Ferrrailo Background [from a FOMB 2002 Press Release]. See also FOMB Summer 2002 Newsletter [Page 3]
http://www.friendsofmerrymeetingbay.org/fombnew/pages/newsletter/mmnews/Summer2002.pdf

In 1997 Maine passed the most restrictive law on dioxin discharge in the country. At that time the DEP was tasked with finding a reliable basis on which to determine if paper mills still discharge the chemical the EPA deems "the most dangerous known to man." For this determination an above/below [AB] test using fish or a surrogate was mandated. If fish below the mill contained dioxin levels higher than found in fish at a reference site above the mill the implication would be that the dioxin continued to come from the mill.

The DEP has mostly relied on fish testing, despite problems such as variability between individuals [and species], fish movement [it cannot be said with certainty where the fish go and from where the contaminant came], and age in relation to contaminant [is the contaminant from current or historical sources]. In recent years DEP has also spent large amounts of money experimenting with Semi-Permeable Membrane Devices [SPMDs or "lipid bags"] as a possible surrogate for or supplement to fish. Problems with SPMDs include ease of contamination from other sources, limited sampling abilities [preference for aqueous portion of the water instead of sediment in solution where most of these contaminants are carried], and they do not show effects or end points as any organism could. When FOMB learned of and researched the use of caged mussels as biomonitors, they contacted the DEP to partner a study. Mussels as a bio-monitoring tool, have been used effectively on dioxin and PCB's [and many other contaminants] for 30 years.

FOMB with the services of Applied Biomonitoring
http://cybrary.fomb.org/pages/Applied%20Biomonitoring%20Biosketch.pdf , a contractor that has developed the industry standard for mussel biomonitoring [and has done extensive work for Environment Canada, multiple states and various companies], developed a caged mussel proposal to study PCBs and dioxins in the Kennebec River. The DEP however, chose to deploy the dioxin mussels along with SPMDs at the department's traditional fish testing sites 11 miles below the SAPPI pulp mill in Somerset and 13 miles above and to compare the three methodologies.

"What we didn't know when we were commissioned to do this study," stated Michael Salazar of Applied Biomonitoring, "is that the DEP would not deploy the mussels where we know they could be best be utilized, but put them too far up and down river to be useful. Barry Mower who administers the Surface Water Ambient Toxics [SWAT] program at the DEP is a self-confessed "fish man", it took an awful lot of arm twisting on the part of FOMB to get him to even fund this project as part of the 2000 SWAT program" added Salazar.

"When given the opportunity to deploy some "unused" mussels from the PCB project into the SAPPI discharge plume [where every non DEP person understood they should be] Mower declined" said Kathleen McGee director of the Maine Toxics Action Coalition [MTAC] [formerly known as the Coalition for a Dioxin Free Maine] that also supported the project.

In spite of the DEP's decision to ignore the expertise of the contractors the caged mussels performed admirably. Survival rate of the mussels was 99.7%. The mussel's detected a greater number [15] of dioxin types [called congeners] than SPMDs [12] or fish [5]. The percentage of mussel "dioxin hits" equal to or above the detection limit of testing methodologies [38.08%] surpassed both SPMDs [5.88%] and fish [19.41%].

FOMB submitted a follow up dioxin above/below proposal to the DEP for a gradient type experiment that would place mussel cages and SPMDs within the mill impoundment from as

close to the mill as possible stretching downstream in the discharge plume to the old deployment site. “Our proposal was rejected out of hand by the DEP who stated in their Dioxin Monitoring Report for 2000 that caged mussels were unsuccessful and that fish and SPMDs showed the most promise for the above/below test”, noted Ed Friedman chairman of FOMB. “They made this statement with no scientific evidence to back it up, before our report was submitted, and in fact with the actual science suggesting quite the opposite conclusion. The DEP and the University of Maine in Orono have over the last several years spent hundreds of thousands of dollars developing the use of fish and SPMDs for this program. Regretfully this appears to have influenced their objectivity” added Friedman.

Friedman likened the current method of SWAT funding awards to the “foxes guarding the henhouse”. “A number of the SWAT technical advisory group members stand to benefit directly or indirectly from funding awards and there is very little real discussion or dissent from Barry Mower’s recommendations. The situation screams for an independent review” said Friedman.

In his June 10, 2002 comments to the DEP on the draft Dioxin Monitoring Plan, Michael Barden of the Maine Pulp and Paper Association [MPPA] criticized the current DEP program pointing out that “The absence of an organized and transparent methodology is particularly alarming given the statutory deadline of December 31, 2002 for Maine’s Kraft mills to demonstrate they are not discharging dioxin to the receiving waters”. Barden went on to say that “use of surrogates [SPMDs, caged bivalves, caged fish] needs to be continued as well”.

Things in the PCB part of the study were less contentious but DEP follow-up still lacking. Caged mussels were deployed from above Augusta to below Swan Island in an effort to roughly locate a probable PCB hotspot in the river responsible for extremely high levels of PCBs in fish sampled from the Augusta area. All cages showed PCB hits, mostly in the 20-60 parts per billion [ppb] range. Two cages stood out however, one in midstream in South Augusta showed a level of 188 [ppb]. This cage was located just below a midstream outfall pipe of the Augusta Sanitary District, an outfall pipe that has been there since the 1950s.

The other hot cage [125ppb] was along the west shore in Farmingdale and upon investigation of the area via the “rails-to-trails” public access FOMB discovered flagrant environmental violations at the former Williams [now Ferraiolo] gravel asphalt plant. This plant has been operating at least since the 1940s and was found to have leaky oil pipes, oil in an overflow pond, pump present to pump out said pond into a creek that ran down to the river, 3 phase motors lying around, new transformers [what happened to the old ones?] and a saturated area around a diesel pump. These two hot sites have PCB levels far above what is considered “safe” for fish consumption.

“We notified the DEP and a “Notice of Violation” [NOV] has been issued. High PCB levels typically associated with the dumping of waste oil may reflect historical dumping at this site” said Friedman who while appreciating the DEP’s prompt response to this complaint said that to his knowledge nothing had been by done by the department to further investigate the hotter site below the treatment plant.