

FISH AND WILDLIFE SERVICE'S SEPTEMBER 1979 BIOLOGICAL OPINION
BASED ON TVA ALTERNATIVES IN APRIL 1979 REPORT TO OMB

- I. THREE TVA ALTERNATIVES FROM OMB REPORT ARE OUTLINED.
 - A. PROJECT AS PLANNED WITH CONSERVATION MEASURES.
 - B. LOW POOL ALTERNATIVE.
 - C. NO IMPOUNDMENT.

- II. OPINION STATES LIKELY JEOPARDY FOR ALTERNATIVES #A AND #B. HOWEVER, ALTERNATIVE #A WOULD BE NO JEOPARDY IF FISH AND WILDLIFE SERVICE'S VERSION OF CONSERVATION PROGRAM IS IMPLEMENTED WITH PROVEN SUCCESS.

- III. FWS'S MODIFICATIONS IN CONSERVATION PLAN NEEDED TO AVOID JEOPARDY:
 - A. TVA MUST, WITH THE ASSISTANCE OF FISH AND WILDLIFE SERVICE, DEVELOP, CARRY OUT, AND COMPLETE WITH PROVEN SUCCESS A CONSERVATION PROGRAM WITH CONRADILLA CAELATA AND QUADRULA INTERMEDIA BEFORE FINAL CLOSURE OF THE DAM.
 - B. STUDY THE BIOTIC AND ABIOTIC CHARACTERISTICS OF SITES WHERE THE TWO MUSSELS OCCUR AND AT SITES ON THE DUCK, CLINCH, POWELL, AND HOLSTON RIVERS WHERE POTENTIAL TRANSPLANT SITES EXIST.
 - C. USING HABITAT AND LIFE HISTORY INFORMATION, TRANSPLANT MUSSELS TO APPROPRIATE SITES.

D. OTHER CONSERVATION MEASURES MAY ALSO BE NECESSARY.

1. THE APPLICATION OF STRINGENT POLLUTION STANDARDS ON EFFLUENT DISCHARGES;
2. RECONSTRUCTION AND RENOVATION OF OLD MILL DAMS;
3. CONSTRUCTION OF NEW LOW-LEVEL DAMS OR SIMILAR STRUCTURES;
4. PROTECTION OF NATURAL SHOALS FROM ADVERSE IMPACTS SUCH AS DREDGING;
5. SPECIAL PROGRAMS TO ABATE EXISTING SEVERE ENVIRONMENTAL PROBLEMS INCLUDING RECLAMATION OF DISTURBED AREAS;
6. UPGRADING OF MUNICIPAL WASTE TREATMENT SYSTEMS;
7. IMPROVING SOIL EROSION PRACTICES; AND
8. THE PROMOTION OF ADDITIONAL REGULATORY MEASURES.

E. TVA WOULD MEET THE REQUIREMENTS OF THE BIOLOGICAL OPINION WHEN SUFFICIENT EVIDENCE IS OBTAINED AND PRESENTED TO THE FISH AND WILDLIFE SERVICE THAT SHOWS THAT A STRONG CONSERVATION PROGRAM HAS BEEN COMPLETED AND IS PROVEN SUCCESSFUL TO THE POINT WHERE COMPLETION OF THE PROJECT WILL NOT JEOPARDIZE THE TWO SPECIES.

HERBST'S APRIL 1980 LETTER
TO THE CORPS FURTHER DEFINING TVA'S
ROLE IN THE CONSERVATION PROGRAM

- I. TVA WILL CONTINUE WITH THE MUSSEL CONSERVATION PROGRAM IN THE POWELL, CLINCH, AND DUCK RIVERS AS OUTLINED IN THE SEPTEMBER 1979 BIOLOGICAL OPINION.

- II. TVA CAN PLACE ADDITIONAL FILL TO COMPLETE THE DAM STRUCTURE AND THIRD STAGE DIVERSION WHEN THEY DEMONSTRATE TO THE FISH AND WILDLIFE SERVICE THE LIKELY SUCCESS OF THE CONSERVATION PROGRAM. THE CRITERIA FOR LIKELY SUCCESS ARE AS FOLLOWS:
 - A. HABITAT RESTORATION AND IMPROVEMENT - SPECIFIC AREAS WILL HAVE BEEN IDENTIFIED AND AGREED UPON. IMPROVEMENT ACTIVITIES WILL BE UNDERWAY, BASED UPON THE ANALYSIS OF CRITICAL HABITAT COMPONENTS COMPLETED IN EARLIER PHASES OF THE CONSERVATION PROGRAM.

 - B. TRANSPLANTATION - SUCCESSFUL TRANSPLANTATION OF SPECIES WILL HAVE BEEN DEMONSTRATED WITH THE EXPECTATION OF REPRODUCTIVE SUCCESS BY SHOWING SURVIVING AND HEALTHLY ADULT, ADULT FEMALE WITH GLOCHIDIA, AND IDENTIFICATION AND PRESENCE OF THE NECESSARY HOST FISH.

- III. THE HERBST'S LETTER RESTATES THE FISH AND WILDLIFE SERVICE BELIEF THAT TVA HAS A COMMITMENT TO IMPROVE THE POWELL AND CLINCH RIVERS - "THIS UNIQUE CONSERVATION PROGRAM SETS ABOUT TO IMPROVE HABITATS AND RESTORE MUSSELS AT A LARGE NUMBER OF SITES IN THE DUCK, POWELL, CLINCH, AND OTHER RIVERS OF THE REGION.

SPECIFIC RIVER STRETCHES WILL BE IDENTIFIED FOR HABITAT IMPROVEMENT INCLUDING THE PLACEMENT OF INSTREAM STRUCTURES AS NEEDED AND THE MODIFICATION OF SUBSTRATE. THESE AREAS WILL BE THE PRINCIPAL SITES FOR BOTH ENDANGERED AND RELATED SPECIES AND THEIR FISH HOSTS WILL BE RESTORED. IN ADDITION, WORKING WITH STATES AND OTHER AGENCIES, SANCTUARIES WILL BE EXPANDED AND ESTABLISHED TO STRENGTHEN THESE ENDANGERED AND OTHER COLUMBIAN FAUNA. COOPERATIVE WORK WILL ALSO SEEK TO CORRECT SPECIFIC SOURCES OF DEGRADATION AND POLLUTION AS THEY EFFECT EXISTING POPULATIONS, RESTORE HABITAT, AND REESTABLISH POPULATION".

FISH AND WILDLIFE SERVICE DIRECTOR GREENWALT'S
TESTIMONY SEPTEMBER 24, 1980, BEFORE
THE SUBCOMMITTEE ON ENVIRONMENT, ENERGY,
AND NATURAL RESOURCES

- I. ON PAGE 28 AND 29 OF THAT TESTIMONY, GREENWALT IN QUESTIONING BY CONGRESSMAN MOFFETT AGREES THAT HE BELIEVES:
 - A. THAT TVA WOULD TRANSPLANT CONRADILLA CAELATA TO THE POWELL RIVER AND PROVIDE SUITABLE HABITAT FOR IT.
 - B. BECAUSE THERE ARE NOT ENOUGH QUADRULA INTERMEDIA TO UNDERTAKE A TRANSPLANT PROGRAM THEY WOULD HAVE TO CLEAN UP THE POWELL RIVER TO ARREST THE DECLINE OF ~~THE~~ QUADRULA INTERMEDIA.
- II. PAGE 30 CONTAINS FURTHER STATEMENTS ON THE CLEAN-UP OF THE POWELL. CONGRESSMAN MOFFETT STATES: " THERE IS AN ABANDONED MINE. THERE ARE RUN-OFFS, COAL WASHING OPERATIONS, AND A WHOLE LOT OF FACTORS THAT MAKE IT VERY POLLUTED. IT IS NOT ALL TOGETHER CERTAIN THAT TVA WILL BE ABLE TO CLEAN UP THE POWELL TO THE DEGREE NECESSARY TO PROTECT THOSE MUSSELS. IS THAT RIGHT"? MR. GREENWALT STATES: "THAT IS CERTAINLY A FAIR STATEMENT. IT IS HOWEVER TVA'S RESPONSIBILITY TO DO SO IF IT INTENDS TO PROCEED WITH THE PROJECT".
- III. ON PAGE 36 GREENWALT FURTHER DEFINES HIS UNDERSTANDING OF TVA'S COMMITMENT TO IMPROVE HABITAT - MR. GREENWALT STATES: "LET ME POINT OUT THAT IN ADDITION TO CLEANING UP THE WATERS, I AM SURE THE CHAIRMAN KNOWS THAT TVA IS COMMITTED TO HABITAT IMPROVEMENT, THE CONSTRUCTION OF ARTIFICIAL RIFFLES, AND THIS SORT OF THING ALL OF WHICH ARE POSITIVE".

TVA'S CHAIRMAN S. DAVID FREEMAN
TESTIMONY SEPTEMBER 25, 1980
BEFORE HOUSE OF REPRESENTATIVE SUBCOMMITTEE
ON ENVIRONMENT, ENERGY, AND NATURAL RESOURCES

- I. ON PAGE 14 CHAIRMAN FREEMAN IN HIS OPENING REMARKS MAKES A STATEMENT ON THE CLINCH AND POWELL: "IN ADDITION TO WORK ON THE DUCK RIVER, MEASURES WILL BE IMPLEMENTED ON THE CLINCH AND POWELL RIVERS, WHERE THE ENDANGERED MUSSELS ARE STILL FOUND IN SMALL NUMBERS, TO PROVIDE ADDITIONAL OPPORTUNITIES FOR THEIR SURVIVAL AND GROWTH".

- II. ON PAGE 55 AND 56, CHAIRMAN FREEMAN FURTHER COMMITS TVA TO A POWELL RIVER CLEANUP: "OUR BIOLOGISTS FELT THAT THEY HAD LEARNED ENOUGH ABOUT THE HABITAT WHERE THEY WERE SURVIVING, AT LILLIARD DAM, SO THAT THERE WAS A REASONABLE CHANCE THAT IT COULD BE DUPLICATED IN THE UPPER DUCK, IN THE POWELL, AND IN OTHER RIVERS. THIS IS NOT A SURE THING BUT IT WAS SOMETHING THAT THEY FELT THAT THEY COULD DO".

"THE THIRD THING IS THAT THERE IS POLLUTION IN THE POWELL THAT WE WOULD BE OBLIGATED TO REDUCE. THAT IS A PLUS, MR. CHAIRMAN. I MAKE NO APOLOGY FOR THE FACT THAT AS A RESULT OF THIS MITIGATION PLAN WE MAY CLEAN UP SOME OF THE POLLUTION FROM STRIP MINING IN THE POWELL RIVER. THAT IS ONE OF THE ASPECTS OF THIS THAT MOTIVATED ME TO GO AHEAD WITH IT".

"HERE IS A CHANCE TO TAKE A PROJECT AND TURN IT INTO AN ENVIRONMENTAL CLEANUP OF THESE RIVERS".