



Riverview: Bti, Black Fly and the Delaware River Experiment

For years industry and government assured us that DDT was safe. Today its use is banned. Its legacy? Severe and ongoing declines in bird species, including the bald eagle and osprey which it nearly wiped out of the Delaware basin, and fish advisories for species still contaminated with this human carcinogen.

Now we are being told by industry and government that use of *Bacillus thuringiensis israelensis* (B.t.i.) -- a bacterial larvicide used to control black fly populations -- is harmless to humans, and does not adversely impact non-target species or the food chain. The problem is that all of the research needed to support this broad conclusion has yet to be done, and in fact preliminary data indicates this statement is false. Rather than learn from past mistakes and wait for the answers before proceeding with widespread use of Bti, we are once again conducting our experiments as we go, in the environment.

A Brief History of Black Fly Spraying

Over the past two decades, Pennsylvanian's complaints about expanding black fly populations have increased -- people are annoyed by the swarming and biting they attribute solely to the black fly. As usual, the choice solution of humans for dealing with this perceived problem is "kill it."

In 1983, in response to citizen demands for black fly controls, the PA Department of Environmental Protection (PA DEP) began spraying Bti into a 20 mile test stretch in the Susquehanna. The goal was to kill the black fly larvae before they had a chance to hatch. Since then the program has expanded rapidly and at great expense to state taxpayers. In 1995 \$2.9 million was spent to spray 1,145 miles of waterway in 24 counties across the state. This year, \$690,000 will be spent to bring the "Black-fly Suppression Program" to 78 miles of the Delaware between Trenton and the Water Gap and to the Neshaminy Creek up to Doylestown.

How will the Bti be Applied?

Bti is sprayed directly into target waterways from helicopters flying 10 to 15 feet overhead. On average, waterways are sprayed every 10 to 14 days for a total of 8 to 12 times a Summer.

What about boaters and fishermen in the area? The public is not notified about when or where Bti spraying will occur. While visual over flights are used to ensure an area is clear before spraying, it is expected that people will occasionally get sprayed (as they have elsewhere). DEP's advice if you get hit; wash it off.

What are the Impacts of Bti?

In 1988, in response to pressure from other agencies, PA DEP commissioned a 5 year study by the Philadelphia Academy of Natural Sciences (Academy) of Bti's effects on non-target organisms and the aquatic food web. Due to budget problems, the study was suspended after two years. Four years later, in 1994, new funds were allocated to complete the study. While PA DEP continually points to the Academy and other DEP studies to support claims that the Bti spraying program has no harmful effects beyond the black fly population, other experts disagree. Academy Study protocols have been questioned -- for example, the study considered impacts to non-target species and the food chain after only a single spray event when in reality spraying occurs up to 14 times each spraying season. Experts also have questioned the interpretations ascribed to the study's preliminary results. And finally, both the PA Fish and Boat Comm'n (PAFB&C) and US Fish and Wildlife Service (USF&WS) believe that the Academy's preliminary data reveals that Bti in fact does have adverse impacts on non-target species, both invertebrates and fish species. These adverse impacts take the form of either direct toxic effects, secondary effects on the food chain by reducing the quantity, quality and make-up of invertebrates available for consumption, or a combination of the two. As a result, both the PAFB&C and USF&WS have called on PA DEP to limit expansion of their spraying program until all necessary research is complete.

The Academy's Stroud Water Research Center (which is conducting the DEP study) and other experts believe that more research is needed to conclusively determine the effects of a Bti black fly spraying program on other species and the food-web.

What does Riverkeeper Think?

Clearly, additional research is needed to ensure that a black-fly spraying program along the Delaware will not adversely impact other species and the overall health of our river and stream systems. While Riverkeeper respects PA DEP's statements that it is committed to doing ongoing research into the potential harmful impacts of Bti, we believe it is critical that this research take place before a Delaware River spraying program is initiated. It is time to stop using our environment and ourselves as a testing ground.