

EXHIBIT 17

bill floyd

From: Bill McLarney <billmclarney@gmail.com>
Sent: Wednesday, August 10, 2016 6:01 PM
To: wcbfloyd@ix.netcom.com
Cc: 'Jason Meador'
Subject: Chatooga

Dear Mr. Floyd,

I am following up on your recent conversation with my colleague Jason Meador at Mainspring Conservation Trust. I gather that he offered up the information that I have more experience than he in the Chattooga watershed. I suppose this is true, but my experience is mainly in doing brook trout surveys on tributary streams; my experience on the Chattooga mainstem in North Carolina is pretty much that of a tourist. I do bring 34 years of experience on western North Carolina streams in general, which I suppose is worth something.

Without actually seeing the situation, here is my take:

- **A general problem with fishery surveys is habitat selectivity.** Its not so often a question of seeking out the best habitat (unless the job requires collection of a certain number of a particular species, in which case anyone will look for the best habitat, same as a sport fisherman) but that **modern ichthyology has become the study of fish living near bridges.** This can result in selection of the best or the worst or just atypical habitat. There is logic in this – in the case of government agencies its taxpayer dollars and in general you want to be paying people to gather information, not take hikes. Again without seeing the site I would tend to believe that the data are skewed, and there are reasons for this.
- You are absolutely right that benthic macroinvertebrate samples are not a good tool for assessing aquatic habitat, except in the very most extreme cases (100% sedimentation, with no accessible rocks or woody debris). Its not what that science was developed for. Benthic sampling for other than purely academic purposes grew out of a concern for water quality (Can we drink it? Swim in it?), and it is an excellent tool for that purpose. It shouldn't surprise anyone that the upper Chatooga, with or without the problems you describe, has very good water quality. **The use of fish in biomonitoring grew out of the realization of the limitations of conventional benthic macroinvertebrate sampling in assessing habitat. Its theoretically possible to do a quantitative benthic macroinvertebrate sample that is so intensive as to get at habitat issues, but such procedures are surpassingly inefficient.**

In terms of biomonitoring, clearly what you need to answer your questions is fish monitoring. I would be surprised if you could

convince the Forest Service or the state to do the kind of monitoring that you need. Because access is difficult and costly, because it would require a lot of preliminary hiking to select a sample reach. But especially because even under the best conditions, headwater trout streams are characteristically unproductive. Again I'm talking from a near zero experiential basis, but whereas I can do 150 meters of a Little Tennessee valley stream and come up with a good inventory and assessment of biotic integrity, you might need miles of shocker surveys to be able to make a clear statement. There may be people who would be willing to be hired out to do that, but the cost could be scary. And even then, the "before" data may be inadequate.

I would say your best tack would be to 1) see if you can get Forest Service and Wildlife Commission personnel to take a hike with you while you point out the problems and 2) make the best use of the ORW regulations. **Good luck and feel free to quote my opinions so long as you make it clear that I haven't seen the situation.**

Sincerely,

Dr. William O. McLarney
Director, Stream Biomonitoring Program
Mainspring Conservation Trust