

**Fish/Mussels/Snails Workgroup Meeting**  
**August 10, 2006**  
**1 pm**

**Participants:**

Bill Kittrell – Virginia Department of Game and Inland Fisheries (VDGIF)  
John Copeland – VDGIF  
Wayne Alexander – Appalachian Power Company  
John Kauffman – VDGIF  
Brian Watson – VDGIF  
Mike Pinder – VDGIF  
John Smith – Federal Energy Regulatory Commission (FERC)  
Laura Walters – Friends of Claytor Lake (FOCL)  
Mary Rhodes – FOCL  
Larry Bandolin – Citizen  
Matthew Chan – Normandeau Associates  
Jeff Holland – U.S. Corps of Engineers  
Jay Wylie – Devine Tarbell and Associates (DTA)  
Ty Ziegler – DTA  
Kristi Miller - DTA  
Jon Magalski – American Electric Power  
Mike Spraker – FOCL  
Tom Shahady – Lynchburg College  
Teresa Rogers – Appalachian Power Company

Teresa Rogers began the afternoon by providing the purpose of the workgroup meeting, which includes:

- 1) Discuss the development of the study plan.
- 2) Identify specific modifications to proposed study plans.
- 3) Ensure there is a project nexus for any proposed changes that are to be incorporated.
- 4) Identify where more details on specific methodologies need to be included.
- 5) Come to agreement on proposed study plan / revisions.

Workgroups will stay together for the duration of relicensing. The workgroup will meet together to review study progress and meet at key decision points throughout the process. It is important that each group still provide their written comments on the proposed study plans directly to the FERC even if they participate in the workgroup meetings. (Deadline for comments: September 18, 2006.)

The Fish, Mussel and Snail Study objectives were reviewed:

Comment: Add to study objectives a crayfish survey – distributional survey. VDGIF has some crayfish data, fish diet data, information on methods – nets, traps, and information on what type of effort: VDGIF offered to provide methods, outline of effort, time surveys should be performed, number of sites, protocol, etc.

Comment: Add to study objectives a Hellbender survey. (VDGIF to provide information on methods, etc.) This salamander is a federal candidate for species of concern.

Comment: No additional sampling of fish is being proposed. Consultant will do literature review. Appalachian asked whether there is enough existing data. VDGIF has a good game species list but maybe not enough data on non-game species. The Jenkins data is old - quantitative information at 3 sites downstream of dam. It was asked if it necessary to get additional information – no use duplicating effort.

Comment: What are habitat associations for darters and minnows? Need assessment of how their habitat is impacted. Response: We can start with literature review and at any time we need to fill in data gaps, we can get back together to discuss.

Comment: Population monitoring doesn't exist at this time. Need to define how populations respond.

Comment: Summer stratification information will come from water quality study. This study will look at how this stratification impacts the fish.

Comment: There is another person knowledgeable about the fringed mountain snail. His name is Ken Hotopp (spelling?) Snail shells have been seen in sight of the dam, mainly within scour area of dam.

Comment: In regards to sampling protocol for green floater downstream, mussels on reservoir, and mussels during drawdown, Appalachian is envisioning 10 transects and repeat of the fall drawdown study. Transects will be perpendicular to shore to specified depth.

Comment: VDGIF will assess location of mussels during this year's drawdown. They will look at different scenarios such as 2' drawdowns rather than 5'. They will not duplicate last year's study. Appalachian won't be able to do the relicensing study until the following year (2007).

Comment: We want to make sure that mussel survey is done upstream of bridge.  
Response: Appalachian will consult with VDGIF on final locations for survey.

Comment: Appalachian needs input from VDGIF on green floater downstream of the dam. Response: There are definite sites where they have been found. VDGIF will provide a list of these sites. Then we can choose some additional areas based on their habitat. How many sites? VDGIF will provide an estimate to Appalachian. VDGIF will provide information on transects, species, presence, population status, demographics of population, any other species there, relative abundance and reproductive status.

Comment: Why study tributaries for green floater? How does the project affect the tributaries? Response: The populations are connected. Losing main stem populations

may effect tributary populations. Tributaries provide source of recolonization for main stem. If there is a flow problem in the main stem, it could impact tributary population.

Comment: Knowing fish host is important. Mottled sculpin was mentioned as a possible host for the green floater.

Comment: One approach would be to determine if there is an effect in mainstem, and if there is, then the tributaries can be looked at later if a nexus is determined.

Comment: Target areas where greenfloater has been encountered in the past. That already eliminates some tributaries, especially if there is no habitat.

Question: How does this knowledge of tributaries relate to altering flows from the dam?  
Response: If Appalachian operations are effecting main stem populations, then the state needs to know what other populations are available for recolonization. Greenfloaters are known to be in the tributaries. VDGIF will provide list of four tributaries. (There is some information in their original study request.)

Question: Is there enough information to select green floater as a target species for Instream Flow study?  
Response: VDGIF will provide habitat information they have.

Comment: Zooplankton – The issue is the loss of plankton from the lake and how that impacts the fishery (mainly striped bass.)

Comment: Desktop study of planktonic communities and how they relate to the “summer squeeze” phenomenon – existing data plus data from water quality study (temperature, DO, pH, conductance). John Copeland and Tom Shahady have about three years worth of data.

Comment: There is a high zooplankton population in reservoir. It has a strong impact on phytoplankton which impacts habitat. Around the state park, it is extremely productive. This is a key habitat zone for striped bass. Plant operations pull habitat out and fish may be impacted. It is suspected that the primary summer habitat zone for striped bass, the metalimnion, is being drawn through the dam. Middle area of lake with high oxygen is key habitat.

Comment: Need to look at parasites (copepod) and how it affects stripers. Response: Need a literature review of data that Tom Shadady has collected.

Comment: The missing information is how project operation effects stratifications and movement of key striped bass habitat through the reservoir.

Comment: There is an entrainment/impingement study where velocity data will be collected. Questions: How much work would it be to get velocity profiles in other areas of the reservoir? When operating, where does the units withdraw water from in the lake?

Comment: The most productive zone is the metalimnion. How do project operations impact that zone?

Question: Will there be temperature and DO data taken? Response: Yes, in water quality study – more data can be taken if needed.

Comment: VDGIF's goal is develop a trophy striper fishery.

Comment: Need nutrients information – See VDGIF initial study plan. This will supplement existing data.

Observation: VDGIF is seeing that stocked fish feed on zooplankton when they are initially stocked.

Comment: VDGIF would like to tow metalimnion for larval fish and other things in that area.

Comment: Appalachian can strike third bullet about incorporating the results into the entrainment / impingement study. This is not needed.

Question: It looks like water quality study will capture some of this information. Can it be expanded?

Comment: VDGIF wants to know response of nutrients on zooplankton and how it impacts fish. Question: What type of effort, frequency and depths would be involved? Response: Sampling chlorophyll a as surrogate for phytoplankton. Weekly sampling, middle of May, June, July and middle August. End of September would be outer limit. Hone in on the area of the metalimnion. Worst case would be during low flow.

Comment: Nutrients are key to understanding zooplankton.

Comment: There is a tool that will be developed that relates flow to reservoir elevations. We can look at how increased flows impact elevation.

Comment: May need to take velocity measurements at other locations other than just in front of the intakes. May need to take this into consideration when developing water quality study and entrainment/impingement.

Question: Do we know how far out the units pull water when generation is occurring?

Question: With on / off operation in summer, does water pull down from upper levels of the lake? Comment: Kilpatrick's study gives information on what depths are key.

Comment: At high flows there is a plunge line in the reservoir.

Question: Has EPRI done work on structure that can pull water from different areas of the lake? Response: Yes.

Comment: Corps projects have modified operations in the past during extremely high flows when pulling a current through the lake resulted in passing striped bass through the dam. Operation was modified to shut down operation during extreme events and gates were opened to pass water from the upper level.

Comment: There is not enough detail in sampling methods. Response: After today and when we get information from VDGIF, more details will be added to the study plan.

Meeting adjourned.