

# ECOSEARCH, INC.

Ecological Surveys and Research

*Did any comments*

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October 30, 1990

Field Supervisor  
Asheville Field Office  
U.S. Fish & Wildlife Service  
100 Otis Street, Room 234  
Asheville, North Carolina 28801

*File King Pink Mussel*  
*SEY mussel*  
**RECEIVE**  
NOV 2 1990

USFWS  
ASHEVILLE, NC

*11/5*  
*11/5*  
BPC NAM  
RGB JAR  
RRC NC  
JAF LR  
VGH

*Rec'd  
Bill Weaver  
BC*

Dear Sir :

Thank you for sending the Agency Draft Recovery Plan for Obovaria retusa, the ring pink mussel, and for allowing me the opportunity to comment on it. I therefore offer the following points.

I have great respect for the FWS biologists who work on freshwater mussels, but in my opinion, except for Dr. Neves, there has existed for several years a stubborn, closed, mind-set among them which has doomed in advance any hope of meaningful recovery for most of our endangered mussels. This mind-set causes a refusal to even seriously consider what is probably the most serious threat to these mussels, and unless a "terminal illness" is properly diagnosed there is little chance of it being cured before the patient succumbs. As you may guess, if you have also been affected by this pervasive mind-set, I refer to the threat posed by the Asian Clam, Corbicula fluminea (Mueller).

Based on my training (M.Sc. (in limnology), 1958, Cornell; Ph.D. (in biology), 1960, Harvard); research responsibilities (curator and research scientist at the National Museum of Canada (1959-76) and the Smithsonian Institution (1977-81), President of ECOSEARCH since 1981); and 35 years of field experience in freshwater molluscan research (ecological and other studies) in all contiguous U.S. states, Alaska, all parts of Canada, etc.; I am firmly convinced that the recently-introduced exotic species Corbicula fluminea; which is now widespread throughout most of the Ohio-Mississippi Drainage System and elsewhere and which now constitutes most of the benthic biomass in many of those areas and a very large element of the biomass in most other parts of its range there; is a major cause (perhaps the major cause) of the present endangerment of most of our federally-listed unionid species.

I have held this belief for at least a decade. I have discussed it at national scientific meetings and with several Fish & Wildlife biologists and I have published several papers on it. I have even discussed it in contract reports for the Asheville office of the Fish & Wildlife Service. It is now a well-known point of view. Further, it is common knowledge that Corbicula now has huge populations in all of the areas where Obovaria retusa still survives. I therefore consider it

completely inexcusable that a recovery plan for Obovaria retusa could be promulgated which does not even mention Corbicula as of any possible significance at all.

It is scientifically indefensible to simply ignore the ideas of other scientists in a serious matter such as this. If one disagrees with another worker's well thought out theories, one must cite them and refute them, one must not pretend that they do not exist.


I believe that Corbicula has important effects at several levels in community food webs but that these effects vary in time and space and are dependent on the species composition of the community and on ambient physical and chemical factors. In some communities where freshwater mussels are abundant these effects may not be apparent for years, but in (say) 15 or 20 years after Corbicula has been introduced it may become apparent that there are no (or very few) young individual of those mussel species which had previously been rare or uncommon. I believe that this is because Corbicula, which have become abundant, have consumed so much of the sperm of those sparsely-distributed species that too few eggs are fertilized, and too few glochidia are produced, to perpetuate the species. Common species, which are closely packed together, will not suffer from reduced sperm transfer but rare species, which may have thousands of Corbicula interspersed between every male and female, will be disproportionately affected.

I have proposed, for another endangered species (Lampsilis "orbiculata" (=L. abrupta)), a possible solution for this problem which is simple and relatively inexpensive and which should facilitate periodic monitoring of the survival status of the species. That is to make aggregations of all surviving individuals, in areas of presumed good habitat and good fish diversity, to enhance fertilization. That proposal has been discussed with Mr. Paul Nickerson of the F&WL Northeastern Region and with other scientists there and activities related to that proposal, I hope, will commence soon. Further details are no doubt available from Mr. Nickerson.

I urge you to consider implementation of the policy of forming reproductive aggregation of Obovaria retusa as a last-ditch effort to perpetuate that species in the wild, and to seriously consider applying this procedure to all of the endangered mussels within your geographical area of responsibility.

I will be happy to respond to any comments you wish to make and/or to participate in any activities relating to this issue.

Sincerely yours,



Arthur H. Clarke, President