Albemarle Citizens' Advisory Committee
College of the Albemarle
Elizabeth City, NC
7:00 pm

Minutes

Attendance - See Attachment A.

Chairman Brown called the meeting to order at 7:05 pm and welcomed those present. He asked that the six new members of the A-CAC introduce themselves. They are as follows: Clyde Hughes, Jeanne Meiggs, Melvin Daniels, Sheila Smith, Tom Holland and Phil Hinton. Chairman Brown called for approval of the minutes from the previous meeting (April 26, 1990).A motion to accept the minutes as written was made by Capt. Al Howard and seconded by Dr. Polk Williams. Motion carried.

Program Update - Joan Giordano presented a report on the program status. See Attachments B and C. NOTE: The replacement for Mr. DeHihns is Ray Cunningham from EPA IV.

Public Participation Update - Joan Giordano presented her report. See Attachment D. Mrs. Giordano distributed an updated publications list. See Attachment E.

Introduction of Joe Stutts - Chairman Brown introduced Joe Stutts, A-CAC member and Union Camp representative. Mr. Stutts gave a presentation on Union Camp's Ozone Bleaching Process.

Mr. Stutts explained that the paper making process begins with wood that is chipped and cooked. The resulting fibers are brown and must be bleached. He stated that there are many ways to bleach the fibers, the most common method being the use of a chlorine bleaching system. There are approximately 300 bleach lines in the bleach paper industry in the U.S. today, of these there are 16 lines that use oxygen in the bleaching process. In 1972 Union Camp started looking closely at the way they were bleaching paper and how they could do it better. They continued with the chlorine bleach line but also established something called counter current washing. This process enabled them to use the same water over and over, saving about 1.5 million gallons of water a day. At the same time Union Camp started looking for better methods of bleaching paper. In 1981 they found a better method and built the first, first-stage oxygen bleach line in the U.S. This saved another 1.5 million gallons of water. One of the problems in developing this system was the instability of oxygen. Union Camp developed a system of stabilizing O3 in a reactor. Previous industry attempts at ozone bleaching resulted in fiber mush which is unsuitable for paper making. Union Camp was successful in developing an

ozone bleaching process that resulted in fiber stable enough to make paper. They have operated a pilot plant for 3 years using this system. This process virtually eliminates the chlorinated organics; chloroform, dioxin and a number of others. It also reduced BOD (Biological Oxygen Demand) in effluent over the old chlorine system by well over one half, reduced the amount of water used by 70% and reduced color by 90%. The resulting water is more the color of tap water than that usually seen in the paper making process. Union Camp is going to put in the first operational system, a 1000 tons per day unit, at Franklin at a cost of 158 million dollars. They feel that this will be a tremendous environmental advantage. Because the ozone itself can be dangerous, the ozone used in the process is generated on site, goes into the reactor and is completely used during the bleaching process. If anything happens in the system it closes itself down and switches over to O2.

Union Camp has reduced their water consumption by 25% since 1970.

Discussion ensued.

Introduction of Harry Dalton - Chairman Brown introduced Harry Dalton, Nutrient Management Specialist with the Virginia Division of Soil and Water Conservation. Mr. Dalton presented an update on the Early Demonstration Projects in Virginia.

Mr. Dalton expressed his appreciation to the A/P Study for the opportunity given by the Chowan Demonstration Project. He said the project blends well with their nutrient management program and also works well with other cooperating agencies such as the Soil Conservation Service, the Extension Service and Soil and Water Conservation Districts.

Mr. Dalton then gave some background information on the Chowan Demonstration Project. In June 1989 all of the agencies involved met and discussed the project proposal and laid the foundation. They involved two water conservation districts in Eastern Virginia and six counties along the Black Water, Nottoway and Meherrin Rivers which drain into the Chowan River. This watershed has many swine operations along it, some with confinement facilities such as storage pits over slatted floors, flush-type floors with lagoons and some cargile-type floors with lagoons. Many of these facilities were near maximum capacity and some had no means of pumping except through custom operators and there were not many of those around. In most cases the objective was disposal of waste and not utilization of nutrients.

Mr. Dalton's group met with other involved agencies, developed a list of candidates and chose the best ones for

meeting their goal of six new facilities, one in each county. They used the same process in selecting 25 sites for pump downs. The candidates were contacted and each signed a contract for a nutrient management plan. The Soil Conservation Service agreed to design these new facilities. The objective was to improve water quality on the watershed and to provide demonstration plots (at least one for each of the six counties) for the application and utilization of animal manure to croplands and forages.

Mr. Dalton then proceeded to give a brief project update. They have five candidates for the new facilities, two of these are complete. One of the two is a lagoon with 750 finish hogs, the other is a pit system, farrow to finish, with a total confinement (these were all on open lots to begin with). Another of these new facilities which is under construction, is a pit with slatted floors. Two more sites are waiting permits. Of the original candidates six cancelled due to farm status change, inadequate sites, economics or titanium mining. They looked at 11 candidates before finally developing the last five. Of the five, three are storage pits and two are lagoons. All have nutrient management plans and should be completed by September 30th. The cost share at a 75% rate is estimated to be $65,000. Concerning the pump downs they have 20 cooperators, 13 complete, 3 partly complete, 2 waiting for a custom pumper and 2 that are ready to start. Of the original candidates one cancelled due to equipment breakdown. Eighteen of the twenty have one or more lagoons while two of them have pits. All of these have manure samples taken and nutrient management plans. All of the pump downs should be completed in the very near future. The effluent is primarily being applied to fescue for stockpiling. Manure nutrients were also applied to corn, grain sorghum, cotton, soybeans, peanuts, pasture and hay. The lagoons are generally pumped at the minimum operating level of 3-4 feet. The cost share rate of $2.00 per 1000 gallons for the lagoons and $4.00 per 1000 gallons for pits with a honey wagon is estimated to equal approximately $24,000. The funds committed to date are $89,188 out of an allocation of $90,000. They hope to apply the uncommitted funds to one of the new facilities or gain one more pump down. They have a goal to establish six plots to compare normal fertilizer with manure applications. Presently they have 13 plots established applying nutrients from pits and lagoons, at various rates, by various application equipment, to various crops and schedules. One of these is a solid set irrigation system for intensive management rotational grazing on Tipton 44 bermuda grass.

Discussion ensued.

Introduction of Neil Armingeon - Joan Giordano introduced Neil Armingeon of the N.C. Coastal Federation who gave an update on the CAC recommendations from the workshops held in

May and June. See Attachment F. The comments made at this meeting will be incorporated into a revised version for the Roundtable Meeting being held in Greenville on August 29th. It was recommended that an appendix be added to the document showing all the recommendations and their rankings before any changes or cuts were made.

Election of CAC Officers - A motion was made by Capt. Al Howard and seconded by Yates Barber to continue with the existing A-CAC Chairs. The motion passed by acclamation.

Questions/Answers/Public Comment - Capt. Al Howard stated that he does not want to see the CCMP become another book on the library shelf and to ensure this does not happen he feels there must be a strong oversight committee which is not beholding to any political organization or state or federal agency or even the local governments. Capt. Howard then introduced a resolution addressing this matter. See Attachment G. A motion was made by Bill Piland and seconded by Yates Barber to accept this resolution with editorial corrections to be provided by Joan Giordano. Motion carried. A second motion was made by Joe Wright and seconded by Bill Piland to present this resolution to the P-CAC for endorsement. Motion carried.

Capt. Al Howard then directed the CACs' attention to an existing problem with the nitrogen and phosphorous readings in the Citizens' Monitoring Program. The kits being used are not giving definitive readings therefore there is a need for more sensitive kits. One of these new kits could be placed in each area and the volunteers could bring their samples to these areas. This will be taken up with the new coordinator.

Patty Piland commented on the need to suggest avenues for funding when the Legislative Liaison Committee discusses goals with the Legislature.

Mrs. Piland also expressed concern about the change in administrators for the Citizens' Monitoring Program. Chairman Brown suggested that Mrs. Piland contact David McNaught of the Pamlico Tar River Foundation if she had questions as to why PTRF was no longer administering this grant.

There being no further business the meeting was adjourned at 10:15 pm.

The next meeting will be held on October 30, 1990 at a time and place to be arranged.

Albemarle Citizens' Advisory Committee
College of the Albemarle
Small Business Center
Elizabeth City, NC

7:00 pm
August 7, 1990

AGENDA

Welcome	Chairman Brown
Consideration of Minutes	
Program Update	
Public Participation Update	Joan Giordano
Ozone Bleaching Process at Union Camp	Joe Stutts
Early Demonstration Projects - Virginia	Harry O. Dalton Nutrient Management Specialist - Va. Div. of Soil & Water Conservation
CAC Recommendations from Workshops	Neil Armingeon
Election of CAC Officers	
Public Comment/Questions	
Adjourn	

Attachment A

Attendance A-CAC 8-7-90

Jean Gaudiano	Staff
Brewster Brown	A-CAC
Alfred W Hoard	A-CAC
Carolyn Hoyt	A-CAC
Polk Williams	"
Yates Barber	A-CAC
Harry Hall	[illegible]
CARLTON A. DAVENPORT, JR	VISITOR
J A Wright	A-CAC
Sheila Smith	A-CAC
Richie Daniels	A-CAC
JEANNE MEIGGS	A-CAC
CAREY M. COPELAND	PEANUT SWCD
Clyde Hughey	A-CAC
Joe Southern	Daily Advance
Joe Stokes	A-CAC
Phil Winters	A-CAC
Shelby Manning	A-CAC
Tom Burns	A-CAC
Tom Holland	A-CAC
Phil McMullan	A-CAC
JOHN M. CARLOCK	HAMPTON ROADS PDC
Neil A. Armington	N.C Coastal Federation
Bill Poland	A-CAC
Patricia Ellen	Visitor

Attachment B

PROGRAM DIRECTOR'S/PROJECT OFFICER'S REPORT

AUGUST 3, 1990

1) Priority Action Plan Demonstration Projects

a) A new project has been selected and approved for funding this year. EPA-OMEP will provide supplemental funds for a marsh grass protection shoreline erosion control demonstration project, proposed by Spencer Rogers, UNC Sea Grant Program. Five sites are planned for the two-year project.

b) The Winslow farm was visited by this year's press tour and by the Policy Committee. Solid set applicators for effluent from these swine waste lagoons have been installed as part of the Merchant's Millpond (Upper Bennett's Creek) project.

c) Construction has not begun on the Greenville stormwater control facility due to delays in securing the site by the city.

2) Geographic Information Projects

a) CGIA's presentation to the Policy Committee in June resulted in a request to make a similar presentation in Carteret County. The analyses are part of Walter Clark's project to develop a water use plan component for this county's comprehensive land use planning.

b) Bob Holman is volunteering time to oversee progress on the CGIA/NCSU land use and land cover classification project funded by the A/P Study. The Raleigh and Currituck Sound areas are the first to undergo comparison of the 1972 and 1988 remotely sensed imagery. These areas are expected to be completed soon.

3) FY 90 Work Plan Revisions

a) New action plan demonstration project funding resulted in revision of the Work Plan, which was sent to EPA-Washington. EPA-OMEP provided 100% funding.

b) The Citizens' Monitoring Program will be managed by ECU beginning this fall. This also is a revision to the Work Plan.

c) Funding packages for cooperative agreements to carry out the Work Plan for FY 90 were provided to the EPA Region IV Grants Administration Unit by August 1. Awards are anticipated from August 15 through September 15.

4) Implementation Financing

a) EPA has contractor support to help the A/P Study initiate planning for financing action plans. A guidebook is being distributed to all committees and a seminar will be scheduled soon.

5) Environmental Goals

a) In accordance with National Estuary Program guidelines, environmental goals have been drafted for each identified environmental concern. All committees should review these goals which will become components of the CCMP when they are approved.

6) Action Plans

The CACs, with assistance from the N.C. Coastal Federation, are nearing completion of a final proposed list of action items for inclusion in the CCMP. A presentation is planned for the August 29 Roundtable Meeting.

7) Personnel Actions

a) A resolution by the Policy Committee recognizing Dr. Holman's two-year period of excellent service has been drafted for Committee action.

b) Another loss to the A/P Study has been announced in Atlanta. Mr. Lee DeHihns will be leaving the EPA to join an Atlanta law firm, Alston and Bird. A replacement has not been named.

8) Reports

a) Updated Publications List Available

Attachment C

DRAFT

ENVIRONMENTAL QUALITY GOALS
FOR
THE ALBEMARLE - PAMLICO ESTUARINE STUDY

PRIORITY CONCERN: Declines in Fisheries Productivity

GOALS: Ensure adequate quantity and quality of primary and secondary nursery areas to support increasing fisheries harvest demand.

Maintain harvests within sustainable yields.

Increase the catches per unit effort for target species by commercial and recreational fisherman.

Restoration of Roanoke River striped bass stocks to levels of reproductive success and juvenile abundance recorded during the 1960 through 1974 time period.

PRIORITY CONCERN: Health of Aquatic Resources

GOALS: Determine cause(s) of ulcerative mycosis in finfish and shell disease in blue crabs; reduce prevalence and incidence of these diseases.

Eliminate occurrence of pollutants present in toxic concentrations within the water and sediments.

Maintain water quality standards in all areas important to the survival of estuarine dependent fish species.

PRIORITY CONCERN: Eutrophication

GOALS: Achieve nutrient reduction goals prescribed in management strategies for tributary drainage basins designated as Nutrient Sensitive Waters (NSW)

Adhere to anti-degradation requirements of the Clean Water Act for nutrients within all tributary drainage basins not presently subject to NSW management stategies.

PRIORITY CONCERN: Impairment of Nursery Area Function

GOALS: Maintain optimal water quality conditions within areas functioning as estuarine nursery areas.

Maintain structural integrity of fringe wetlands for optimum function in the estuarine food web.

DRAFT

PRIORITY CONCERN: Anoxia - Related Fish Kills

GOALS: Maintain water quality standards in all areas shown to experience high incidence of fish kills.

Achieve measurable reductions in the incidence and severity of fish kills.

PRIORITY CONCERN: Habitat Loss

GOALS: Halt losses of special fisheries habitat areas which are necessary for the reproduction and rearing of commercially and recreationally important species.

Limit losses of unique and sensitive barrier island wetlands and terrestrial habitats.

Maintain areal status of all wetland types.

PRIORITY CONCERN: Closure of Shellfish Waters

GOALS: Restoration of all shellfishing areas to "open" status.

Restoration or maintenance of acceptable pathogen levels in potentially viable shellfishing areas.

PRIORITY CONCERN: Changes in Distribution Patterns of Benthic Organisms

GOALS: Establishment of additional optimal oyster substrate/habitat to maintain or surpass recent harvest levels during 1980 through 1988.

Maintain water quality necessary for productive shellfishing uses in currently active areas and in areas identified for potential development of shellfishing.

Maintain water quality necessary for survival and growth of brackish water submerged aquatic vegetation where they exist and where new growth may occur.

Attachment D

Public Involvement Coordinator's Report
August 1990

1. Citizens' Advisory Committees (CACs)
   - Continue to meet quarterly
   - Meeting notices sent to public officials, interested citizens and newspapers in meeting area
   - Vacancies exist: P-CAC (7)
   - Committee members continue to share APES information with community, civic and educational organizations

2. Exhibits
   - State Fair Exhibit (Nursery Area Model) was used at:
     * Environmental Awareness Field Days sponsored by the Assoc. of Soil & Water Conservation Districts - Northampton, Gates, Camden and Martin Counties - (400 students) on April 24, 25 & 26
     * W.H. Robinson (700 students) & South Greenville School (520 students) in Greenville - 5/11 & 5/18
   - Exhibits are available for use in study area at any time

3. Outreach
   - Educational Presentations:
     * Chowan County High School - May 18
     * W.H. Robinson School - Pitt Co. - May 11
     * South Greenville School - Pitt Co. - May 18
     * Gatesville Women's Group - May 1
     * Washington Co. Middle School - Roper - May 10
     * Riverside Readers Book Club - Washington - May 3
     * Snug Harbor Ext. Group - May 11
     * Arrowhead Beach 4-H Group - May 19
     * Weeksville Middle School - Pasquotank Co. - May 9
     * Edgecombe-Tar River Assoc. - Tarboro - May 9
     * Chocowinity Sr. Citizens - May 8
     * Eastern Elementary - Washington - May 10
     * Belvoir Elementary - Pitt County - May 8
     * Pine Knoll Shores Aquarium - June 11, July 27 & August 17
     * Manteo Aquarium - June 27, July 20 & August 13
     * First Methodist Church Youth Group - July 31
     * Fairfield Harbor - August 9

   - Local Government Liaison
     * Belhaven Town Council
     * Jones County Commissioners - May 21
     * Beaufort Town Council - July 9
     * Swansboro Town Council - July 12
     * Carteret Co. Commissioners - August 6
     * Bayboro Town Council - August 7
     * Oriental Town Council - August 7

4. Projects
   - Print
     * Poster series/bumper stickers - 4800 of 5000 distributed
     * Calendar - 4900 of 5000 distributed
     * "Guide to Estuaries" - 500 distributed - Reprints available ($1.00 each)
     * "Where the Rivers Meet the Sea" - 600 distributed to schools in APES area; additional 900 copies available ($3.00 each)
     * Status & Trends (public version) - being revised to include conclusions

   - Electronic
     * Video PSAs - being utilized on WRAL-TV
     * Video/slide show - video is being shortened to 20 minutes for use at meetings requiring an abbreviated program
     * Radio Talk Show - 3rd (Waste Treatment) of 6 scripts completed and being approved; will air in August - Subsequent topics include Human Environment, Water Quality, and Public Participation

   - Public Meetings
     * Workshops on Water Quality - done by NCSU Ag. Ext. March 6,7,14 & 15 - Report on proceedings late July early August
     * Forum on Management Needs for Protecting Estuarine resources in A/P System - draft write-up on proceedings by end of August
     * S.E. Va. Planning Commission (Now Hampton Roads Planning District Commission) has completed the HRPCD-APES Bibliography satisfying one of the tasks outlined in their proposal
     * Assisting CACs with Estuarine Management Recommendations (NCCF) - Final Workshop held in Williamston June 5
     * Press Tour (NCCF) - June 6-8 (in Albemarle region) was a well planned effort but sparsely attended

   All 3rd cycle projects are completed or nearing completion.

5. Other Meetings & Events
   - Status & Trends Public Meetings (6) across state rescheduled due to revision of S & T Document (Public Version) will probably occur in late fall
   - State Fair - Oct 12-21, 1990 - Dept. theme is Waste Management and Recycling - Planning continues

6. Newsletter
   - 3rd quarter edition due August-September
   - Mailing list is constantly updated - 17,200+
   - Responses are very favorable

7. Inquiries to Program
   - Receive almost daily response to newsletter, T.V. and exhibits from educators, press, students and business
   - Inquiry log is kept, average response time is 2-3 days
   - Requests for publications are very popular
   - Where Rivers Meet the Sea & A Guide to Estuaries have been reprinted and are now available at a cost of $3.00 and $1.00 respectively

Attachment E

ALBEMARLE-PAMLICO ESTUARINE PUBLICATIONS LIST

rev. 8-90

(I) Information Acquisition Documents
(P) Public Participation/Program Documents

No.	Abbreviated Title	Author/Editor	Status
86-01(I)	Existing Management Programs	Brower (UNC)	Available
87-01(P)	Source Document	Rader et al. A/P Study	Available
87-02(P)	Workplan I	Rader et al. A/P Study	Available
87-03(I)	Proceedings: Modeling Workshop	Stewart/Duffy (WRRI/SCI)	OUT OF PRINT
87-04(I)	Proceedings: Remote Sensing Workshop	Stewart (WRRI)	OUT OF PRINT
87-05(I)	Proceedings: Fish Disease Workshop	Stewart (WRRI)	OUT OF PRINT
87-06(P)	Citizens' Monitoring Pilot	Lekson (PTRF)	Available
88-01/02(P)	Baseline Monitoring Network	Rader et al. (A/P Study)	Available
88-03(P)	Citizen's Guidebook	Kennedy (NCCF)	OUT OF PRINT
88-04(P)	Status Report: March 1988	Rader (A/P Study)	OUT OF PRINT
88-05(P)*	Beaufort County Magazine	Rader (A/P Study)	Available
88-06(I)	Water Quality/Hydrology Bibliography	Bales (USGS)	OUT OF PRINT
88-07(I)	Turtle Excluder Device	Pearce/Street (Mariners' Marine/DMF)	Available

No.	Abbreviated Title	Author/Editor	Status
88-08(P)	Project Abstracts for the Period 1987-89	Holman (A/P Study)	Available
88-09(I)	Red Tide Persistence	Tyler (Versar)	Available
88-10(I)	Submerged Aquatic Vegetation (Eastern)	Ferguson (NOAA)	OUT OF PRINT
88-11(P)	Can Albemarle and Pamlico Be Saved	Taylor (Wildlife of NC)	Available
88-12(I)	Obstructions to Anadromous Fish Migration	Collier (USF&WS)	Available
88-13(I)	Value of Recreational Fishing A/P Estuaries	K. Smith (NCSU)	Available
88-14(I)	Analysis of Fringe Wetlands in A/P Sounds	Brinson (ECU)	OUT OF PRINT
89-01(P)	Progress Report for 1989	Holman (A/P Study)	Available
89-02(I)	Fish Stock Assessment	Phalen (DMF)	Available
89-03(I)	Baseline Demographis Trends	Tschetter (ECU)	OUT OF PRINT
89-04(P)	Public Involvement Plan	Giordano (A/P Study)	Available
89-05(I)	Scoping of Water-Column and Bottom Sediments	Wells (UNC)	Available
89-06(I)	Heavy Metal/Mud Pollutants in Pamlico River Estuary	Riggs (ECU)	Available
89-07(P)	State and Federal Interrelated Programs to the A/P Study	Holman, et al. (A/P Study)	Available
89-08(P)	Project Abstracts for the Period 1989-1990	Holman, et al. (A/P Study)	OUT OF PRINT
89-09(I)	Evaluation of Nursery Area Date	Noble (DMF)	Final Stage

No.	Abbreviated Title	Author/Editor	Status
89-10(I)	Submerged Aquatic Vegetation	Davis (ECU)	Available
89-11(I)	Water Quality Trends	Harned (USGS)	Final Stage
89-12(P)	The State of the Estuary Booklet	Okun (UNC)	Available $3.00
89-13A(I)	Albemarle-Pamlico Estuarine System: Preliminary Technical Analysis of the Status and Trends (Technical Document)	Copeland, et al. (Sea Grant)	Available (limited number)
89-13B(I)	Albemarle-Pamlico Estuarine System Preliminary Technical Analysis of the Status and Trends (Public Document)	Copeland et al. (Sea Grant)	Being Revised
00-00(P)	A Guide to Estuaries	Gale (PTRF)	Available $1/multi-copies
90-01	Inventory of Natural Areas	Roe	Available
90-02(I)	Evaluation of Environmental Managment and Resource Protection Programs in the A/P Region	Nichols (RTI)	Available
90-03(I)	Abundance and Viability of Striped Bass Eggs Spawned in the Roanoke River, NC in 1988	Rulifson (ECU)	Being Bound
90-04(P)	Coastal Satellite Scene	National Geographic KRS	Available ($10/copy)
90-05(P)	Progress Report for 1990	Holman (A/P Study)	Available
90-06(I)	Data Requirements Document	Siderelis	Available
90-07(I)	Heavy Metals - Neuse River	Riggs	Draft Due

No.	Abbreviated Title	Author/Editor	Status
90-08(I)	Oyster Success in Pamlico	Sutherland	Draft Stage
90-09(I)	Effects of Water Mgmt. and Land Use Practices on Hydrology and W.Q. in the A/P Region	Skaggs (NCSU)	Draft Stage
90-10(I)	A Pilot Study for Managing Multiple Use in the State's Public Trust Waters	Clark UNC Sea Grant	Draft Stage

Attachment F

July 27, 1990

TO: ALBEMARLE-PAMLICO CAC MEMBERS

FROM: NEIL A. ARMINGEON

SUBJECT: CAC RECOMMENDATION DOCUMENT

Enclosed is the draft of your document entitled "A Blueprint for Action". Your task is to review the draft and make comments in one of two ways. We will discuss the paper during the upcoming CAC meetings (ACAC August 7, in Elizabeth City; PCAC August 9, Manteo). If you are unable to attend the meeting, mail me your comments and I'll share them with your fellow members.

When your reviewing the document keep a few things in mind.

- **ORGANIZATION**--Is it logically organized, easy to follow, etc.?
- **CONTENT**--Does it include the points you discussed at the workshop and the follow-up meetings? Do some of the recommendations need clarifying/reworking?
- **TONE/STYLE**--Does the tone or style of the document convey your willingness to participate in the CCMP process.

Don't let your comments be limited to these topics. It's your document and should convey your ideas. There are 55 CACs, however, and each person has his or her own style. It's important to reach a consensus, but please, let's not spend too much time debating each word. I'm not trying to limit discussion, but the document must be completed by the end of August to allow for further review by the Publications Committee.

Good luck, and I'll see you in either Elizabeth City or Manteo.

A BLUEPRINT FOR ACTION

Resource Management Recommendations for the

Albemarle-Pamlico Estuarine Study

Draft

Not for Reprint

Developed by members of the

Albemarle Citizens Advisory Committee

Pamlico Citizens Advisory Committee

Edited by:
Neil A. Armingeon
North Carolina Coastal Federation

A/P Contract No.

TABLE OF CONTENTS

INTRODUCTION

The Albemarle-Pamlico Estuarine Study encompasses the second largest estuarine system on the East Coast of the United States. This estuarine system, covering approximately 2,900 square miles, includes the Albemarle Sound and its tributaries, the Currituck Sound and its tributaries, and the Pamlico Sound and its tributaries. The boundaries of these watersheds encompasses approximately 30,000 mi^2 in eastern North Carolina and southeastern Virginia.

These watersheds provide the foundation of much of the coastal region's inherent wealth and serves as home to unique fish, plant, and wildlife species, and their ecological, economic, and cultural importance extends far beyond their boundaries. The benefits provided by the abundant natural resources fall to industry, shipping, commercial and recreational fishermen, and the public at large. Simply put, the Albemarle-Pamlico System is a national treasure.

Historically, the natural resilience of the Albemarle-Pamlico System has allowed the contrasting uses to occur with relatively small losses in productivity of its living resources. In recent decades, however, the productivity and quality of the estuaries has declined as human uses and activities in the estuary have increased and changed. Major uses now include waste disposal, agriculture, forestry, residential and commercial development, mining, national defense, commercial and recreational fishing, wildlife habitat, tourism, and recreation. As the use of the sounds has increased, the conflict among the competing parties escalates. Human's use and abuse of the sounds and estuaries, together with the continued growth and development in their watersheds, have taken a toll on the system.

Finfish fisheries have declined over the past 10 years, with particular dramatic declines in catches of striped bass, shad, and river herring. Fish diseases such as red sore disease and ulcerative mycosis have occurred, as have large-scale fish kills due to low dissolved oxygen levels. Massive blue-green algal blooms take place annually in some of the area tributaries, and rooted aquatic plants have disappeared from the center of the Pamlico River, the upper reaches of the Albemarle Sound, and much of Currituck Sound and Back Bay. Since 1970, some 50,000 acres of shellfish waters have been closed. Clearly, the sounds and estuaries cannot sustain further population growth, industrial uses, and commercial and recreational harvests without an integrative management effort to effectively target and get the jump on emerging problems. Without a coordinated effort among users, regulators, and the public, the value of these estuaries as a natural resource will continue to decline.

We, the members of the Albemarle-Pamlico Citizens Advisory Committees, representing the citizens of North Carolina,

acknowledge our stake in the resources of the Albemarle-Pamlico Estuarine System and accept our share of the responsibility for its current condition. We are determined that this decline will be reversed. To that end, we submit this document to serve as a precursor for the development of the Comprehensive Conservation and Management Plan.

ORGANIZATION OF THE DOCUMENT

This document contains three major components. The first contains a brief discussion of the Comprehensive and Conservation Management Plan (CCMP) and a framework for the development of the CCMP that was adopted by the Citizens' Advisory Committees (CACs). This framework, based upon EPA guidelines and the efforts of other national estuarine programs, serves as "roadmap" to determine what tasks the Albemarle-Pamlico Study (A/P Study) has accomplished and what tasks remain to be completed before the CCMP can be drafted by the Management Conference.

The second element of the document is a listing of the goals and objectives for the A/P Study. The goals and objectives, the product of educational workshops and subsequent discussions, address the issues designated by the A/P Study's Management Conference as areas of concern. These include: Critical Areas, Water Quality, Fisheries, and Human Environment.

The third and final section includes specific recomendations to achieve the previously described goals and objectives. The recommendations, also developed at the workshops, will be submitted to the Technical and Policy Committees as part of the CCMP development process. Some of the recommendations are broad based and long-term suggestions while others are suggestions for the forthcoming proposal cycles.

THE DEVELOPMENT OF THE MANAGEMENT PLAN

In 1987, North Carolina and the U.S. EPA entered into a cooperative agreement, and the Albemarle-Pamlico Estuarine System was added to the National Estuary Program (NEP). The goal of this agreement was the development of a CCMP in 1992.

The CCMP, a component of the Management Conference, is a blueprint for restoring and maintaining the Sounds. It identifies the most significant problems in the study area and establishes goals and objectives for resolving them. In addition, the CCMP prescribes specific actions to protect and enhance the estuaries and their water and sediment quality, living resources, and surrounding land and water resources.

The members of CACs recognize that the development of the CCMP is an important component in the process of restoring and maintaining the Albemarle and Pamlico Estuarine Systems. Since other estuarine studies have completed this phase, we felt that their experiences could help guide our state's efforts. Using the lessons learned and precedents set by the Chesapeake Bay program and the steps listed in the EPA's Document entitled, "Saving Bays and Estuaries", we drafted a framework, entitled "Steps to a CCMP". In our opinion, the CCMP should be based upon this or a parallel framework. Although these steps may be very similar to the framework or steps that have may been developed by the Policy or Technical Committees, we believe that it is important to enumerate the steps the CACs consider significant in order that everyone responsible for drafting the CCMP will have a clear understanding of the processes that lead to the completion of the CCMP document.

In addition to listing the steps, we indicate which of the steps that have been completed as well as those steps, in our opinion, that remain to be fulfilled by the Study before the completion of the CCMP. If the CCMP is to be drafted by 1992, it is imperative that the remaining tasks be completed during the upcoming Fiscal Year (1991). We believe that the unfinished steps should be given the highest priority during the scheduling of next year's workplan and should receive the significant consideration during the forthcoming call for proposals.

STEPS TO A CCMP

ADD APES TIMELINE

1. Define then "State of the Sounds"

According to the EPA Document "Saving Bays and Estuaries" (EPA/503/8-89-001), defining environmental problems and exploring probable causes is the initial step in the CCMP process. The document adds, "[C]haracterization is the basis for defining and selecting the problems to be addressed in the CCMP". As of this date, this task has still not been completed by the A/P Study.

REWORD

It is critical that the problems now being experienced in the Albemarle and Pamlico Sounds be listed, in non-technical terms, so that the public can be made aware of them. In addition to the definition of the problems, a discussion of the probable causes must be included in an easily understood document designed for public consumption. Until this task is accomplished, it will be very difficult to build the necessary public support for the implementation of the CCMP.

Although the "Status and Trends Report" (A/P Project No. 89-13A) is referred to as the "characterization document," it

does not list specific problems nor does it discuss probable causes of the problems. The environmental problems in the study area must be clearly spelled out if the A/P Study is to build a base of public support. It will be difficult to build public interest if problems are described as perceived problems as they presently are in current public document.

We urge the Policy and Technical Committees to address this document's omission and correct them. The completion of the "Status and Trends" document is one our highest priorities. We also request that the CACs be given the responsibility, with staff support, to hold public meetings to solicit input on the "Status and Trends" report. We request that the Technical Advisory Committee complete the "Status and Trends" document as soon as possible.

2. Map resources which need protection.

Although specific areas, such as seagrasses, are currently being mapped, we urge the LRIS unit to use the substantial funding it has received from the study to complete the mapping of the critical areas in the study area, i.e, primary nursery areas, shellfish habitats, etc. We believe that it is important to complete the majority of the critical areas mapping before the CCMP is drafted. One of our highest priorities is the completion of the critical areas map.

3. Assess management options; what tools are available to manage the area?

An inventory of state and federal regulatory programs is listed in "State and federal interrelated programs to the A/P Study" (Project No. 89/07). This document, however, made no attempt to evaluate the individual program's effectiveness.

Regulatory programs that affect water quality in the A/P Study area were evaluated in the document, "Evaluation of state environmental management and resource programs in the A/P region" (Project No. 90-02). The programs evaluated included: NPDES permit program, on-site sewage treatment programs, non-discharge permit programs, stormwater regulations, agricultural cost-share programs, sedimentation and erosion control programs, CAMA permit program, Marine Fisheries regulations, Section 404 permit program, and 410(b) certification. This document can serve as a strong foundation for future discussions concerning what additional management tools should be included in the CCMP. There are other regulatory programs, such as the Fish and Wildlife Coordination Act, that must be evaluated before the final CCMP

is completed. We urge the remaining program evaluations be completed during the next program cycle.

4. Rank potential actions in order of importance.

Given the ongoing federal and state budget constraints, and the reality that the study cannot do everything at once, we believe that it is important to rank possible management options according to their potential improvement to the system. That is, the actions that will give the greatest amount of improvement to the systems be given the highest value or priority when the CCMP is drafted.

We suggest that the Policy (PC) and Technical Committees (TC), including representatives from the CACs, begin to discuss this ranking system or a methodology for ranking regulatory programs. We further suggest that this idea be given priority consideration during the forthcoming call for proposals.

5. Build political support.

Although there are two years remaining before the CCMP is completed, we believe that it is important to begin to build an expanded base of political support now. This base should include state legislators as well as county commissioners and municipal officials.

We advise the Policy Committee to appoint a subcommittee to begin this process. It is important that elected officials become educated about the A/P Study before the CCMP is completed. The importance of building the foundation of political support cannot be overemphasized, and this process must begin immediately.

6. Construct an action strategy.

To help achieve environmental goals and objectives, and to begin to develop political and public support for the CCMP, the Management Conference develops action plans directed toward specific priority problems. An action plan for a known problem may be implemented before the full CCMP is developed and adopted, and is still considered part of the CCMP.

We urge the TC and the PC to consider implementing an "action now agenda" to address some of the problems that will be defined in the completed "Status and Trends" document.

7. Develop a monitoring plan.

Monitoring needs are identified as part of each action plan and begins as action plans are implemented. As an essential part of the review and evaluation process, monitoring continues throughout the implementation phase to measure the effectiveness of the actions and indicate new trends.

Although the U.S. Geological Survey and the Department of Environmental Management are conducting monitoring programs, we believe that these plans should be evaluated as to their effectiveness. More importantly, we suggest that additional site specific monitoring plans and basin-wide monitoring plans be developed as part of next years proposals.

8. Build accountability into the CCMP.

It is important to consider accountability questions before the CCMP is developed. Questions such as, what agencies will be responsible for the implementing the plan, are a consequential component of the CCMP process. The agencies that will be responsible for the implementation of the CCMP are numerous. These include the Corps of Engineers and the Division of Environmental Management at one extreme to the local zoning board or sanitarian on the other. It is not too early to begin to discuss the accountability issue.

If the TC and PC have addressed this topic, then the results should be shared with the CACs and the public at large. If the accountability question has not been addressed, we urge the TC and the PC to include this topic in upcoming committee meetings.

9. Set goals that are concise and easy to understand.

The goals that the Management Conference sets should be long term and broad in scope. We believe that the goals of the study have been clearly set forth, however, we cannot overemphasize the importance of informing and educating the public about these goal. The public hearings for the "Status and Trends" document would be a good opportunity to share the program's goals with the public.

10. Invest in education and public participation

The Water Quality Act of 1987 specifically mandates that public participation must be provided for, encouraged, and assisted by the EPA and the states. Public acceptance, or informed consent, is necessary for the CCMP implementation.

We believe that the A/P Study has made a genuine effort to involve the public in the program; nonetheless, the public must be made aware of the importance and scheduling of the CCMP. To that end, we suggest that a series of workshops should be held immediately after the completion of the 1st draft of the management plan to inform the public about the drafting process and also to solicit their input.

In regards to the "Status and Trends" public hearings, we urge the TC to present the findings of the study in a way that is clear and concise. One of our highest priorities is to disseminate these findings, including problems and probable causes, to the citizen's of North Carolina.

- We believe that public support for implementation is more likely if the public has been involved throughout program development.

The drafting of the CCMP is only one component of the effort that will be required to restore the natural resources of the Albemarle-Pamlico region. Our purpose in presenting the preceding discussion is to publicly voice our support of the CCMP process and express our willingness to assist the TAC and PAC in this important task.

The Albemarle and Pamlico Citizens' Advisory Committees' commitment to improve the environmental quality of the Albemarle-Pamlico Sounds and Estuaries is deeply rooted. It is in that spirit that we present the following list of goals and objectives that we believe should be considered for inclusion in the CCMP.

GOALS AND OBJECTIVES

When the Congress established the National Estuary Program under the Water Quality Act, it mandated the restoration and maintenance of the nation's estuaries. The law requires that the estuarine productivity is to be assured while at the same time the needs of the array of users are to be accommodated. Although simply spoken, this mandate is difficult to accomplish. The Management Conference, which includes the CACs, is given the responsibility of reaching this intricate balance. To achieve this difficult task, the Management Conference sets broad environmental quality goals that comply with the mandate of the Act and comply with the will of the people.

The establishment of overall goals, related to the desired condition for the estuary and its segments, is the most important step in the CCMP process. For without goals, there can be no objectives or action plans and therefore, no improvement in the sounds. Realizing the importance of this step, we have set clear

goals for the Albemarle and Pamlico Sounds and their adjoining systems. Our goals are based on the topics the Policy and Technical Committees identified as key areas of concern. These include: fisheries dynamics, water quality, critical areas or habitat, and human environment. Although long term and broad in scope, we believe that these goals are attainable and will result in the restoration of the Albemarle-Pamlico systems. In addition to these goals, we have listed objectives, specific shorter-term targets, for attaining these goals.

FISHERIES DYNAMICS

GOAL I: Provide for the restoration and protection of the fisheries resources in the Albemarle-Pamlico Estuarine Systems.

The productivity, diversity, and abundance of fish species are the best indicator of the Albemarle and Pamlico Estuarine Systems' condition and should be the main focus of the restoration and protection. Some species of fish and shellfish are of immense commercial and recreational value to humans. While others are necessary and valuable components of the Albemarle-Pamlico food webs on which all species depend. We must determine the essential habitat and environmental elements necessary to support our fisheries and strive to see that these conditions are attained and maintained.

OBJECTIVES:

1. Ensure adequate quantity and quality of primary and secondary nursery and spawning areas to support existing optimum fisheries' harvests.

2. Provide for restoration of shellfish and finfish stocks in the Sounds.

3. Develop compatible estuarine-wide fish stock assessment programs.

4. Determine causes of ulcerative mycosis in finfish and shell disease in blue crabs.

5. Reduce prevalence and occurrence of ulcerative mycosis and shell disease in finfish and blue crabs.

6. Restore all shellfishing areas to "open" status.

7. Restore the Striped Bass stocks to levels capable of sustaining reproductive success and juvenile abundance levels.

8. Restore the Herring stocks to levels capable of sustaining reproductive success and juvenile abundance levels.

9. Achieve measurable reductions in the incidence and severity of fish kills.

10. Maintain water quality necessary for productive shellfishing uses in currently active areas and in areas identified as suitable for potential shellfish development.

11. Restore water quality levels necessary to restore and maintain Currituck Sound's brackish/freshwater fisheries. & waterfowl habitat.

WATER QUALITY

GOAL II: Reduce and control point and non-point sources of pollution to attain the water quality conditions necessary to maintain the fish and wildlife resources of the Albemarle and Pamlico Estuarine Systems.

The improvement and maintenance of water quality are the single most critical elements in the overall restoration and protection of the Albemarle and Pamlico Systems. Water is the medium in which all living resources of the sounds live, and their ability to survive, reproduce, and flourish is directly dependent upon it. We must strive to determine the water quality conditions that living resources require and establish and maintain these levels.

OBJECTIVES:

1. Develop and implement watershed management plans for each distinct basin within the Study area.

2. Adhere to anti-degradation requirements of the Clean Water Act ~~within~~ all tributary drainage basins.

3. ~~Develop Nutrient Sensitive~~ Water management strategies for all ~~tributary drainage basins~~ which reduce nutrient inputs from ~~current levels~~.

4. Target nonpoint sources for further reductions on a basin by basin basis.

5. Reduce elevated levels of freshwater drainage in all tributaries of the drainage basin through intensive water management.

6. Maintain optimal water quality conditions within areas functioning as estuarine nursery areas.

7. Inventory all intensive livestock growing operations within the study region and develop nutrient abatement plans for facilities needing attention.

8. Maintain water quality conditions necessary for survival and growth of submerged aquatic vegetation where it currently exists and in areas where ~~new~~ re-established growth could occur.

9. Develop long-range water quality monitoring plans that address baseline and monitoring data needs.

10. Reduce the discharge of untreated or inadequately treated sewage into sound waters from such sources as leaking or poorly operated sewage systems, and failing septic systems.

11. Reduce pollution from recreational boats.

12. Establish and enforce pollutant limitations to ensure compliance with state and federal water quality regulations.

13. Manage sewage sludge, dredge spoils, and hazardous wastes to protect the sounds and their estuaries.

14. Monitor, regulate, and where necessary for protection of water quality standards, prevent inter-basin transfer and diversion of surface waters. groundwater flows

CRITICAL AREAS OR HABITAT

GOAL III: Halt the destruction and degradation of all critical areas and/or critical habitat.

One of the most valuable uses of the Albemarle and Pamlico Systems is their role in supporting the vast array of living resources that depends on the aquatic ecosystems for their survival and reproduction. We define these areas as: submerged aquatic vegetation (SAVs), emergent aquatic vegetation, freshwater and saltwater wetlands, special fisheries habitat, primary nursery areas (PNAs), and secondary nursery areas (SNAs). Taken together, these areas represents the sounds' richest resources. Many of the

most important human uses of the Albemarle-Pamlico Sounds are dependent on these living resources. We believe that if the destruction of critical areas does not cease, the entire economic well-being of the study area will continue to decline. The attainment of this goal is our highest priority.

OBJECTIVES:

1. Maintain water quality and flow regimes necessary for survival and maintenance of all submerged aquatic habitat.

2. Prevent losses of fisheries habitat areas.

3. Design resource management plans for the regeneration of degraded critical habitat as well as the conservation of existing areas.

4. Identify, designate, and protect the special and unique habitats as Outstanding Resource Waters (ORWs), primary nursery areas, high quality waters, etc.

5. Complete the inventory of important natural areas (plant communities, habitat types, occurrence of endangered species, etc.) unique the entire A/P Study area and prioritize the areas for public acquisition.

6. Enforce Section 404 of the Clean Water Act.

7. Enforce Section 401 of the Clean Water Act as it applies to critical areas.

8. Develop a statewide "no net wetlands loss" policy and build the regulatory framework necessary to enforce the policy.

9. Maintain structural integrity of fringe wetlands for optimum function in the estuarine food web.

10. Maintain optimal water quality conditions within areas functioning as primary nursery areas.

11. Identify, purchase or manage, specific critical habitats for endangered plant and animal protection.

12. Monitor, evaluate, and monitor the impacts of natural flow alterations and divergence on the water quality, salinity, and fisheries production of Currituck Sound.

13. Develop management plans for all critical habitat areas.

14. Map all critical and habitat areas for use in restoration and management efforts.

HUMAN ENVIRONMENT

GOAL IV: Plan for and manage the adverse environmental effects of human population growth and land development in the Albemarle and Pamlico watersheds.

There is a clear correlation between population growth and associated development and environmental degradation in the Albemarle and Pamlico Sounds. The successful management of the A/P System depends upon the understanding of how human activities affect the natural resources of the system. Indeed, one of the stated purposes of the A/P Study is to expand the relevant knowledge about the impact of human uses on the physical, biological, and social systems of the Albemarle-Pamlico ecosystems. If the restoration of the regions' environment is to succeed, the state and federal governments must assert the full measure of their authority to mitigate the potential adverse effects of continued growth.

OBJECTIVES:

1. Direct CAMA land use planning efforts towards water quality, surface + ground and critical areas protection and extend their boundaries to a comprehensive regional approach.

2. Develop + implement nutrient reduction targets for all watersheds basins in the study area.

3. Adopt a basin-wide permitting system that realistically evaluates estuarine flows and dilution capacities.

4. Surface/groundwater use should be maintained and regulated according to a comprehensive regional land planning effort.

5. Map all land uses having significant impacts on water quality within the A/P area. Develop restoration plans for each area one a priority basis.

6. Develop and implement a watershed-based approach for nonpoint source management.

7. Develop, implement, and enforce a comprehensive marina sitting criteria.

8. Reevaluate the siting criteria for all on-site sewage treatment installations.

9. Provide local governments with financial and technical assistance to continue and expand their environmental managements efforts.

10. Evaluate future public access needs and design management efforts to meet these needs.

11. Improve and maintain access to the sounds including public beaches, parks, and forested lands.

12. Enhance A/P Study-oriented education opportunities to increase public awareness and understanding of the systems.

13. Promote opportunities to involve citizens directly in restoration and management efforts.

14. Coordinate the production and distribution of A/P study information and education materials.

RECOMMENDATIONS FOR ACHIEVING GOALS

The EPA's document, "Saving bays and estuaries" emphasizes that the action plans for attaining the defined goals and objectives set by the Management Conference are the centerpiece of the CCMP. We agree with the EPA's evaluation of this process and endorse the "Action Plan Steps" include in the management primer (**see Appendix I**). To assist the Policy and Technical Committees in establishing the action plans for the A/P Study Area, we developed the following recommendations as components of these plans.

Our recommendations are the end-product of a series of workshops held in early May in Washington and subsequent discussion convened in Washington and Williamston in May and June. The recommendations are divided into two groups, the first we label "action now" recommendations. These short term suggestions are intended to influence actions and proposals realized prior to the completion of the CCMP in 1992. We firmly believe that to prevent further declines in the study area's natural resources, these activities must take place before 1992. Accordingly, we give these recommendations our highest support and believe that many of them should be considered subject matter for the forthcoming call for proposals.

The second group of recommendations are to be considered when the action plans are developed for the CCMP. This is not to say that these recommendations are not as important as the suggestion presented for immediate action. We believe that there are additional data that must be collected before a true evaluation of the impacts of these actions can be measured; therefore, it is difficult to prioritize them as to their effectiveness or necessity.

One final point regarding these recommendations. It has been pointed out throughout this document that, to date, there is no clear and concise statement of the sound's problems and identification of the probable causes of these difficulties. Until this step has been completed these recommendations are subject to change. These recommendations, as presented, are based on what we believe to be the most important issues that should be addressed in the CCMP.

FISHERIES DYNAMICS

"Action Now" Recommendations

1. **Evaluate the cumulative impacts of shrimp and crab trawls, oyster dredges, clam-kicking, long haul seines, and scallop dredges on fisheries stocks and critical habitat in the Albemarle and Pamlico Estuarine Systems.**

   We believe that this project should be conducted as soon as possible, and to that end, we give this study our highest priority for the forthcoming proposal period. To maintain complete objectivity, we suggest that a research party outside of the regulatory system conduct this study.

2. **Locate the presence of critical fishery habitats and enter these areas into the LRIS database.**

   The Division of Marine Fisheries (DMF) and the Wildlife Resource Commission (WRC) should identify the presence of critical fishery habitats. If this information is currently unavailable, then this data gap should be recognized and funded during the next proposal cycle. Once organized, these data should be entered unto the LRIS system. It is imperative that these that these areas be mapped before the CCMP is developed.

3. **Develop and implement a protection program for inland Primary Nursery Areas.**

The Coastal Resources Commission (CRC) and the WRC should develop a joint management program for inland PNAs which are located on our freshwater coastal rivers. These areas are susceptible to degradation and destruction from activities that fall outside the jurisdiction of current Coastal Area Management Act regulations. This recommendation falls under the regular duties of these two organizations, and as such, should not be funded from the A/P budget.

4. **Investigate the impacts of urbanization on shellfish resources.**

Recent closures of all shellfishing waters adjacent to the Town of Pine Knoll Shores adds to the confusion regarding the effects of urbanization of coastal water quality and fishery resources. A site specific study should be initiated to determine just what effects development has on these areas. It is imperative that base data be collected and preliminary findings be completed before the drafting of the CCMP. Since the land uses and known shellfishing areas of Carteret County land have been entered into the LRIS system, we recommend that these data be used for such a study and it be funded during the next budget cycle. These findings would be invaluable for the development of management recommendations.

Recommendations for the CCMP

1. Develop commercial fishing gear which captures target species/sizes while releasing unharmed non-target species/sizes.

2. Conduct additional research to evaluate site-specific impacts of urbanization on closure of waters to shellfish harvests.

3. Prepare and distribute management plans for species of importance to recreational and commercial fisherman.

4. Initiate a coherent long-term aquatic resource educational program in the coastal area that emphasizes clear descriptions of fishing practices' restrictions and agency phone numbers that can be called to report violations.

5. Initiate a long-term investigation into the fisheries biology of Currituck Sound that considers the impacts of both Virginia's withdrawals and the presence of Virginia Beach's Canal No. 2.

WATER QUALITY

"Action Now Recommendations"

1. **Develop watershed management plans for each distinct watershed with the A/P study area.**

   There is great diversity within the watersheds of the A/P Study region. Not all water quality protection measures will work the same way in each waters. These watershed management plans will form the foundation for the CCMP and should be funded in the next round of research projects. Basins to be examined include: Pamlico, Bogue, Currituck, Core, and Back Sounds; and the Alligator, Bay, Chowan, Little, Neuse, North, Pamlico, Pasqoutank, Perquimans, Pungo, Roanoke, Scupernong, and Yeopim Rivers. The development of a management plan for Currituck Sound plan is currently underway, and this project could serve as the framework for the additional plans.

2. **Enforce all NPDES permit violations and prosecute violators to the full extent of the law.**

   As of 1987, there were over 600 permitted point source dischargers in the A/P Basin, however, these figures do not include upstream dischargers in Virginia. Recent Division of Environmental Management (DEM) studies indicated that a large percentage of the estuarine impairment in the Pamlico, Chowan, and Neuse basins stem from these discharges. It is urgent that DEM enforce and prosecute NPDES Permit violations. Under the current system, there is little incentive for violators to achieve compliance. As the recent violations at Rocky Mount POTW indicate, the current NPDES program is still not completely protecting the watersheds within the study area. We believe that DEM should supply the Management Conference with a biennial report on NPDES permits, compliance status and enforcement actions within the A/P Basin. We support the report format presented in A/P Report No. 90-02 for this task.

3. **Develop a numerical nutrient reduction target for the A/P Study Area.**

   Nutrient accumulations is increasing in the study area. Annual algal blooms, such as those occurring in the Currituck Sound and the Pamlico, Chowan, and Neuse Rivers, support this statement. Nutrient loading must be addressed before 1992. During the 1990 triennial review, DEM should develop numerical standards for nitrogen and phosphorus for different water body types. Using these data, DEM should publicly announce a long-term numerical nutrient load reduction program. The Chesapeake Bay nutrient reduction program could serve as a

model for North Carolina's efforts. Development of nutrient reduction targets are one of our highest priorities.

4. **Conduct a study to determine funding sources for increased monitoring and compliance inspection programs.**

   It is obvious that the increased inspections will require additional staffing and funding. Given the current budget crisis, what are the sources for these additional monies? A project should be funded during the next proposal cycle that will begin to address these needs. This study should include and evaluate: user fees, impact fees, monies reallocated from one program to another, and others. We believe that this study be should be funded during the next round of proposals.

5. **Initiate a study that evaluates the effectiveness of current water quality regulatory programs.**

   Currently, there are many programs that oversee water quality in the A/P study area. Because funds are limited, monies should be appropriated according to a program's effectiveness at improving water quality. We believe that an in-depth evaluation of large budget programs, such as the Division of Soil and Water Conservation (DSWC) cost-share program, should be conducted based upon the program's proficiency at improving an area's water quality. At the CAC's recent workshops, several Division Heads suggested and supported such an evaluation. We add our support to this project and believe that it should be undertaken in the upcoming fiscal year.

Recommendations for the CCMP

1. Adopt and implement individual water quality protection plans for each distinct watershed within the Study area.

2. Consider the cumulative basin-wide effects for each NPDES permit by developing realistic estuarine loading models for evaluating permit applications.

3. Develop consistent monitoring and reporting requirements, including the hiring enforcement inspectors, to facilitate local enforcement of on-site waste treatment systems.

4. Incorporate impact fees into the stormwater management program to offset its cost.

5. Develop stronger incentives and educational materials to promote proper operation and maintenance of all on-site treatment systems.

6. Grant cost-share monies based on an inventory and priority ranking of critical needs of the entire watershed.

7. Move immediately to require NPDES permits for all animal growing operations which constitute a point source thereby encouraging their compliance with current non-discharge requirements.

8. Determine the effectiveness of current set-back and density regulations on water quality.

9. Determine the extent of the marine sanitation problem.

10. Provide local sanitarians adequate training, funding and ample time to effectively oversee septic systems.

11. Institute stormwater project inspections during both construction, to determine proper design, and after project completion, to determine if the systems are maintained properly.

12. Evaluate cost-effective alternatives to septic systems.

CRITICAL AREAS OR HABITAT

"Action Now Recommendations"

1. **The State of North Carolina should establish a policy framework for achieving no illegal loss of wetlands in the state.**

   We believe that North Carolina should play a greater role in wetlands protection. To this end, we recommend that the state place much greater emphasis on protecting wetlands using its existing regulatory authority under the Section 401 Certification process. The state should develop a statewide wetlands conservation plan which consists of two elements, a summary of data defining the state's wetland resources and a statement of policies that will achieve the recommended goals. At a minimum, this section would embrace the goal of no net loss in the short-term and the increase in wetlands quantity and quality in the long-term. The A/P Study is an ideal chance to develop such a plan. The National Wetlands Policy Forum developed by The Conservation Foundation (October, 1989) provides an excellent framework for the development of such a program, and we heartily endorse this publication's recommendations.

2. **The Division of Coastal Management and DEM should develop scientifically sound criteria for marina siting.**

During the CAC workshops, it was apparent that there are weaknesses in current regulatory programs overseeing marina siting. For example, the cumulative impacts of numerous small facilities (docks or piers that have 10 or fewer slips) are not adequately considered under the existing programs. Although this suggestion falls under these agencies' regular duties, we believe that they are currently understaffed and therefore unable to accomplish this task. This initial phases of this project could be handled by an outside evaluator who could then meet with the state agencies to develop the actual siting criteria. Due to the numerous water quality impacts associated with marinas, we give the development of marina siting criteria our highest priority and urge that such a study be included in next year's proposals.

3. **The Division of Marine Fisheries, Wildlife Resources Commission, and Natural Heritage Program should complete the mapping of critical habitat and/or critical areas.**

Before any management plan to protect resources can be drafted, the quantity, quality, and location of these resources must be identified and mapped. This map should include SAVs, PNAs, spawning areas, waterfowl habitat, and locations of endangered plant and animal species, etc. Based on comments we heard at the workshop, this task has not yet been completed. The completion of the study area's resource mapping is one of our highest priorities. Although this task falls under both these agencies' regular duties, we urge them to utilize the substantial funding that has gone to LRIS to complete the inventory and mapping before development of the CCMP.

4. **All regulatory agencies should strengthen and enforce existing protection plans for all critical areas.**

Despite ongoing protection efforts, critical habitat, including wetlands, continue to disappear. The protection of critical aquatic habitats and areas will require the involvement of the numerous state and federal agencies managing the various activities that take place around these areas. If this effort is to succeed, interagency coordination must be strengthened. The A/P program should take the lead in coordinating habitat protection efforts to ensure that A/P goals and objectives are met. We recommend that an interagency workgroup be established to discuss the cumulative impacts of development on critical areas as mandated by the 1989 Legislature. As a first step, the group must evaluate the effectiveness of current regulations and develop criteria to be employed for addressing cumulative impacts in the CAMA

review process. At a minimum, this workgroup should include representatives from the public, DCM, DEM, DMF, WRC, USFWS, and the USCOE. We suggest that North Carolina develop a "Critical Areas Matrix" similar to the one created in Maryland to direct future development and protection efforts in critical areas.

5. **Determine an accurate estimate of wetland loss in the A/P study area.**

An accurate estimate of wetland loss, and the causes of the losses, must be completed before the drafting of the CCMP. Since the USFWS wetland delineation maps are now complete, this would be an ideal time to undertake such a study. The workshop discussions pointed out that there is no accurate estimate of wetland loss nor an accurate assessment of what activities have (are) caused (causing) these losses. We give our support to completing a such study during the next proposal cycle. It is imperative that the correlation between wetland loss and the cause be completed before the CCMP is drafted. Particular emphasis should be placed on quantifying losses due to the various 404-exempted activities.

Recommendations for the CCMP

1. Educate the public regarding the importance of critical areas/habitat.

2. Reevaluate the efficacy of the CAMA in protecting wetlands.

3. Expand 75 foot shoreline AEC which is not adequate to protect estuarine habitats from water quality degradation.

4. Develop a "critical areas matrix" to allow the general public to assess the critical areas requirements for a given parcel of land.

5. Strengthen stormwater controls around High Quality Waters.

6. Lower density limits around Outstanding Resource Waters.

7. Develop protection plans for SAV beds, shellfish resource waters, and anadromous spawning areas.

8. Initiate "selective enforcement" of Marine Sanitation Devices (MSD) to improve compliance and boater awareness.

9. Develop MSD educational programs for marina owners and the general public.

10. Revise CAMA land use planning guidelines to designate wetlands as conservation areas.

11. Evaluate whether significant wetland losses are occurring because of forestry operations Section 404 exemptions.

12. Expand state acquisition of critical habitat and wetlands.

13. Evaluate enforcement efforts under Section 404.

HUMAN ENVIRONMENT

"Action now Recommendations"

1. **Conduct a study to determine the optimal design and setback distances for vegetative buffers zones.**

   Currently, there are a variety of vegetative buffer zones and setback distances being utilized in the A/P study area. These include the setbacks recommended by the recently published forestry Best Management Practices (BMPs) and suggested agricultural BMP setbacks. However, the majority of these practices are voluntary and there has been few attempts to determine the effectiveness of them on actual water quality. It is important to evaluate these practices before the CCMP is completed. A recent A/P Study indicated that the current 75 foot AEC under CAMA (which is not a setback) may be inadequate to protect estuarine critical areas. In Maryland, the minimum setback distance for development in critical areas is 300 feet. Why is there such a discrepancy between the two states? We recommend funding a project to address the buffer and setback issues in a single basin. The study would evaluate these practices in regards to water quality in hopes of developing new standards that could then be applied to the entire A/P area.

2. **Conduct a study to develop the framework for individual basin-wide resource management plans that include: problem assessment, baseline data for monitoring purposes, carrying capacity, and objectives.**

   The A/P Study area contains a diverse group of watersheds within its boundaries. Although it will be important to develop a management plan for the entire area, we believe that in most cases each watershed will have its own special concerns and management needs. It is not too early to begin to develop the framework for these specific plans. As a starting point, the Currituck Sound plan should be evaluated as to its completeness and usefulness by an outside evaluator.

Then, taking the study one step further, a framework for a generic plan should be developed that could then be applied to the remaining basins. We believe that it is important to develop a framework that is both vertical, i.e, consistent with the overall CCMP, and horizontal, i.e., consistent with adjacent basins. A series of plans designed in this manner would significantly reduce the complexity of the CCMP. In addition, these smaller management plans would increase the public's interest regarding their local area's management plan as well as expand support for the state-wide management efforts. The development and design of individual basin-wide management plans must be included in the forthcoming call for proposals.

3. **Conduct a study to evaluate land uses and their subsequent effects on water quality .**

At the May CAC workshop, there was a great deal of controversy and misunderstanding regarding various land uses and their impacts on water quality. It will be difficult to design a CCMP until some of these questions and misconceptions are more clearly understood by the scientific community and the general public. We believe that the LRIS system can be of some use in resolving this complicated issue. As we mentioned earlier, a recently completed A/P study mapped all land uses in Carteret County and they are now included in the LRIS system. That study also included water uses such as shellfishing areas, wastewater treatment outflows, stormwater runoff, adjacent development, etc. The next logical step would be to take that study one step forward and overlay the land uses with areas of known or potential water quality problems to determine if there is a correlation. Although this study is site-specific, it could form the foundation for additional work. The link between land use and water quality is already established in the literature. We believe this presents a cost-effective method for demonstrating to the public the need to management land uses to protect water quality.

4. **Map all land areas within the A/P study that have a significant impacts on water quality.**

The 1989 North Carolina Nonpoint Source Assessment Report evaluates the nonpoint sources of pollution for surface waters in the state. In some of the basins within the A/P study area, agricultural practices account for as much as 80 percent of the water quality degradation now being experienced. In other areas, urbanization is the major cause of water quality problems. Sediments, nutrients, pathogens, and chemicals from land use activities have the potential to cause considerable damage to the overall water quality in the coastal region.

The mapping of polluting land uses will enable clean-up funds to be targeted at problems. For example, the Agriculture Cost-share Program was created to provide funding to enable landowners to install or implement BMP's that will improve water quality in the impacted areas. Although completely voluntary, the program distributed approximately $6.5 million in 1989. We believe that this program has tremendous potential to improve the water quality in the region; however, to realize this goal the funding must be directed to areas that contain land areas or agricultural practices having significant impacts on water quality and are most in need of technical and administrative assistance to improve program implementation. To that end, we feel that it is of highest priority to complete the mapping of the high impact areas. Since this program is appropriated such a large budget, it is imperative that the areas being considered for funding be prioritized according to their location on the impact map as well as the site's potential for improving water quality.

5. **Initiate a program to actively involve the Department of Defense in the A/P Study.**

The Department of Defense (DoD) is one of the largest single landowners in the A/P region. Although the exact acreage is unknown, it is estimated that DoD activities encompass almost 100,000 acres. The DoD has a substantial economic and environmental impact in the 36 county study area; however, the effects of the DoD's activities on the estuarine system are not yet clearly understood. Clearly, the DoD is one of the major players in the A/P region and should be actively involved with the development of the management efforts. As an example, on April 20 of this year Defense Secretary Cheney signed an agreement with EPA that strengthens the 1984 cooperative agreement to restore the Chesapeake Bay (See National Wetlands Newsletter July/August 1990). The agreement includes the DoD's commitment to improve pollution prevention practices, better training for DoD wastewater treatment operators, and regular inspection of DoD treatment plants. We urge that a working group be organized at once to begin discussions regarding a similar accord between the DoD and the State of North Carolina. Outwardly, there appears to be no active dialogue between the A/P Study and the DoD other than the Army Corps of Engineers. We cannot wait until 1992 to begin to these discussions.

Recommendations for the CCMP

1. Modify drainage ditches in agriculture + commercial forestry sites to control sediment and runoff.

2. Develop a realistic permit fee system for the sediment/erosion control program that will help to finance additional compliance inspection expenses.

4. Require CAMA land use plans to include water use planning.

5. Design a mandatory planning similar to CAMA land use plans for all the counties in the A/P study area.

6. Provide funding for rural counties to begin voluntary comprehensive land use planning.

7. Continue to demonstrate the state's commitment to restoring and maintaining the resources of the sounds by convening an annual meeting to monitor progress in implementing the CCMP.

8. Track and evaluate activities which may affect the estuaries' water quality and produce an annual report that focuses on these issues.

CONCLUSION

There are four main constituent groups involved in the Albemarle-Pamlico Study: elected officials, environmental managers, scientists, and the public. By design, these four groups equally share the responsibility for restoring and maintaining the resources of the sounds. Although there must be sound scientific data on which to base management decision, because public funds are used for this effort, the success of the estuary program will ultimately depend on citizen support. To generate that support, the citizenry must be persuaded that it has a vested interest in the program's outcome and must participate in the entire effort. If the public is to be convinced of the importance of the A/P program, it must be provided accurate, timely information, and most importantly, access to that information. The flow of information is the foundation of public participation.

Public participation in the context of the National Estuary Program means involving citizens in the decision making process that the Management Conference oversees, and the importance of public participation in the development of the CCMP cannot be overemphasized. According to the A/P Public Involvement Plan (A/P Project No. 89-04), "Public involvement is essential to the development and implementation of the CCMP...". We concur with this assessment and emphasize its message to our fellow Management Conference members.

The Citizen Advisory Committees are charged with representing the public's voice during all program phases and we take this responsibility seriously. By the creation of this document, we reaffirm our commitment to restore and protect the ecological integrity, productivity, and beneficial uses of the Albemarle and Pamlico Sounds for future generations.

_____

(Date)

For the Albemarle Citizens Advisory Committee _____

Brewster Brown, Chairman

For the Pamlico Citizens Advisory Committee _____

Derb S. Carter, Chairman

GLOSSARY of ABBREVIATIONS

AEC.....Area of Environmental Concern
A/P Study.....Albemarle-Pamlico Estuarine Study
BMP.....Best Management Practices
CAC.....Citizens Advisory Committee
CAMA.....Coastal Area Management Act
CCMP.....Comprehensive Conservation Mgmt Plan
CRC.....Coastal Resources Commission
DCM.....Division of Coastal Management
DEM.....Division of Environmental Management
DMF.....Division of Marine Fisheries
DoD.....Department of Defense
DSWC.....Division of Soil and Water Conservation
EPA.....Environmental Protection Agency
LRIS.....Land Resources Information System
MSD.....Marine Sanitation Device
NEP.....National Estuarine Program
NPDES.....Natl' Pollution Disch. Elimination Sys.
PC.....Policy Committee
PNA.....Primary Nursery Areas
SAV.....Submerged Aquatic Vegetation
SNA.....Secondary Nursery Area
TC.....Technical Committee
USFWS.....U.S. Fish and Wildlife Service
USCOE.....U.S. Corps of Engineers
WRC.....Wildlife Resources Commission

APPENDIX I.

ACTION PLAN STEPS

1. State the problem, identifying the probable causes and sources.

2. State the program goals related to the problem, source, or cause.

3. Set specific objectives to attain the goals.

4. Determine the universe of possible management activities, both new and existing, for consideration.

5. Select the activity that will work, that the public will support, and that can be implemented within reasonable time and resources.

6. Establish specific action plans needed to abate and control the problem or protect the resource. Each action plan addresses:
   - **WHO:** Identify who will act, pay, and enforce: spell out roles and resource commitments for each participating agency, institution, and enterprise.
   - **WHAT:** Describe what will be done. For example, specify numerically based load reductions and use designations in this location; describe what specific activities are necessary to reach them.
   - **WHERE:** Describe the location this action will affect.
   - **WHEN:** Include schedules.
   - **HOW:** Outline the procedures used to perform this activity.
   - **HOW MUCH:** Cost-out the actions and from where the funding will come.

7. Implement and monitor results.

8. Report on progress, costs, and results.

9. Review, re-evaluate, and redirect as needed.

FROM: Saving Bays and Estuaries: a primer for establishing and managing estuary projects. (EPA/503/8-89-001 Aug. 1989).

Attachment G

Resolution

WHEREAS, the Albemarle-Pamlico Estuarine Study (A/P Study) is a joint effort between State and Federal Governments and interested citizens of the State of North Carolina; and

WHEREAS, the Citizens' Advisory Committees (CACs) are comprised of interested citizens; and are charged with helping to produce an effective Comprehensive Conservation Management Plan (CCMP) and developing a strong consensus of public support; and to reaffirm the health and purpose of the A/P Study

NOW, THEREFORE, BE IT RESOLVED:

1. That previous recommendations for the establishment of a Legislative Liaison Committee be implemented immediately to act as a liaison between all A/P Study Committees and the State Legislature.

2. That recommendations for the CCMP be implemented on a sub-basin watershed basis listing separately suspected problems along with projected solutions and the agencies responsible for resolving these problems.

3. That the CCMP shall include a Citizen Oversight Committee empowered with the ability to review and monitor actions of the appropriately responsible state agencies.

4. That the CCMP shall be written in clear, concise language that is readily understood by the general public.

5. That a half-time or full-time (as needed) individual be hired to work closely with the CACs in the writing and editing of the CCMP.

Adopted this 30th day of August, 1990.

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Director, Albemarle-Pamlico Estuarine Study

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Co-Chair, Policy Committee

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Co-Chair, Policy Committee

Pamlico Citizens' Advisory Committee

Rev 9-11-90

William Barker
PCAC
POB 52
Oriental 28571
PAMLICO
919-638-4904-h
919-638-1901-o

Vince Bellis
PCAC-At Lg/Ed
1205 E Wright Rd
Greenville 27834
PITT
919-758-1979

Beth Burns
PCAC
POB 1550
Manteo 27954
DARE
919-473-2528-h
919-473-5734-o

Ralph Buxton
PCAC-Eng
POB 340
Nags Head 27959
DARE
919-441-6800

Rann Carpenter
PCAC-Industry
POB 48
Aurora 27806
BEAUFORT
919-322-4111

Derb Carter
PCAC-At Lg
137 E Franklin St
Suite 30
Chapel Hill 27514
ORANGE
919-833-4859-h
919-967-1450-o

Ann Carter
PCAC-At Lg/Pub Off
1113 Front St
Beaufort 28516
CARTERET
919-728-5501

Luther Daniels
PCAC-Pub Off
POB 221
Manteo 27954
DARE
919-473-5389

Grace Evans
PCAC-At Lg
POB 355
Oriental 28571
PAMLICO
919-249-1748

Sharon Gibbs
PCAC-At Lg/Pub Off
Rt 1 Box 214C
Engelhard 27824
HYDE
919-925-5681
919-926-3531

John Greene
PCAC-At Lg
POB 12000
Raleigh 27605
WAKE
919-821-8574

Etles Henries
PCAC-At Lg/Com Fsh
South Creek
Aurora 27806
BEAUFORT
919-322-5776

Tim Hodge
PCAC-At Lg
Rt 1 Box 199B
Swanquarter 27885
HYDE
919-946-7725

Bill Jackson
PCAC-At Lg
509 W 15th St
Washington 27889
BEAUFORT
919-926-3861
919-946-3189

Ernie Larkin
PCAC-Env Grp
224 Pineview Dr
Greenville 27834
PITT
919-756-0103-h
919-551-4495-o

Dick Leach
PCAC-Dev
Rt 5 Box 271
Washington 27889
BEAUFORT
919-946-5497
919-946-1735

Roger Lyons
PCAC
POB 1391
New Bern 28562
CRAVEN
919-633-7472-o
919-946-4454-h

Todd Miller
PCAC-At Lg
3223-4 Hwy 58
Hadnot Creek Frm
Swansboro 28584
CARTERET
919-393-8185
919-393-6649

David O'Neal
PCAC-At Lg/Ag
Rt 1
Swanquarter 27885
HYDE
919-926-5721

Thomas Quay
PCAC-At Lg
2720 Vanderbilt
Raleigh 27607
WAKE
919-828-9874

Jerry Schill
PCAC-At Lg/Com Fsh
POB 2303
New Bern 28561
CRAVEN
919-633-9616
919-633-2288

Wayland Sermons
PCAC
POB 69
Washington 27889
BEAUFORT
919-946-0006-h
919-946-0871-o

Jeffrey Smith
PCAC-At Lg
701 W Ocean Acres
Kill Devil Hills
27948
DARE
919-441-2525

Edward Smith
PCAC-At Lg
132 Landing Cir
Grimesland 27837
PITT
919-758-5183

Frank Sommerkamp
PCAC-At Lg
Rt 2 Box 170A
Aurora 27806
BEAUFORT
919-322-5259

John Spagnola
PCAC-Ed
2511-A E 3rd St
Greenville 27858
PITT
919-757-3073

John Van Duyn
PCAC-At Lg
Rt 2 Box 141
Plymouth 27962
WASHINGTON
919-793-4118

Tom Stroud
Education Outreach
PTRF
POB 1854
Washington 27889
919-946-7211