

December 15, 1955

Mr. L. E. Wooten
L. E. Wooten and Company
306 South Dawson Street
Raleigh, North Carolina

Dear Mr. Wooten:

Your generous offer to assist us in improving the parking of vehicles around the Coliseum has been considered. All of us realize that every effort should be made to improve conditions within the limits of our ability.

Mr. W. E. Betts as Manager of the Coliseum is in charge of parking and supervises the attendants who would be involved in introducing new methods. I am requesting Mr. Betts to call you and make arrangements for discussing with you your proposals, and you may determine if it will be feasible in the short period of time between now and the Dixie Classic to introduce a new system of parking.

I am confident that we could improve conditions a great deal if funds were available for making physical changes and for hiring additional attendants. There are so many demands on the income of the Coliseum that we must consider every proposal for improving services according to the cost which will be involved. If you can propose a plan which will yield improvements without much increase in costs, you will be doing us a very great favor.

May I say also that if we do not get changes made in time for the Dixie Classic that we shall continue to hope that we may in the future have the benefit of your assistance in working out better ways of utilizing our limited parking facilities.

Sincerely yours,

Carey H. Bostian
Chancellor

CHB:H

cc: Mr. J. G. Vann
Mr. W. E. Betts
Mr. Roy Clogston
Dr. H. A. Fisher

L. E. WOOTEN AND COMPANY
CONSULTING ENGINEERS
RALEIGH, N. C.

December 12, 1955

Dr. C. H. Bostian, Chancellor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Bostian:

Having noted the great confusion in parking and traffic conditions at the college campus during basketball games, also having heard many complaints in regard to this situation, I am taking the liberty of offering without pay my services in making a study of these conditions, and offering a plan which I can assure will provide for the parking of many more cars and will facilitate cars getting away from the campus in less time, provided the proper authorities will furnish sufficient enforcement of the parking conditions and traffic regulations which I shall recommend.

For example, I am sure beyond question that the number of cars parked on the west side of the Coliseum can be increased from 25 to 40 per cent, and that under my proposal, there will be less confusion in the exit. Moreover, I have noticed on several occasions the numerous parking spaces which were bottled up and made inaccessible by virtue of lack of planning and enforcement. The condition which permits the holding of some fifty or more parking spaces adjacent to the Coliseum may be necessary for reasons which are unknown to me. This condition however, has raised some questions from people who have to park in the less desirable places.

As is well recognized, the patronage of State College basketball teams at our Coliseum has attracted national attention. It appears to me that local authorities should take great pride in this fact and should exert every effort to improve conditions to the greatest possible extent. One item not to be overlooked in my opinion, is the paying customer who makes possible these great events on our campus.

In order to learn the adverse features of patrons at our basketball games it might be helpful if some of the top college authorities would park their cars, incognito, in the outer fringes. The facts would be more clearly brought out if more such parking were done at one of the night games when there is a capacity crowd.

If the college wishes me to donate my time in this matter, and if they will furnish me with adequate maps, I shall try to offer a tentative plan to be used as an experiment during one of the afternoon games in the coming Dixie Classic.

Dr. C. H. Bostian

Page 2
December 12, 1955

This service is offered in the hopes of bettering the conditions at athletic contests at State College. Over a period of many years I have been a donor to State College, and of not too inconsequential proportions.

Very truly yours,

L. E. WOOTEN AND COMPANY

By *L. E. Wooten*
L. E. Wooten

LEW/ec

cc: Dr. Fisher
Roy Clogston

W

September 24, 1955

Mr. Louis H. Wilson, Secretary and Director of Information
National Plant Food Institute
1700 K Street, N. W.
Washington 6, D. C.

Dear Louis:

Several months ago much satisfaction and pride came to State College and to me personally when we learned that you had received the annual Reuben Brigham Award from the American Association of Agricultural College Editors. This was a deserved recognition of the contributions you have made for a number of years in developing excellent relations between the colleges and the associations with whom you have been working.

We like to feel that your training at State College and your experience as an Extension Editor provided you a good springboard for this career you have been making.

Mr. Coleman sent me a list of the staff of the newly organized National Plant Food Institute. We are glad to know that you have an important position on this staff and are confident that the National Plant Food Institute will make a great contribution to the future progress of agriculture.

Come to see us in Raleigh as often as you can.

Very cordially yours,

Carey H. Bostian
Chancellor

CHB:cw



NATIONAL PLANT FOOD INSTITUTE

1700 K. STREET N. W. • WASHINGTON 6, D. C.

DISTRICT 7-0225

September 26, 1955

Dr. Carey H. Bostian
Chancellor
North Carolina State College
State College Station
Raleigh, North Carolina

Dear Dr. Bostian:

You certainly are thoughtful to take time from your busy schedule to write me such an appreciated letter on my receiving the Reuben Brigham Award. I shall do everything possible to merit your continued confidence and good wishes.

In all honesty, I shall never be out of debt to my Alma Mater and, in particular, I am indebted to the late Frank H. Jeter, who started me on my career. He not only was a great man in agricultural journalism, but he was a wonderful friend, who viewed the shortcomings of youth with sympathetic understanding.

I shall look forward to visiting you on our next trip to the College and, in the interim, I want you to know that your leadership is appreciated and I shall value every opportunity to cooperate with you in every way possible.

Thanks again and best wishes for your continued success.

Sincerely yours,

Louis H. Wilson
Director of Information
and Secretary

LHW/ler

Box 3249
N.C. State

W

Chancellor C. H. Bostian
N.C. State
Raleigh, N.C.

Dear Sir:

I certainly do appreciate your letter very much.

I have broached the subject to the Admiral, and will continue to do so. However, he is a very busy man. I know he will be deeply interested. However, I feel something will have to come from State, the University, and from the state. Most of his activities are not generally well known because of the national security.

Having your permission, I want to take up the subject with Chancellor House and President Gray too.

Briefly, arctic and antarctic installations are coming to the fore more and more in war and peace, for many valid reasons. This poses special problems in all areas. This can bring, on long term basis, money and prestige to the state, University, and State, for necessary highly special work, mostly from federal government, I think. Think I can be of some help here, and deeply desire to.

The ethics of the medical profession are very stringent. But, it has been ~~briefly~~ repeatedly ruled by the A.M.A., that no challenge on ethics shall prevent a man from pursuing his valid and reasonable duty. This, for what it is worth.

I deeply appreciate your interest; and desiring to serve, will most certainly keep you posted.

I am-

Most respectfully yours-



Coleman Whitlock, M.D.
Nuclear Studies Group

P.S. Interesting squib on subject in life this week.

cc: Chancellor House for passage through channels.

9 April 55

North Carolina State College of Agriculture and Engineering
of the
University of North Carolina
Raleigh
April 6, 1955

W

OFFICE OF THE CHANCELLOR

Dr. Coleman M. Whitlock
201 Welch Dormitory
Box 3249
State College Station
Raleigh, North Carolina

Dear Dr. Whitlock:

Yesterday our Administrative Council considered the suggestion you made that State College send a proposal to Admiral Byrd for participating in his next expedition.

It was unanimously agreed that it is improper for us to make such a proposal, but that we would be pleased to consider a request from Admiral Byrd to be of assistance to him. It is not considered proper and ethical for colleges to solicit participation in such endeavors.

If you think that Admiral Byrd will give consideration to a proposal which you might send to him, we have no objections to your doing that.

There is no doubt but that participation by members of our staff would bring us much prestige.

Sincerely yours,

Carey H. Eostian
Chancellor

CHB:cw

cc: Mr. Gordon Gray
Chancellor Robert B. House

WACHOVIA BANK AND TRUST COMPANY
WINSTON-SALEM, NORTH CAROLINA

December 20, 1955

Dear Cary:

At this season of the year, we wish to express to you again our appreciation of your consent to become a member of the Raleigh Board of Managers. It gives us a great feeling of satisfaction and pleasure to have you associated with us.

In thinking of our plans for the New Year, we know that we can count on your enthusiastic and loyal assistance. It shall be the sincere desire and determined effort of each member of our staff to expand and improve our financial and trust services in the Raleigh area, and in this we shall need your help.

For you and yours we are wishing a most happy Christmas season and a New Year full of joy and prosperity.

Sincerely yours,



R. M. Hanes, President



R. G. Stockton, Chairman

Dr. Carey H. Bostian
1903 Hillsboro Street
Raleigh, North Carolina

WATAUGA CLUB

Regulations for the Election of Members

1. That the membership be limited to twenty, not including members on leave of absence.

2. That when a vacancy shall occur, at least three nominations shall be made to fill that vacancy.

3. That a standing membership committee of three be elected at the first meeting each January, to serve for one year, and that at the next meeting of the club such a committee be elected to serve until the first meeting in January, 1952, or until their successors shall have been elected.

4. That it shall be the duty of the membership committee to poll the members on nominations to fill vacancies.

5. That not fewer than fifteen affirmative votes shall be required for the final election of any member, with no negative votes.

MEMBERS OF WATAUGH CLUB

- Governor Luther H. Hodges (43611), State Capitol, Raleigh
- Mr. R. Mayne Albright, Attorney (24215), Insurance Building
- Dr. Carey H. Bostian, Chancellor, State College, (45211)
- Mr. Henry Brandis, Dean of the Law School, (71316), Chapel Hill
- Mr. T. E. Browne, R-1, (4101), Murfreesboro, N. C.
- Dr. Chas. F. Carroll (43611 - 7422), State Supt. Public Instruction,
Education Building, Raleigh
- Dr. Christopher Crittenden (43611 - 7305), Dept. of Archives and History
Box 1881, Raleigh
- Mr. Jonathan Daniels, Editor, (2-4411), News and Observer
- Judge E. B. Denny, (9786), Associate Justice, N. C. Supreme Court, Raleigh
- Dr. W. C. Davison, Dean, (9011) Medical School, Duke University, Durham
- Hon. Edwin Gill, State Treasurer, (43611 - 7274), State Capitol
- Dr. Calvin B. Hoover, Head, (75261), Department of Economics, Duke Univ.,
Durham (Home - 75261)
- Chancellor R. B. House, (6381), University of North Carolina, Chapel Hill
- Dr. Robert Lee Humber, (3202), Greenville
- Mr. R. L. McMillan, (9903), Attorney at Law, Raleigh
- Mr. Clarence Pos, (43477), The Progressive Farmer, Insurance Building
- Mr. Wm. T. Polk, (38611), Greensboro Daily News, Greensboro
- Dr. E. McNeill Poteat, (22324, 1801 Hillsboro St.), Pullen Memorial Church, Raleigh
- Mr. Gilbert T. Stephenson, Pendleton

State of North Carolina
Department of Archives and History
Raleigh

December 1, 1955

To the Members of the Watauga Club:

Due to a combination of circumstances, none of our members seems to be in a position conveniently to entertain the group on December 13. Therefore we will not have a meeting on that date.

The next meeting will be on Tuesday, January 10, when Mayne Albright will be our host. You may expect to hear from him later. Beginning at that time, we will meet regularly on the second and fourth Tuesday of each month.

For the convenience of each of you, a list of members is enclosed.

With very best wishes, I am

Yours sincerely,



Christopher Crittenden
President, Watauga Club

CC/ajk

Enclosure



State of North Carolina

Wildlife Resources Commission

RALEIGH, N. C.

August 18, 1955

E. D. MCGOUGAN, LUMBER BRIDGE
CHAIRMAN

G. E. BEAL, RED OAK
THURMAN BRIGGS, LEXINGTON
ROBERT M. CARR, WALLACE
JAMES A. CONNELLY, MORGANTON

CLYDE P. PATTON, RALEIGH
EXECUTIVE DIRECTOR

R. F. CROUSE, SPARTA
H. C. KENNETT, DURHAM
C. T. WILSON, BILTMORE
O. L. WOODHOUSE, GRANDY

Dr. Carey H. Bostian, Chancellor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Bostian:

Thank you very much for your letter of August 16, 1955.

If plans of the Steering Committee on Roanoke River Studies materialize to the point of proposing that certain phases of the study be conducted on a contractual basis with a college, the Wildlife Resources Commission would prefer that a North Carolina college, qualified to do the work, receive the contract.

We are requesting that North Carolina State College be given an opportunity to consider any proposal for a contract with a college that might be made in connection with this project.

Cordially and sincerely,

Clyde P. Patton
Executive Director

CFP:IC

CC: The Honorable E. D. McGougan
The Honorable H. C. Kennett
Dr. D. B. Anderson
Dr. F. S. Barkalow, Jr.
Mr. J. H. Cornell

August 16, 1955

Mr. Clyde F. Patton
North Carolina Wildlife Resources Commission
Raleigh, North Carolina

Dear Mr. Patton:

Recently a report of the meeting of the Steering Committee for Roanoke River Studies, held in Raleigh, July 7, 1955, has been brought to my attention. This report has been read with considerable interest.

It has been noted that some phases of the program will probably be carried out on a contractual basis with an educational institution. In fact, the report mentions an institution of a neighboring state as being qualified to carry out certain phases of proposed studies and as being interested in doing so.

North Carolina State College is both interested in and has responsibility for assisting in the development and conservation of the natural resources of the state. We believe that our laboratory facilities and qualified personnel make us competent for helping with this project.

Should the plans of the Steering Committee materialize to the point of proposing that phases be conducted on a contractual basis, we would like very much to be given the opportunity to consider the contract and to have our facilities and staff members fully considered by the Steering Committee.

Sincerely yours,

Carey H. Bostian
Chancellor

CHB:H

CC: Mr. E. D. McGowan
Mr. H. C. Kinnitt
Mr. J. H. Cornell
Dr. D. E. Anderson
Dr. F. S. Barkalow, Jr.

NORTH CAROLINA STATE COLLEGE
A UNIT OF THE
CONSOLIDATED UNIVERSITY OF NORTH CAROLINA
Raleigh

DIVISION OF
BIOLOGICAL SCIENCES

August 10, 1955


Chancellor C. H. Bostian
Holladay Hall
Campus

Dear Chancellor Bostian:

Dr. Barkalow has called my attention to the attached reports of the committees that have been drawing up plans for a survey of the Roanoke River. This is a project in which we have considerable interest, so it is disturbing to find that V.P.I. alone was mentioned as the educational institution qualified and interested in carrying out the biological studies being planned (See page 5). It may be that there are excellent reasons for wishing to have the work done at V.P.I. of which we have no knowledge. We do have the facilities for this kind of work here, and we would like to be considered before any final arrangements are concluded.

I have suggested to Dr. Barkalow that he prepare a draft of a letter that you might be willing to send to Mr. Patton expressing our interest in participating in the survey when final plans are drawn. The attached draft was written for this purpose. If you believe it appropriate, we would appreciate having a letter of this kind sent to Mr. Patton from your office.

Very truly yours,



Donald B. Anderson, Head
Division of Biological Sciences

DBA:ph

Dear Mr. Patton:

I have received a Report on the Meeting of the Steering Committee, Roanoke River Studies, which was held in Raleigh on July 7, 1955. I read this report with considerable interest and note that some phases of the program will probably be carried out on a contractual basis with an educational institution.

State College is both interested in and has a responsibility for assisting in the development and conservation of North Carolina's natural resources. Should the plans of the steering committee materialize to the extent of providing for contractual work on the bio-assay and fishery studies, we would like very much to be given the opportunity to consider a contract for studies in these areas.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

OFFICE OF REGIONAL DIRECTOR

PEACHTREE-SEVENTH BUILDING
ATLANTA 23, GEORGIA

ADDRESS ONLY THE REGIONAL DIRECTOR
FISH AND WILDLIFE SERVICE
AND REFER TO

REGION 4

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SOUTH CAROLINA
GEORGIA
FLORIDA
KENTUCKY
TENNESSEE
ALABAMA
MISSISSIPPI
ARKANSAS
LOUISIANA
VIRGINIA
MARYLAND

July 29, 1955

Dr. F. S. Barkalow, Jr.
North Carolina State College
Raleigh, North Carolina

Dear Dr. Barkalow:

Attached is a report on the meeting of the Steering Committee for Roanoke River Studies, held at Raleigh, July 7, 1955. An effort has been made to condense the account of the meeting, and to present only comments and recommendations which are of general interest. The Chairman thanks the Task Force chairmen who submitted copies of reports on their separate meetings; also, the assistance of Mrs. Grace Byrd in the preparation of notes on the July 7 meeting is gratefully acknowledged.

Copy of this consolidated report is being sent Congressman Bonner for his information.

It is hoped that those agencies concerned who have funds presently available, will initiate their programs promptly. Those agencies who yet must obtain funds for their part in the studies, should pursue the matter to the utmost so that this important program can proceed as contemplated.

Sincerely yours,

Willis King

Chairman

REPORT ON THE MEETING OF THE STEERING COMMITTEE, ROANOKE RIVER
STUDIES, HELD AT RALEIGH, NORTH CAROLINA, JULY 7, 1955

The meeting was held at the offices of the Wildlife Resources Commission with Dr. Willis King as chairman. A list of those present and the Agency represented is attached. The meeting was opened with the introduction of persons present for the first time, followed by a brief statement of objectives of the meeting. The chairman pointed out that there were two primary objectives:

1. The presentation of reports by the three task force groups, a discussion of these reports to be followed by a recommendation for action by the Steering Committee.
2. The recommendation of procedures and budgets to carry out the proposed studies.

Early in the meeting Mr. R. M. Hutcheson, attorney for the Virginia Electric and Power Company, read a letter addressed to the Regional Director, Fish and Wildlife Service, explaining that the Company wished its representatives to be considered as observers, that they preferred not to be considered as official members of the Committee since their Company had already made such studies on the Roanoke River as they deemed necessary for their own purposes and that the representatives were not empowered to accept further responsibilities in relation to any action which the Steering Committee might take. Mr. Hutcheson did pledge the

continued interest and cooperation wherever possible by VEPCO and urged that quick action be taken on VEPCO's application for a license to construct the proposed Gaston hydroelectric project.

During the morning sessions the Committee reports were read by the chairmen of the respective task force groups and a limited amount of discussion followed the reading of the reports. After noon, each Task Force met separately to complete their recommendations. Finally, the entire group reassembled to hear these recommendations and to take appropriate action. Copies of the reports, as subsequently amended and revised, are attached. All groups had held interim meetings, since the May 24 meeting, in order to have a well defined program for presentation.

TASK FORCE 1 - WATER QUALITY STUDIES

Task Force 1, under the chairmanship of Mr. E. C. Hubbard, Executive Secretary of the State Stream Sanitation Committee, reported that the group, which is concerned with water quality studies, had agreed on an outline which would be followed by the representatives of industry and the State agencies concerned with water quality problems. It is anticipated that the field work as outlined in Mr. Hubbard's report will be carried out without request for outside funds.

In the recommendations section of the above mentioned report, the first 4 items deal with the collection of data on temperatures, oxygen, mineral content and measurement of river flows. Items 5, 6 and 7 deal with a decision relative to the

submerged weir proposed by VEPCO for their Gaston project. Opinions from qualified experts are to be solicited in an effort to resolve the questions connected with the operation of the weir without resorting to the necessity for model studies which would be both expensive and time consuming.

Later in the day Task Force 1 supplemented its report by presenting recommendations for a schedule of minimum flow requirements proposed for the Roanoke River at Weldon. A copy of this schedule is attached. The schedule is to be considered as applying on an interim basis until such time as presently proposed studies have been carried out and recommendations can be made for setting forth flow requirements on a permanent basis. The Committee recommended that the proposed schedule be transmitted to the Governor of North Carolina to be forwarded under his signature to the Federal Power Commission for the consideration of that body. Mr. Hubbard read the letter of transmittal to the Governor, which he had prepared, also the letter to be signed by the Governor. After suggesting a few changes, the Committee voted approval of the schedule of flows and the general form of the letters as presented. All persons voted in the affirmative, except the representatives of VEPCO and the Corps of Engineers who wished to be recorded as abstaining.

TASK FORCE 2 - BIO-ASSAY STUDIES

This group is under the chairmanship of Mr. J. H. Cornell

of the North Carolina Wildlife Resources Commission. Mr. Cornell gave an informal report on the meeting of his group held in Raleigh the evening of June 27. He later submitted a written outline of his comments, a copy of which is attached. The Steering Committee recognized the complexities involved in setting up bio-assay studies and the close relationship which must be maintained with the analytical studies which are to be carried out under Task Force 1.

It was proposed that Daphnia could probably be used as a satisfactory test animal. Results obtained, using Daphnia, would have to be correlated with findings using striped bass, when the fish are available.

The problems connected with the bio-assay studies are numerous and were shown in part to be:

a. A knowledge of the pollutants as to composition, volume and pattern of flow. Apparently the most injurious substances are yet unidentified, and the same substances may not always be present in the same amounts. Furthermore, information is not yet available on the conditions which will exist when the Halifax Paper Company places its plant in full operation as anticipated by the end of the summer.

b. The small hatchery at Weldon is not physically suited for carrying out detailed scientific experiments on a year round basis. Some of the work must be taken to a properly equipped laboratory where needed supplies and equipment can be readily obtained.

This would favor the contracting of some phases of the research to a qualified scientific or educational institution. Virginia Polytechnic Institute was mentioned as being qualified and interested in carrying out studies of this nature. Dr. I. D. Wilson of Virginia Polytechnic Institute attended the meeting in order that he might learn the type of work called for and be in better position to consider a contract for the studies should this be offered to Virginia Polytechnic Institute.

c. Although there has been previous scientific work dealing with the techniques of bio-assay, it will be necessary to review these studies carefully to determine their applicability to the Roanoke problem. It is likely that known methods will require modification and some experimentation to develop the most satisfactory techniques.

d. A final problem exists in the translation of information gathered in the laboratory into recommendations for regulation of stream flows and the dilution of pollution. This will require continued coordination with the findings of Task Forces 1 and 3.

It was the feeling of the Committee that work on this phase of the problem should begin at the earliest possible time. Undoubtedly, methods will be altered as the work proceeds and as conditions may be found to vary. Experience in the project, however,

will be the only basis for altering the experimental phases of the study.

The question of financing this particular program was discussed at some length. A rough estimate of \$25,000 has been proposed for the first year with second and third year costs approximately \$20,000 per year. Funds are not assured from the cooperating agencies at this time. It was the sentiment of the group that the cost for financing bio-assay studies should be included with the funds requested for the fishery studies under Task Group 3. This position is supported by the fact that the conclusions to be reached are necessary in order to recommend a permanent schedule of water discharges needed to support the fishery.

TASK FORCE 3 - FISHERY STUDIES

This group, under the chairmanship of Mr. Eric Rodgers of the State Department of Conservation and Development, held a meeting at Morehead City on June 20, and prepared an outline of a recommended study. This study followed in general the plan presented at the preceding meeting of the Steering Committee, but indicated specific responsibility for the cooperating agencies.

Dr. William S. Fahy of the Institute of Fisheries Research, will represent the State in the fishery study. The proximity of the Institute at Morehead City to the Fish and Wildlife Service laboratory at Beaufort insures opportunity for cooperation and coordination

throughout the program. Dr. Fahy's expenses are handled through State appropriation.

Attached is a copy of Mr. Rodgers' report, a revised outline of the proposed fisheries studies and a budget as prepared by Mr. Gerald B. Talbot, Chief, Middle Atlantic Fishery Investigations for Service participation in the fishery study. The Service will request allocation of funds from such sources as seem appropriate.

In connection with the field studies of fishery resources in the Roanoke River, the Committee asked Dr. Fred Barkalow, Dr. B. B. Brandt and Dr. William W. Hassler of the North Carolina State Department of Zoology and Wildlife to outline studies which Dr. Brandt and Dr. Hassler are now engaged in on the Roanoke River and Albemarle Sound. It was pointed out that Dr. Brandt is employed as a consultant by the Council for Stream Improvement and is collecting information on the striped bass, its spawning, growth, migration and survival in the Roanoke River. He is also concerned with the availability of suitable food organisms and the relation of water quality to fish survival. Field studies were begun in April of this year and are planned to continue for several years.

The necessity for cooperation by this group with the members of Task Force 3 was pointed out and during the course of the day's discussions several points in question were resolved.

Dr. Harry W. Gehm of the National Council for Stream Improvement explained that full cooperation was desired by his Agency and that the information collected by Drs. Brandt and Hassler would be made available to others studying Roanoke River problems. Dr. Gehm stated that his office desired that only reasonably complete reports be released, in the belief that piecemeal data might be misleading; however, the Council's representatives are authorized to cooperate fully in dividing responsibilities or territory under the general fisheries studies, approved by the Steering Committee, as individual abilities, transportation and seasonal conditions may dictate.

PROPOSED FINANCING

In addition to suggestions for financing the various studies referred to above, suggestion was made by Mr. Hubbard that best results might be accomplished by consolidating funds for all studies into a single budget to be administered by the Steering Committee and expended by the coordinator. The advantages of such an arrangement were conceded but the technical difficulties which would arise in handling State and Federal funds under such an arrangement appeared insurmountable. Consequently, it was the concensus of the group that for the present at least, each cooperating agency would, of necessity, be responsible for its own budget and expenditures, with the coordinator functioning in a liaison and advisory capacity. The desirability of obtaining

special funds in a lump sum was pointed out so that requests for such funds might carry more weight and represent a unified demand.

The employment of Dr. Fred Fish as coordinator is highly desired by the Committee and efforts will be continued to obtain his assignment to this position.

PLANS FOR FUTURE MEETINGS

No date was set for the next meeting of the Steering Committee but it was decided to hold the next meeting shortly after field work gets under way, some time during the early autumn. At that time it will be important to review accomplishments and insure that coordination of the various activities is being accomplished. A meeting will be called by the chairman at a time which he considers appropriate. In the meantime the various task forces may hold such meetings as necessary to carry out their programs.

Submitted: July 29, 1955

By:

Willis King
Willis King, Chairman

STEERING COMMITTEE MEETING ROANOKE RIVER STUDIES

RALEIGH, N. C. - July 7, 1955

Willis King	U. S. Fish & Wildlife Service	Atlanta, Ga.
B. C. Snow	Dept. of Conservation & Development	Raleigh, N. C.
R. P. Silliman	Fish & Wildlife Service	Washington, D. C.
G. B. Talbot	Fish & Wildlife Service	Beaufort, N. C.
F. S. Barkalow, Jr.	N. C. State College	Raleigh, N. C.
J. H. Cornell	N. C. Wildlife Resources Commission	Raleigh, N. C.
Lewis A. Young	U. S. Public Health Service	Atlanta, Ga.
E. C. Hubbard	State Stream Sanitation Committee	Raleigh, N. C.
Eric W. Rodgers	Dept. of Conservation & Development	Raleigh, N. C.
William E. Fahy	U. N. C. Institute of Fisheries Research	Morehead City, N. C.
Harry W. Gehm	Technical Division, National Council for Stream Improvement	
B. B. Brandt	N. C. State College, National Council for Stream Improvement	Raleigh, N. C.
Herbert F. Berger	V. P. I., National Council for Stream Improvement	Blacksburg, Va.
William W. Hassler	N. C. State College, National Council for Stream Improvement	Raleigh, N. C.
I. D. Wilson	V. P. I.	Blacksburg, Va.
W. E. Long, Jr.	State Stream Sanitation Committee	Raleigh, N. C.
Frederick F. Fish	U. S. Public Health Service	Atlanta, Ga.
Thos. M. Riddick	Halifax Paper Company	Roanoke Rapids, N. C.
John J. Priest	Halifax Paper Company	Roanoke Rapids, N. C.
F. S. Henika	U. S. Fish & Wildlife Service	Atlanta, Ga.
H. J. Fine	Corps of Engineers	Norfolk, Va.
R. J. Miller	U. N. C. Institute of Fisheries Research	Morehead City, N. C.
R. M. Hutcheson	Virginia Electric & Power Company	Richmond, Va.
J. D. Ristorph	Virginia Electric & Power Company	Richmond, Va.

NOTES ON MEETING HELD BY TASK FORCE NO. 1 OF THE
STEERING COMMITTEE FOR FUTURE STUDIES ON THE ROANOKE RIVER

By

E. C. Hubbard, Executive Secretary
State Stream Sanitation Committee

Task Force #1 met on June 27, 1955, in the Conference Room of the North Carolina Wildlife Resources Commission. Mr. E. C. Hubbard, Executive Secretary of State Stream Sanitation Committee, presided. The following persons were present.

<u>NAME</u>	<u>ORGANIZATION</u>
E. C. Hubbard	State Stream Sanitation Committee
W. E. Long, Jr.	State Stream Sanitation Committee
W. E. Knight	State Stream Sanitation Committee
F. L. Brinkley	N. C. Pulp Company
H. F. Berger	National Council for Stream Improvement
Frederic F. Fish	U. S. Public Health Service
H. J. Fine	Corps of Engineers
J. H. Cornell	N. C. Wildlife Resources Commission
P. W. Richards	U. S. Public Health Service
Kirk Adams	Halifax Paper Company
Thos. M. Riddick	Consulting Engineer & Chemist - N. Y. City - for Halifax Paper Company
John J. Priest	Halifax Paper Company
L. L. Hedgepeth	Halifax Paper Company
R. M. Hutcheson	Virginia Electric & Power Company
J. D. Ristroph	Virginia Electric & Power Company
E. W. Fortune	Virginia Electric & Power Company
F. S. Henika	U. S. Fish and Wildlife Service

Mr. Hubbard opened the meeting with a statement concerning the present status of studies on the Roanoke River. He stated that a great deal of work had been done and that a study of existing data could serve as an indication of data needed to be collected by future studies. Mr. Hubbard, also, pointed out that there was sufficient data on file to permit classification of the waters of the Basin and that data collected by future studies would be of value in determining (1) pollution abatement needs, (2) needed changes in fish management, and (3) minimum flow requirements in the Lower Roanoke River.

The Chairman then asked Mr. W. E. Long, Jr., of State Stream Sanitation Committee to discuss the findings of the studies already completed. Maps of the Basin showing locations of sampling stations, description of sampling stations, tables of analytical results, and dissolved oxygen profiles, obtained during previous studies by State Stream Sanitation Committee, as well as, results of tests on water quality by the Division of Sanitary Engineering of the State Board of Health were discussed. Mr. Long presented evaluations of the data that had been collected, having used the (1) Thomas Method, (2) the Le Bosquet - Tsivoglou Method, (3) the Churchill Method.

After the group had discussed the findings of previous studies at some length, the Chairman presented a suggested outline of additional studies. The group decided on the following plan:

I. Plant studies to be conducted to determine the volume, physical and chemical character of the waste from the following sources of pollution:

- A. Halifax Paper Company
- B. Roanoke Rapids, Manchester Board and Paper Company, and Roanoke Mills Plant No. 1
- C. Weldon
- D. Williamston
- E. North Carolina Pulp Company
- F. Plymouth

The Halifax Paper Company and the North Carolina Pulp Company with the assistance of National Council for Stream Improvement agreed to do the study at their plants under the supervision of the coordinator of the study. The North Carolina State Stream Sanitation Committee with the help of the U. S. Public Health Service agreed to study the other sources of pollution in the above list.

II. Stream Studies to determine the river flow and the physical and chemical character of the river water to include:

- A. Physical tests
- B. Chemical tests
- C. Biochemical and Bacteriological tests
- D. Toxicity tests
- E. Dissolved Oxygen Profile of the River

It was agreed that this work should not begin until after conditions affecting the water quality of the river became stable. This phase of the study to be done by North Carolina State Stream Sanitation Committee with the assistance of the U. S. Public Health Service.

III. Dilution

Studies to be conducted at the Kerr and Roanoke Rapids Reservoirs to determine:

- A. Temperature Profile
- B. Dissolved Oxygen Profile

C. Discharged Pattern and Volume of Flow

D. Determination of Iron and Manganese Concentrations

It is possible that the above mentioned information has already been obtained at the Kerr Reservoir and may be obtainable from either VEPCO or the Corps of Engineers.

IV. Study and Interpretation of Data

V. Recommendations for Required Flow

During the discussion of what work could be done this summer, Mr. Adams suggested that the Chairman appoint a sub-committee to resolve all facets of work that could be done this summer. Mr. Hubbard appointed Mr. W. E. Long, Jr., Dr. F. F. Fish, Dr. F. S. Henika, and Mr. John Priest. This sub-committee met in the conference room of the North Carolina Wildlife Resources Committee on June 28, 1955, and submitted the following recommendations:

- (1) That pertinent data pertaining to temperature and dissolved oxygen profiles on Kerr Reservoir be obtained from either VEPCO or the Corps of Engineers, as well as any data on iron and manganese at various depths and various stations.
- (2) Perform temperature, dissolved oxygen, iron and manganese tests on samples taken from various depths and at various stations on the Roanoke Rapids Reservoir.
- (3) To make a run on the river in late August - Mid September below Roanoke Rapids to secure data for a dissolved oxygen profile.
- (4) To prepare and install river mile markers and staff gages between Roanoke Rapids and Palmyra.
- (5) To request U. S. Fish and Wildlife Service to get an opinion concerning the submerged weir as proposed by VEPCO for their Gaston Project from the Bureau of Standards, Washington.
- (6) To request the U. S. Public Health Service to get an opinion concerning the submerged weir as proposed by VEPCO for their Gaston Project from F. W. Kittrell, formerly with TVA, and now with U. S. Public Health Service, Cincinnati.
- (7) Conference established Wednesday, July 13, at Chattanooga with Mr. Churchill, Chief, Stream Pollution Control Section, TVA.

RECOMMENDED SCHEDULE OF MINIMUM FLOW REQUIREMENTS
IN ROANOKE RIVER AT WELDON, NORTH CAROLINA

The purpose of this schedule is to provide the recommendations of the "Steering Committee for Future Studies on the Roanoke River in North Carolina" pertaining to minimum flows in the Roanoke River for the protection of striped bass during their migration season and for the protection of all other downstream uses throughout the year. These recommendations are based on the best current knowledge available with respect to water requirements for the striped bass fishery, as well as for the other legitimate uses being made for the stream.

The schedule of recommended flows set forth below is intended to apply only to the period required to complete the additional cooperative studies now being planned and initiated, after which time it is understood that recommendations will be made for the establishment of flow requirements on a permanent basis. All recommendations indicating river stages refer to the gaging station located at U. S. Highway #301 Bridge at Weldon, North Carolina.

I. RECOMMENDATIONS PERTAINING TO RIVER FLOWS FOR THE BENEFIT OF THE STRIPED BASS SPAWNING POPULATION.

A. Daily Water levels reaching the 25 foot stage at Weldon during the period March 21 through March 25.

Since the purpose of this high water is to bring the fish up the river rather than to protect them on the spawning grounds, there is no apparent reason why peaking operations should be objectionable at this period. If flood waters of a similar magnitude and duration have been released in the normal course of disposing of excess rainfall during the previous 10 days, it will be unnecessary to follow this recommendation.

B. Following the high water requested in Recommendation A, a minimum of 13 feet and a maximum of 19 feet until May 16, except as modified by Recommendation C.

These dates include the time during which it is anticipated that the striped bass will be on their spawning grounds. It is believed that a 13 foot minimum will be sufficient to protect the adult fish.

C. Immediately following the arrival of sixty degree water temperatures at Weldon, and/or the spawning of fish as determined by the Wildlife Resources Commission, a minimum of 15 feet and a maximum of 19 feet for a period of two weeks.

Previous studies conducted at Weldon Hatchery, and the collection of striped bass fry at the mouth of the Roanoke River, combine to indicate that a minimum sustained flow of 15 feet is necessary to provide for successful natural reproduction of the species. Available hatchery records indicate that approximately 90 percent of the spawning will occur within this 2-week period.

- D. Except during the period in question, no other changes are recommended pertaining to the reproduction of the striped bass.

The above recommendations apply only to water releases during the striped bass migration period. During the remainder of the year, the following river flows, as measured at Roanoke Rapids gage, are recommended as the minimum necessary to protect the normal and legitimate water uses in the Roanoke River.

II. RECOMMENDED MINIMUM SCHEDULE OF FLOWS FOR ALL PERIODS, OTHER THAN DURING THE STRIPED BASS MIGRATION SEASON.

Minimum Rate of Flow

<u>Period</u>	<u>C. F. S. *</u>
January through April	1000
May	1250
June through September	2000
October	1600
November through December	1000

* Based on 90% D. O. Saturation at Roanoke Rapids.

III. WEEKEND FLOWS

Recommendations do not provide for any reductions in minimum flows during weekend periods. Facts established through recent studies clearly and definitely indicate little or no reduction in waste discharges to the river during weekend periods. The industries responsible for the major portion of the total waste load in the stream operate on a seven-day work schedule and the quantity of municipal pollution tributary to the river remains substantially unchanged during the weekend. Therefore, any reduction in flow during these periods would produce conditions tending toward seriously jeopardizing the normal uses of the stream. Such reductions do not appear either tenable or justified in the light of presently known facts.

TASK FORCE #2 REPORT

Mr. J. H. Cornell: We tried to pin down an outline for a procedure for the analysis of pollutants by bio-assays. This work will be supervised by the Coordinator. We cannot give a complete 3-year study program because we do not know what will be found the first year. The second and third year studies will depend on the first year's findings.

1. Task Force #2 will try to arrange with Halifax Paper Company for the construction of lagoons for the purpose of evaluating their wastes. These ponds will be used later in bio-assay studies.
2. The Coordinator will find out what the Cincinnati office of the U. S. Public Health Service is doing in the way of analysis of mill wastes - the most current information available - in order that we will not be duplicating the studies that are being made and expect to be made in the near future.
3. Development of bio-assay techniques. This includes the selection of test animals suitable to the problem and methods of handling.
4. Determination of an experimental fish hatchery technique as pertains to the striped bass eggs and fry.
5. An application of the determined bio-assay techniques to determine gross lethal limits of any identified pollutants and any variations in the quantities of those pollutants in the mill wastes.
6. To attempt to establish a difference, if any, between the wastes of the paper mills at Halifax and at Plymouth, as shown by the established bio-assay technique.

Anticipated costs for the first year are \$25,000. Second and third year costs probably will be in the vicinity of \$20,000 per year. There is some equipment at Weldon for this work.

NORTH CAROLINA STRIPED BASS STUDY

ANALYSIS BY TASK FORCE GROUP NO. 3

(Approved by the full committee on July 7, 1955)

Task Force Group No. 3 met at Morehead City on June 20 to plan its work according to the outline of duties prepared at the general meeting of the overall committee on the striped bass.

Present were:

Eric W. Rodgers, Assistant to the Director
Department of Conservation and Development
Raleigh, North Carolina

B. C. Snow, Chief Engineer
Division of Water Resources, Inlets and Coastal Waterways
Department of Conservation and Development
Raleigh, North Carolina

C. G. Holland, Fisheries Commissioner
Division of Commercial Fisheries
Department of Conservation and Development
Morehead City, North Carolina

W. A. Ellison Jr.
Morehead City, North Carolina

Charles H. Walburg
United States Fish and Wildlife Service
Beaufort, North Carolina

Donald F. LaPointe
United States Fish and Wildlife Service
Beaufort, North Carolina

G. B. Talbot
United States Fish and Wildlife Service
Beaufort, North Carolina

James E. Sykes
United States Fish and Wildlife Service
Beaufort, North Carolina

Dr. Austin B. Williams
Institute of Fisheries Research
Morehead City, North Carolina

Dr. William E. Fahy
Institute of Fisheries Research
Morehead City, North Carolina

J. H. Cornell
North Carolina Wildlife Resources Commission
Raleigh, North Carolina

The program for the work of this group was changed somewhat to provide for specific activities assigned to certain agencies, and the new outline of duties is attached. In accordance with the request that an estimate be made of the cost of the work, plus the manpower involved, each separate function was carefully examined.

Section A was assigned to Dr. William E. Fahy of the Institute of Fisheries Research. Dr. Fahy will use his present force and will conduct his work within his present budget, thus eliminating the need for either extra manpower or more money at this time. Dr. Fahy has been assigned by the Executive Committee of the Institute of Fisheries Research to the striped bass study and is expected to spend a maximum portion of his time on this work during the next year, or longer if necessary.

Sections B, C, D and E have been assigned to the United States Fish and Wildlife Service under the direction of G. B. Talbot of the Beaufort laboratory. This will require four to five men over a period of several months.

Section F has been assigned to the Institute of Fisheries Research and will be handled by the hydrographer of the Institute without added expense or personnel.

Section G, which will include coordination of the reports on Sections A through F, will be handled by Dr. Fahy who in turn will pass on his findings to Messrs. Rodgers and Snow to be coordinated with the findings of Task Forces No. 1 and No. 2.

The Department of Conservation and Development will not be called on for any additional funds but from time to time will be asked to make its vessels available for reconnaissance, and its personnel available for introductions to fishermen and to escort the Task Force workers to areas with which they are not

familiar. Commissioner Holland said that this work can be accomplished within the present budget and without any additional personnel.

Estimate of Cost:

A - No extra cost, no extra personnel.

B, C, D and E - Estimated cost, \$40,000 annually, starting in the fall of 1955, and work to continue for three years. Four to five men required on full time basis. Time to be spent on Sections B through E is as follows:

B - 20%
C - 50%
D - 20%
E - 10%

F - No added cost, no added personnel.

G - No added cost, no added personnel.

Respectfully submitted,

Eric W. Rodgers

Eric W. Rodgers, Chairman
Task Force No. 3
Acting for the Department of
Conservation and Development

NORTH CAROLINA STRIPED BASS STUDY
Task Force Group 3

Objective:

To evaluate the importance of the striped bass fishery in North Carolina waters, especially in the Albemarle Sound section, with particular reference to conservation of this species.

A. Examination of tributary waters to obtain information on those which may be serving as nursery areas. (Begin fall of 1955.)

1. Sample for presence.
2. Material for racial studies of North Carolina coastal waters.
3. Study of movement, food and growth.

B. Examination of tributary waters to obtain information on those which may be serving as spawning areas. (Begin spring of 1956.)

1. Sample for presence of eggs and larvae.
2. Distribution of eggs and larvae in relation to space and time.
3. Identification of striped bass larvae and larvae of associated species.

C. Population studies (Albemarle Sound tributaries).

1. Estimation of population sizes.
2. Catch and effort statistics
 - (a) Commercial
 - (b) Sport (including bow nets).
3. Mortality studies.
4. Migration
 - (a) Estuarine
 - (b) Oceanic
5. Determine sex ratio.

D. Growth studies.

1. Age determination (dominant year classes).
2. Rate of growth.
3. Age and size at maturity.

E. Fecundity

1. Production of viable eggs according to age groups.
2. Spawning of females in successive years.

F. Physical factors limiting production and distribution.

1. Temperature
2. Salinity
3. Turbidity

G. Coordinate findings with Task Force Groups 1 and 2.

BREAKDOWN OF BUDGET FOR STRIPED BASS STUDIES
UNITED STATES FISH AND WILDLIFE SERVICE

PERSONNEL

Project Leader, GS-9	\$5,440	
Fishery Research Biologists, GS-7 (2)	9,040	
Fishery Research Biologists, GS-5 (2)	7,330	
Biological Aids, Seasonal, GS-3 (2)	1,580	23,390

TRAVEL

5,700

EQUIPMENT

Panel trucks (2)	3,000	
Outboards (2)	500	
Outboard boats (2)	700	
Laboratory	500	
Nets	500	
Boat trailers (2)	260	
Miscellaneous	500	5,960

OPERATION OF EQUIPMENT

1 inboard boat	600	
2 vehicles	1,000	
3 outboards	250	1,850

TAGGING OPERATIONS

Purchase of fish for tagging	2,000	
Tags and pins	200	
Rewards	400	2,600

MISCELLANEOUS SUPPLIES

	500	500
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Annual Budget		40,000
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Second year		37,500
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Third year		37,500
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