

Response of Mr. Hagen to Questions dated June 28, 2011

Regarding the recommendations, I note that Technical Report #2 actually expressed nine recommendations on pages 140 to 141. Rather than separately addressing these nine, or the five extracted, I'd like to make a few general comments.

It is easy to agree that more monitoring studies should be done or that more data should be collected. The challenge is deciding how much of our scarce funding and manpower resources should be devoted to which studies collecting what data. It is often the case that new issues will arise and there is no data to assess the issue because the issue could not be anticipated. Data gaps are easy to recognize in hindsight. Existing programs collect data on a generic set of indicator parameters at what is seen to be an appropriate temporal and spatial distribution. Yes, we should periodically review and evaluate these programs to check if they provide necessary and sufficient data -- there is no point in monitoring for the sake of monitoring. If it is determined that there are unacceptable gaps that need to be filled, then programs can be developed and implemented to fill the gaps. It's complicated because decision makers also consider whether resources should instead be expended on programs addressing impacts which are even more unacceptable. And the judgment about what is "unacceptable" also needs to be made!

Impacts from PCDD/PCDF are historical now. Monitoring and management response to PCDD/PCDF should be done differently than for parameters like EDCs or other parameters that are still being discharged.

The recommendations actually consider two different levels of monitoring. It is relatively easier to understand environmental quality indicators at site-specific locations (e.g., water and sediment, as mentioned in Recommendation 2), but much more difficult to interpret effects on parameters mentioned in Recommendation 4 (e.g., morphology, physiology, mortality, viability). This is because fish move throughout their range and are exposed to a variety of different environments and it becomes uncertain which exposure causes what effects. Of course this is the main reason that environmental effects monitoring focuses on sedentary species -- the links are easier to interpret. So while I agree that these kinds of measures should be included, it might be more cost effective to use site-specific indicators, at least as a first approximation.

Some recommendations talk about coordination and databases. Again, this is easy to agree to. The issue is really that effective, user-friendly databases need to be developed, filled, and -- most importantly -- maintained, and this is not necessarily an easy thing to do at all. I agree that interagency coordination, and communication as well, can be improved. It can always be improved. Again, I think the issue is one of scarce resources. Needing to deal with the tasks that need to be dealt with on a priority basis, we often don't have the luxury of sitting back and thinking about better ways to coordinate or communicate with colleagues. Unfortunately.