD PLACE-$150. TICKETS ARE AVAILABLE AT THE FOLLOWING LOCATIONS: THE PROFILE PUB AND RESTAURANT, JOHNSON-PASCHAL FLORAL CO., AND THE BERKELEY CAFE, ON MARTIN STREET.

WHAT IS CONSIDERED A DAILY ROUTINE FOR "SWEET PEA" WILL SOON BECOME A MAJOR EVENT THIS JULY FOURTH!!!!

#

FOR ADDITIONAL INFORMATION OR INTERVIEW, CONTACT:

MARSHA DAVIS JONES
DIRECTOR OF DEVELOPMENT
AUTISM FOUNDATION OF NORTH CAROLINA
919-821-0859

JUDGES WILL BE: COMMISSIONER JIM GRAHAM, COMMISSIONER JIM LONG, MAYOR AVERY UPCHURCH, DR. TERRENCE CURTIN, AND MR. BOB JENKINS.

Who needs a state lottery in North Carolina? We've got Sweet Pea. We'll confess we were a little leery when we first learned the Autism Foundation planned to charge people for a chance at getting a postage stamp-sized piece of real estate fertilized by a Holstein. But who can argue with the sweet smell of success? Sweet Pea's performance really hit the spot on the Fourth of July. Now there's a movement to make her "daily routine" a regular event. So watch where you step, and should anybody dump a candidate for Memorable Memo on your desk, drop it in the mail to us. Anonymity guaranteed.

And in this corner ...

James G. Martin
Governor

Karen Hayes Rotterman
Director of Communications

State of North Carolina
Office of the Governor

Release: IMMEDIATE
Contact: Karen Hayes Rotterman, Tim Pittman
Release No:

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RESEARCH TRIANGLE TO HOST REGIONAL MEETING ON BOOSTING AMERICA'S HIGH-TECH COMPETITIVENESS

The Research Triangle Park has been chosen as one of four regional sites across the United States to host a one-day meeting cosponsored by the National Governors' Association to discuss ways state and federal government can boost America's technological competitiveness.

The gathering of key executives, state policy makers and university officials is scheduled to last from 9 a.m. to 4:30 p.m., April 24 at RTP's Microelectronics Center of North Carolina.

Based on the results of a recent national survey assessing our country's research and technological initiatives, the select panel will discuss policy options for industry, government and academia. The survey comprised government, business and university leaders from all 50 states.

"It is no accident that the Research Triangle Park was selected as one of the four regional sites," Governor Jim Martin said. "On the state level, this highly-successful facility is representative of the type of cooperation between private industry, government and the academic world that is needed on the national level to maintain America's status as a front-runner in new technology."

Speakers for the conference include Dr. Earl MacCormac, the governor's science advisor and executive director of the N.C. Board of Science and Technology; Ray Thornton, president of the University of Arkansas; and Larry Sumney, President of the Semiconductor Research Corporation, RTP.

The conference is cosponsored by the National Governors' Association, the National Science Foundation and The Conference Board - an independent research organization of private business executives. The three other regional meetings will be held April 16 in Bellevue, Washington; April 22 in Holmdel, New Jersey; and April 29 in Dearborn, Michigan.

-END-

You want high-tech in North Carolina? We got high-tech, all right, and here's just one sample. Note the quality of the high-tech printing here. Now, in the old days before computers, you had to settle for all the letters being on the same line. But now, thanks to advances in modern high-tech computer capability, you can put the letters on the line, below the line, above the line, or the combination. We prefer the combination, as does the Governor's Press Office. Seen any other samples of high-tech public policymaking lately? If you have, just log on and let's interface. Anonymity guaranteed.

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