**Fatal Flaw Comments from Management Board Review**

**Research Strategy**

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| **Jurisdiction or Agency** | **Fatal Flaw Comment** |
| USGS | For key issues, fish mortality should be term in 2nd issue (not morality). |
| NOAA | pages one and two replace “morality” with “mortality”  Strategy should mention NOAA Mussel Watch Program in Chesapeake. See chapter 9 on this report for some background on the program <http://www.ccma.nos.noaa.gov/publications/nccoschesapeakebay.pdf> |
| PA | Two big issues remain for Pennsylvania (see below and other “Research Form” attachment in this email):   1. One is the annual reporting requirement which is just another burdensome reporting process we must do and it is not going to change much from year to year. Remediating toxics is going to be a long slow process. 2. In reference to the two bullets below, PA DEP is opposed to the model and does not want to support it:  * Development of a PCB mass balance model for the Bay with current data that will allow identification and relative importance of present sources to the Bay.   Linking the PCB mass balance model with a PCB food chain model for the Bay to determine target water quality criteria based on a desired goal for fish tissue residue in fish (e.g., Striped Bass?).  This can lead to the development of management approaches to reduce PCBs in the Bay watershed and will be driven by the goal of reduction of PCB levels in high value fish in the Bay. |
| **EDITORIAL COMMENTS:**  **Outcomes/baselines section:**  Page 2  Is the following sentence necessary since it does not concern toxics?   * ~~Localized kills have been linked to a sequence of events resulting in algal blooms and die-off of the algae depleting available oxygen.~~   The role of toxic contaminants in YOY bass die offs in the Susquehanna have not been established and there are other factors just as likely to be causing or contributing to the die offs. To make that clear, we suggest adding the following sentence (in blue) to the existing text.   * These observations together with the concurrent observations of intersex and other indicators of contaminant exposure suggest a role in toxic contaminants in immunosuppression. However, the role of these contaminants in relation to the young of year smallmouth die offs is only one of several potential causes still under investigation. |
| Factors Influencing section  Page 5 under “Factors Influencing Ability to Meet Goals” add the bullet below as an additional factor. We have been using the USGS lab but they are struggling to keep up with all the samples. We looked for private labs and only found three nationwide capable of the work and they don’t do some of the wastewater compounds.   * There are few laboratories nationwide that can perform many of the chemical analyses and these tests are expensive. Some tests still do not have accepted methods or low detection limits. |
| Current Efforts and Gaps  Under “current efforts and gaps” add text in blue to the existing bullet. A contaminant problem may only be a problem because it is a covariate with something like elevated pH or temperature. There are probably other places in the document where I would like to make this point but change it here and let it go at that.   * Documenting the extent of degraded fish conditions in the Potomac and Susquehanna watersheds and relation to toxic contaminants as well as any confounding factors that may make fish more susceptible to these contaminants.   Page 6 first paragraph. A - Add the following after “…… monitoring amphibian populations of adverse effects, as well as exploring the potential for EDCs to be affecting avian and reptile populations”   * In 2012, Pennsylvania initiated a large scale study of the Susquehanna River drainage in response to the decline of the smallmouth bass population that continues to this day. In addition to toxic contaminants, the study is looking at other water quality variables and assessing the overall health of several aquatic communities. This will help put the toxic contaminate issues in context with other water quality variables and the overall aquatic community   Page 9 In the list for “Some of the fish health research needs” Add another bullet and I would put it before the neonicotinoid pesticides bullet. Comparisons to control sites has proven to be very valuable in the Susquehanna studies especially since the no effect level for most of these compounds is not known.   * Establish a bay wide network of control sites where toxic contaminants are present at appreciable levels in the water column or sediment but the fish community has no or low incidence of disease. Comparison to controls is an essential step for eliminating contaminants that are not contributing to the disease pathways because they are present in appreciable amounts at both diseased and un-diseased sites. |
| Management Approaches  Page 12 at the top says “…..and begin development of a PCB mass balance model for the Bay that can help delineate and prioritize the current sources that need to be controlled.”   * DEP is opposed to the model and does not want to support it. |
| Monitoring Progress:  Monitoring priorities for DEP include collecting background data and maintaining surveillance in oil and gas drilling areas, the Susquehanna River study, and routine but the important and large effort to assess streams in all 86,000 miles of streams, not just the Susquehanna drainage. Any other monitoring will be at a smaller scale and will work only if it can be piggybacked onto the existing priorities. Fortunately, a good deal of toxic contaminant work is already being done in conjunction with the Susquehanna work and that will continue for at least the near future. However, we have our own goals and they are to determine if the river is attaining relative to 303(d) reporting and to get at the root of the smallmouth bass problem. The TCW can make suggestions as to what they feel is important but if those suggestions are not compatible with our focus, in my opinion, they probably will not be implemented. It is highly doubtful we will be able to expand our PCB monitoring much beyond where it is now. In addition, for all intents we are not detecting PCBs in the water column or sediment at our laboratory’s current detection limits so we would need to contract a laboratory with lower limits and that is expensive. At his time, PCBs are not a priority relative to solving the smallmouth bass mystery. |
| Assessing Progress  Annual reporting is not practical. Following a survey season, it takes well into the spring of the following year to review, quality assure, analyze, and report the data. By that time, staff are already out on the water starting the new collection season. We already have more than enough reporting to do each year.  As to the biennial report, it needs to be recognized progress will be slow. I’m really hopeful that updating the biennial report will not turn into a burdensome process and that criticism for slow progress be kept under control. |