



# BEYOND PESTICIDES

701 E Street, SE ■ Washington DC 20003  
202-543-5450 phone ■ 202-543-4791 fax  
info@beyondpesticides.org ■ www.beyondpesticides.org

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Environmental Protection Agency  
Public Information and Records Integrity Branch (7502C)  
Office of Pesticide Programs  
1200 Pennsylvania Ave., NW  
Washington, DC 20460-0001

**RE: Docket ID No. OPP-2004-0018**

We appreciate the opportunity to comment on the EPA's "Labeling Statements on Products Used for Mosquito Control." These comments are submitted on behalf of Beyond Pesticides and its national membership and the groups signed below. We write to respectfully request the EPA to reconsider the recommendations set forth in the above-referenced document. The comments put forth in this letter illustrate what we consider to be compelling reasons why this proposal should be dropped.

## **Introduction**

We believe that most of the recommendations set forth in the agency's proposal will result in adverse effects on public health and the environment. The proposed recommendations will also create the unintended consequence of an overall increase in ULV spraying without a proper assessment of the effects of that increase in spraying.

The agency identifies seven aspects of labeling that it claims are aimed at providing consistency rather than differences among labels. However, making labels consistent for the purpose of convenience for the users and at the cost of known and unknown hazards to wildlife is unacceptable. The precautions on each label are there for a distinct purpose and due to distinct data. As the chemicals have different known and unknown effects on human health and wildlife, we believe that it is only appropriate for the agency to change the label after a complete toxicity assessment is performed as the active ingredient comes up for reregistration review. Neither the public nor the environment is well served or better protected by the agency removing use restrictions or wildlife protections on adulticides prior to an assessment of the new usage patterns.

Introducing these kinds of changes to the label will push mosquito control in the wrong direction and unintentionally inspire a new wave of reliance on adulticiding. This comes at a crucial time when many mosquito managers are moving toward more responsible management with better surveillance, prevention and larval control. The agency must be made aware that there is currently a crisis of misuse and controversial adulticidal

spraying taking place across the country and should not assume as it does that IPM principles are generally being utilized in determining treatment schedules. Unlike other professions, methods of mosquito control have essentially no oversight in the U.S. and no document in particular that can be highlighted as the guidebook of best practices for safe and effective mosquito control.<sup>1</sup> Instead, what we have witnessed since the onset of West Nile virus in 1999 is a very wide range of practices, some extremely controversial, of the quasi-governmental vector control departments.

Beyond Pesticides and its partners receive numerous reports of practices that include spraying in winds greater than 10mph, allowing children to follow behind fogging trucks, refusing to engage community leaders or respect the desires of residents to opt-out of spray programs, establishing regular spray schedules without proper vector surveillance, environmentally destructive wetland and water management and other irresponsible practices. To date the only real checks and balances against such practices are community voices. The proposed label changes will further mute those voices, could bolster bad practices, and could likely result in a new wave of litigation.<sup>2</sup>

The document purports that spraying protects public health “while ensuring that use of these products will not pose unreasonable risks to the environment.” Yet, neither statement can be substantiated by any credible evidence. As far as we understand, the agency has not fulfilled its legal obligation to fully evaluate the impacts of new use patterns on human health and the environment and in fact has excluded such uses from its cumulative risk assessments for organophosphates – many of which, malathion, naled, carbaryl, chlorpyrifos, and others, include mosquito control.<sup>3</sup> In regards to public health being protected by spraying adulticides for West Nile virus (WNV), there is no credible evidence that adulticides are effective in lowering the incidence of WNV and therefore cannot be said to be protecting public health.<sup>4</sup> In fact, there are numerous reports of cities that did not adulticide and had lower attack rates (serious illness transmission) per population rate than their neighbors that did adulticide. See Appendix for some of those reports.

The agency claims that it “supports IPM approaches and believes that the use of mosquito adulticides should be consistent with IPM principles” and presumes that such practices are *generally* utilized. Wishing that IPM principles will be followed unfortunately will not make it so. According to the Centers for Disease Control and Prevention (CDC) 2003

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<sup>1</sup> Guidelines provided by the Centers for Disease Control and Prevention in its Revised Guidelines for Surveillance, Prevention, and Control come the closest to set of national guidelines and are helpful but are still not as complete as they could be for vector managers – particularly on best practices for larval control.

<sup>2</sup> Litigation against label violations under the Clean Water Act may likely challenge EPA’s label changes. Other lawsuits against adulticidal practices could also be spurred as found in Canada. (“West Nile Suits Can Proceed, Lawyer says,” The Globe and Mail. July 19, 2004.)

<sup>3</sup> Revised OP Cumulative Risk Assessment, 2002.

<sup>4</sup> Roger Nasci, CDC research entomologist and President of AMCA, before the National Association of County and City Health Officials, July 2004. “We know that we can document a reduction of mosquitoes through mosquito management,” but there is conflicting evidence on whether mosquito control programs reduce human cases of WNV,” he said. Center for Infectious Disease Research & Policy. CIDRAP News Jul 15, 2004.

WNV Guidelines, “IPM is based on an understanding of the underlying biology of the transmission system, and utilizes regular monitoring to determine if and when interventions are needed to keep pest numbers below levels at which intolerable levels of damage, annoyance, or disease occur. IPM-based systems employ a variety of physical, mechanical, cultural, biological and educational measures, singly or in appropriate combination, to attain the desired pest population control.”<sup>5</sup> An ideal label should suggest that the applicant use other least-toxic, preventative and long-term methods of control prior to applying the adulticide. However, if inspiring IPM principles is indeed a goal, then at the very least the label should advise that mosquito surveillance be performed prior to and after application to ensure that the measures taken are necessary.

Although IPM is recognized as an acceptable method, it is not one of the changes suggested by the document. This section ends with the statement that the proposed changes will “assist users in making effective mosquito control applications with minimal risks to the environment.” How is the removal of restrictions on adulticides with fewer or no protections for wildlife making mosquito control more effective with minimal risk to the environment? Mosquito control can only be made more effective by using well-recognized, effective IPM techniques supported by the professional entomological community with the pursuit of minimal risk to health and environment. Aside from NOT being non- or least-toxic, we do not consider adulticides to be in the category of “minimal risk to health and environment” since they are used in a broadcast manner that results in pesticide drift and hitting non-target species.

### **Recommendation 1: Applicators**

We applaud the agency for taking more restrictive measures than an across-the-board change to RUP status by limiting use of adulticides to “federal, state, tribal, or local government officials responsible for public health or vector control.” However, we believe that the intent of the restriction is operationally weakened by the final clause: “[O]r by persons under their direct supervision,” which allows for the historical *Federal Insecticide, Fungicide, Rodenticide Act* (FIFRA) loophole that essentially results in the misuse of pesticides, poisonings or irresponsible practices in the field.

### **Recommendation 2: Terrestrial Use**

We understand that the agency may want to clarify its intentions based on its perspective that, “Mosquito control directions... were...presumed to have their own set of aquatic precautionary statements. This point is not clear on labels themselves; it is only discussed in EPA’s Label Review Manual.”<sup>6</sup> However, our support for this recommendation is contingent upon the precautions actually assessed and put forth by the agency for protection of aquatic species. Such precautionary assessments as put forth in this proposal are highly insufficient (as they basically call for a harmonization without proper or real assessment of adverse affects to environment). The actual recommendation states “The

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<sup>5</sup> Centers for Disease Control and Prevention. 2003. *Guidelines for Surveillance, Prevention, and Control*.

<sup>6</sup> EPA. 2001. Region II Inter-Regional Mosquito Control Conference Issue III, Recommendation 3 available at <http://www.epa.gov/oppfead1/cb/ppdc/2003/mosquitocont.htm>.

standard terrestrial use water hazard statement should not appear on product containers labeled solely for mosquito control.” This recommendation would simply remove an important precaution from the label without any real justification or effects analysis.

### **Recommendation 3: Waterways**

The recommendation put forth on waterways is potentially the most damaging to the environment and public health. Different chemicals used in spraying have different instructions and precautions with regards to waterways for a distinct purpose. Rather than changing the restrictions to the lowest common denominator in order to make more uniform labels, protections should be ramped upwards for maximum protection. Using the example provided, since permethrin labels utilize a restriction of 100 foot buffer zones of waterways, then all products shown to be toxic to fish and other aquatic wildlife should have this buffer zone, particularly since the agency already recognizes the problem of pesticide drift. The fact that the buffer zones are not mentioned on other labels such as malathion and resmethrin means that the agency has failed to account for drift in those cases. If there is a dispute about toxicity levels of ULV permethrin sprays then that should be taken up separately and not be used as an opportunity to “harmonize” labels to the lowest common denominator.

In the United States, wetlands such as marshes and swamps are considered essential components of the natural system and the “filters” of our entire aquatic ecosystem. They harbor groups of species that play a fundamental and imperative role in feeding the rest of the environment. In fact, the disappearance of wetlands has so alarmed biologists that Congress has instituted a national “no net loss” requirement for land management. As Montana’s Department of Public Health points out, “Maintaining the natural functions of wetlands and restoring impaired wetlands to natural healthy fully functioning wetlands should be of vital concern to the public and mosquito control agencies.”<sup>7</sup>

Wetlands, marshes, rivers, streams and even man-made drainage systems can provide habitat to a vast array of wildlife, including amphibians, mammals, birds and beneficial insects that are susceptible to the effects of pesticides. Current research shows that the vector mosquitoes for West Nile virus are more likely to inhabit containers, puddles and poorly managed wet areas than healthy wetlands, which are generally not thought to be a source of mosquitoes that pose threats to public health. Natural wetlands and well maintained man-made water drainage systems have natural controls on mosquito populations such as constant water flow and natural mosquito predators.<sup>8</sup> Broad-spectrum adulticides can kill a number of non-target insects, including beneficial species such as mosquito predators like dragonflies, damselflies, and beetles.<sup>9</sup> Dragonflies take from several weeks up to a year, depending on the species, to complete their life cycle, while mosquitoes take just a few weeks. This proposal will likely impel consistent or excessive

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<sup>7</sup> MT Dept. of Health, Wetlands, <http://www.dphhs.state.mt.us/> (viewed 10/5/03)

<sup>8</sup> National Wildlife Federation, WNV Factsheet.

<http://www.nwf.org/backyardwildlifehabitat/pdfs/westnilevirus.pdf> (viewed July 3, 2004)

<sup>9</sup> Howard, J. et al. 1997. “Impact of Naled (Dibrom 14) on the Mosquito Vectors of Eastern Equine Encephalitis Virus.” *Journal of the American Mosquito Control Association* 13(4): 315-325.

adulticidal spraying which could result in a serious loss of natural controls and hence, an increase in local mosquito populations. It may also support a treadmill effect of reliance on adulticides.

Changing the label to allow spraying of adulticides in and over waterways conflicts with adherence to the *Clean Water Act (CWA)*. We believe that FIFRA and CWA are complementary laws with fundamentally different standards and methods in determining whether a pesticide will have unreasonable adverse effects on the environment and/or human health.

There are two prime examples for why the CWA should be enacted with regards to adulticides. One example is that the label for malathion states that it is a Class 9, Marine Pollutant under UN 3082, PG III. Marine pollutants are regulated by CWA and the NPDES system. The second is that the agency currently has insufficient information to determine unreasonable adverse effects to human health and the environment of synthetic pyrethroids and will not have sufficient information until this class goes through reregistration review in 2006. Currently, there are an abundant number of studies that indicate synthetic pyrethroids are endocrine disruptors that can harm both humans and wildlife.<sup>10</sup> Most argue that it's the dose that makes the poison and therefore ULVs pose no hazard, but for endocrine mimickers, it's timing not the dose that makes the poison and at exceptionally low levels.

Further, the EPA has only evaluated the effect of adulticides on surface water, not on sediment. A recent U.C. Berkeley study has shown that synthetic pyrethroids are not breaking down but instead accumulating in creek sediments to levels that are toxic to freshwater bottom dwellers. This study, supplied to the agency by Beyond Pesticides on June 16, 2004, has broad implications for the health and sustainability of freshwater ecosystems and should be cause alone to prevent any change in labels that would have the ultimate result of inducing more broadcast spraying of synthetic pyrethroids.<sup>11</sup>

Lastly on the point of FIFRA vs. CWA, it is important to note that adulticidal use should be subject to approval of local Fish and Wildlife Services (FWS) prior to any scheduled spray in the vicinity of a waterway in order for that agency to properly fulfill its mandate to monitor and protect our waterways. Changing the label to get around this issue of FIFRA or CWA is highly improper. By allowing mosquito vector control departments to spray without any oversight from FWS sets up yet another obstacle of communication between government agencies.

- The agency attempts to justify recommendation 3 by stating that “an ‘over water’ prohibition may sometimes interfere unnecessarily with the timely treatment of infested areas adjacent to water if, for example, an area happens to be downwind of a water body.”

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<sup>10</sup> Environmental Health Perspectives, March 1999. Vol. 107, no. 3, pages 173-177.

<sup>11</sup> Environ. Sci. & Tech. 2004. "Distribution and Toxicity of Sediment-Associated Pesticides in Agriculture-Dominated Water Bodies of California's Central Valley," Weston, D. P., et al.

Essentially this means that an applicator can spray over a waterway if he/she is trying to hit a target downwind of that area. We believe that mosquito control should be targeted and not rely on drift. This practice is ineffective, inappropriate, and unnecessarily harmful to human health and waterways.

- “[T]he public interest would generally be better served in terms of health protection if ULV mosquito control pesticides can be applied in a manner consistent with commonly accepted vector control practices, rather than under widely varying limits on some products.”

Again, as mentioned in the introduction of these comments, relying on “commonly accepted vector control practices,” a rather arbitrary reference given that such practices vary widely, is simply irresponsible.

- “[I]t is preferable to state that a product is ‘toxic to fish, crustaceans, and oysters’, if data show that, rather than only stating the generalization ‘toxic to aquatic organisms’ used on some current labels.”

The point of a precaution for all aquatic organisms is due not only to the likely case that it is true, but also to the fact that not all organisms undergo toxicity testing. This is an issue long dealt with by the agency and we do not understand why now it would be appropriate to only limit toxicity data to the exact species tested. Research is presumptive upon similarities between aquatic species. It is absurd to suggest that if a chemical is found to be highly toxic to a certain species then we cannot precaution its toxicity for other similar species simply because we have not tested those additional species. Unless the agency specifically plans to fund further research into the toxicity of these chemicals on all aquatic animals, those concerned about the health of these ecosystems can never support this recommendation.

#### **Recommendation 4: *Advisable to Consult***

Here the agency states that it “does not believe it is appropriate for the label to create an obligation for applicators to consult state/tribal pesticide agencies...” The document makes the case that since there isn’t uniformity in what state agency should be contacted by the applicator, there should not be any required contact at all. The goal of the Draft Registration is to bring uniformity to the rules by making them similar, not by rebuking them all together. This is illogical and defies the building of coordinated governmental efforts in our state and federal system. Instead the recommendation states that it is “*advisable*” to consult with the state or tribal agency. Again, if the agency clearly recognizes the benefit of having such checks and balances that better maintain and monitor our environment by advising consultation, why not make it mandatory? Again, we believe that this removes all accountability for the applicators actions and sets up a

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<sup>12</sup> The study, "Distribution and Toxicity of Sediment-Associated Pesticides in Agriculture-Dominated Water Bodies of California's Central Valley," Weston, D. P.; You, J. C.; Lydy, M. J.; Environ. Sci. Technol.

disaster of fish, bird, amphibian, and other kills due to uncoordinated, unsupervised and elevated mosquito spraying. It also may conflict with the CWA.

### **Recommendation 5: Droplet size**

One of the major problems and worries for mosquito management is that of mosquito resistance to pesticides by receiving less than lethal doses. A 2003 study found that mosquitoes carrying West Nile virus and malaria developed resistance to organophosphate and carbamate insecticides as a result of a single genetic mutation.<sup>13</sup> Therefore we agree for the most part with this recommendation, however, given that resistance is a problem and a primary concern, we feel that the manufacturer should set the percentage and that there should not be any flexibility in changing that percentage. This would eliminate the problem of applicators applying sub-lethal dosages that cause resistance. The problem of companies overestimating the percentage of active ingredient necessary per droplet in order to increase sales should be dealt with separately by the agency with a request for proper efficacy studies. In timely fashion, a recent article just reported that "The Harris County Health Department says it's spraying a higher concentration [of adulticides] in some areas because mosquitoes have become resistant."<sup>14</sup>

### **Recommendation 6: Bees and Other Pollinators**

This recommendation argues, "in some circumstances, however, public health protection may require daylight treatments which could include areas visited by bees." First, the application of adulticides during the day is highly ineffective as most disease-carrying vector mosquitoes do not fly during the day and adulticides aim to hit flying populations. The Asian tiger mosquito, which may be the single exception to this general rule, must be dealt with separately by mosquito control, i.e. through larviciding and special tracking. Again, this change will simply open the use of adulticides up to abuse. Second, the risk to humans is greater during the day since more humans are out and may be in mosquito prone areas.

Current restrictions meant to protect bees and other pollinators barely keep adulticides from being sprayed (and bees killed) during the day. Removing all protections will be devastating to beekeepers, pollinator groups and the honey industry. According to beekeepers, the past 30 years have seen a dramatic decrease and shortage in some places of domestic honeybees, wild honeybees, and many other wild bees, such as bumblebees, leafcutter bees and other solitary bees. Butterfly populations are also reported to be in decline. The American Honey Producers Association reports fewer beehives in America today than in almost 50 years. Much of this is from pesticide use and misuse. This past spring, Florida expected shortages of pollinators for its watermelon and citrus crops and California for its almond crops, according to the Orlando Sentinel, March 15, 2004. The result has reverberations throughout the economy with smaller retail produce that can

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<sup>13</sup> Weill, M., et al. 2003. "Insecticide Resistance in Mosquito Vectors." *Nature* 423(6936): 136-137.

<sup>14</sup> News24 Houston. July 15, 2004,

[http://www.news24houston.com/content/top\\_stories/default.asp?ArID=32550](http://www.news24houston.com/content/top_stories/default.asp?ArID=32550)

cost four times as much. Pollinators are a vital component of the vegetation cycle that also maintains healthy habitat for wildlife and endangered species.

The label change would “allow public health considerations to override a strict interpretation of bee precaution language,” even though there is no proof that adulticides result in greater public health. Further, the agency makes no attempt, perhaps rightly, to define public health consideration, imminent threat or emergency. Many municipalities consider nuisance mosquitoes a public health threat – an incredibly deficient reason to override protections of pollinators. The overall result of this recommendation is arbitrary language that gives subjective precedence to the use of hazardous chemicals over the protection of pollinators without any oversight or discussion. The recommendation has the further audacity to allow for protections to be overridden by “local vector control agencies” that may have a very different mandate (i.e. reduce mosquito counts) than the wider spectrum of protecting public health or the environment.

Ironically, the agency used Hurricane Floyd in Florida as an example of why we need to override the law on the label of daylight applications. It should be aptly noted however that adulticides are only a stop-gap or quick fix measure. After Hurricane Floyd caused a surge in mosquito populations, state officials took bite counts before and after widespread aerial spraying of adulticides, and found that mosquito populations surged back to pre-spray levels within three days of the treatment.<sup>15</sup> This lends serious question as to the efficacy and appropriateness of adulticides to protect public health in the first place rather than more effective means of mosquito control. (This issue is addressed further under Efficacy of Adulticides.)

### **Recommendation 7: Timing and Frequency of Applications**

The proposed change is to have a maximum number of treatments on the label with a maximum frequency. A concern is that stated maximum number of treatments may be viewed as a recommended number in place of actual vector mosquito population counts or local environmental indications that would otherwise reduce or provide guidance on usage frequencies. People often interpret maximum dosages as the proper or only dosage and presume that the “maximum” frequency will not be harmful to public health or the environment. Yet, according to the agency’s own proposal, “comprehensive reassessments of some of the mosquito control pesticides, as required by FIFRA and FFDCa, have yet to be completed.” This means that due to a lack of research necessary to suggest a maximum dose or frequency, the agency would actually be in violation of its mandate to assess adverse affects to human health and environment.

The truth is that there is no set minimum or maximum timing or frequency and should not be one even in the case of “imminent threat to the public.” If IPM is properly pursued, then adulticiding should rarely if ever be necessary, especially given its questionable efficacy and known hazards.

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<sup>15</sup> News and Observer. 1996. State alters mosquito plans. September 21, 1996.



## **Endangered Species**

It is indisputable that each year pesticides harm many thousands of non-target plants and animals, including threatened and endangered species, and thus each and every decision under FIFRA has the potential to have significant environmental impacts. The proposed changes in the labeling fail to account for the fact that a vast majority of the actions under FIFRA will be allowed to proceed without first undergoing the appropriate review by the expert wildlife agencies, as required by the *Endangered Species Act*.

Pesticides containing synthetic pyrethroids are extremely toxic to mosquitoes, but they are also (if not equally) toxic to lobsters, crabs, shrimp, nymphs and zooplankton (with LC<sub>50</sub> values less than 1.0ppm) and probably more species. Such pesticides are also deadly to fish, tadpoles, and frogs – some of which may be endangered or threatened or otherwise listed species and all of which reside in the same aquatic environments that may harbor mosquitoes.

## **Threat Assessment**

At the heart of the issue of adulticide spraying is considering whether or not the risks to public health and the environment from spraying is greater than the risk to public health without spraying. Much of that decision rests on the tolerance level of the individual community to both mosquito-borne disease and pesticide exposure. Ultimately, the use of adulticides, unlike the use of larvicides or source reduction, is a socio-political issue and not truly one of public health prevention. A myriad of municipalities across the country use mosquito nuisance spraying as part of their public health budgets and/or consider it a public health measure. The reason given is usually because mosquitoes *can* carry disease (regardless if they are carrying a disease or if the mosquitoes being targeted are known vectors of any given illness). Essentially we understand that mosquito control may be an economic benefit for many communities but again, we believe that the pros and cons must be weighed properly and with all information before action is taken. If the labels do not reflect the cons of adulticides, let alone the hazards to human health, then the cost/benefit analysis is erroneously swayed against restrained use of adulticides.

## **Should WNV Override Protections?**

The issue of West Nile virus being an imminent public health threat is overstated. As Los Angeles County health officials have pointed out, because WNV is not a contagious disease, it does not have the same urgent public health risk as diseases such as hepatitis.<sup>16</sup> According to the CDC, less than one percent of those infected with WNV will develop severe illness with the vast majority of infected people (about 80%) showing no symptoms at all. Roughly 20% may experience mild flu-like symptoms.<sup>18</sup> Brian Rogers,

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<sup>16</sup> Daily News.com. *City, county roles vary in virus alerts, control*. July 17, 2004

<sup>17</sup> Center for Disease Control. 2004. WNV Factsheet. What you need to know. [http://www.cdc.gov/ncidod/dvbid/westnile/wnv\\_factSheet.htm](http://www.cdc.gov/ncidod/dvbid/westnile/wnv_factSheet.htm) (July 2, 2004)

<sup>18</sup> Center for Disease Control. 2004. WNV Factsheet. What you need to know. [http://www.cdc.gov/ncidod/dvbid/westnile/wnv\\_factSheet.htm](http://www.cdc.gov/ncidod/dvbid/westnile/wnv_factSheet.htm) (July 2, 2004)

D.O., MPH, of the City of Fort Worth Health Authority states, “The risk of becoming seriously ill and dying from West Nile is extremely minimal. Fewer than 1 percent of mosquitoes in areas where the virus has been found actually carry the virus.”<sup>19</sup>

U.S. Fish and Wildlife Services states, “Contrary to media descriptions of ‘the deadly West Nile virus,’ [it] is rarely fatal in humans. Less than one percent of people who acquire the disease will experience severe illness. Within this small proportion, the fatality rate is about 3-15%.”<sup>20</sup> Risk for severe illness is most closely correlated with increasing age and a weakened immune system. From 2001 to 2003 there was a drop in the average age of WNV cases (which include flu-like symptoms), however the median age of fatal cases has not dropped. The rise in cases in younger people is probably due to the heightened detection of milder WNV cases.<sup>21,22</sup> Those populations, such as the elderly, who are vulnerable to serious illness from WNV are also vulnerable to effects of pesticides. WNV is in general a mild disease and only becomes serious encephalitis if the virus can cross the blood-brain barrier. Animal studies have shown pyrethroid, organophosphate, and organochlorine pesticides are among the agents that can impair the blood-brain barrier, which in turn can make a person more susceptible to WNV.<sup>23</sup> In addition to the elderly, a recent article in *Pediatrics* has highlighted the vulnerabilities of infants and children to pesticides in low-dose exposures via “leaky” blood brain barriers.<sup>24</sup> Furthermore, a person who has been infected with WNV may have life-long immunity even if they show no symptoms.<sup>25</sup>

### **Efficacy of Adulticiding**

It is also important to recognize the efficacy of adulticide spraying in the control of mosquitoes. According to the CDC, spraying adulticides is usually the least efficient mosquito control technique.<sup>26</sup> Adulticiding programs spray pesticides indiscriminately and do not get at the mosquitoes until they have matured. They also do not restrict, control, or prevent mosquitoes from carrying WNV or continuing to breed. Close to 99.9% of sprayed chemicals go off into the environment where they can have detrimental effects on public health and ecosystems, leaving 0.10% to actually hit the target pest.<sup>27</sup>

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<sup>19</sup> Lunsford, Jessica. 2003. The truth about west nile virus. *Pesticides and You* 23 (1): 9-10.

<sup>20</sup> US Fish and Wildlife Service. 2003. Division of Environmental Quality. Pesticide Issues: Fighting the west nile virus- Prevention works best. <http://contaminants.fws.gov/Issues/westnile.cfm>

<sup>21</sup> CNN.com/HEALTH. August 16, 2002. CDC predicts West Nile upswing. <http://www.cnn.com/2002/HEALTH/08/15/cdc.west.nile/> (viewed July 2, 2004)

<sup>22</sup> Hayes, Ned. 2004. CDC Division of Vector-Borne Infectious Diseases. “Summary of West Nile Virus Activity in the United States, 2003.”

[http://www.cdc.gov/ncidod/dvbid/westnile/conf/pdf/Hayes\\_1\\_04.pdf](http://www.cdc.gov/ncidod/dvbid/westnile/conf/pdf/Hayes_1_04.pdf) (viewed July 2, 2004)

<sup>23</sup> Gupta, A. et al. 1999. Effect of pyrethroid-based liquid mosquito repellent inhalation on the blood-brain barrier function and oxidative damage in selected organs of developing rats. *J Appl. Toxicol.* 19:67-72.

<sup>24</sup> Weiss, Bernard. et al. “Pesticides.” *Pediatrics* Vol. 113 No. 4 April 2004, pp. 1030-1036

<sup>25</sup> West Nile Virus Q and A on Survey. New York City Department of Health. March 21, 2000.

<http://www.ci.nyc.ny.us/html/doh/html/wnv/wnvqa.html>. (viewed July 1, 2004)

<sup>26</sup> Centers for Disease Control and Prevention. 2001. Revised Guidelines for Surveillance, Prevention, and Control. Atlanta, GA.

<sup>27</sup> Pimentel, D. 1995. “Amounts of Pesticides Reaching Target Pests: Environmental Impacts and Ethics.” *Journal of Agricultural and Environmental Ethics* 8(1):17-29.

The problem Beyond Pesticides and its partners observe is that many municipalities end up relying on adulticides as their primary tool for mosquito management, which is known as the least effective option and which results in overall poor control and pesticide contamination.

## **Conclusion**

Our analysis of the Pesticide Draft Registration Notice reveals that most of the recommendations set forth would be detrimental to public health and the environment and reverse much of the progress made toward better, more effective mosquito management which avoids a heavy reliance on adult mosquito control. The label changes proposed would most likely lead to more adulticide spraying without a proper risk assessment of the effects of this increase in spraying. We believe that such a change is unfair to the public and we request that this proposal be dropped.

Sincerely,

### **Beyond Pesticides**

Special Projects Director  
701 E Street, SE  
Washington, DC 20003  
Tel. 202-543-5450 ext. 21  
[www.beyondpesticides.org/main.html](http://www.beyondpesticides.org/main.html)

### **Agricultural Resources Center**

Fawn Pattison  
206 New Bern Place  
Raleigh, NC 27601  
Tel. 919-833-5333  
<http://www.ibiblio.org/arc/>

### **Alaska Community Action on Toxics**

Pesticide Right-to-Know Program  
Michelle Wilson, Coordinator  
505 West Northern Lights Blvd 205  
Anchorage, Alaska 99503  
Tel. (907) 222-7714

### **BioControl Network**

5116 Williamsburg Rd  
Brentwood, TN 37027  
Tel: (615) 370-4301

### **B.U.R.N.T./No Spray Nashville**

PO Box 128555  
Nashville, TN 37212  
Tel. 615-377-3649  
[www.burnt-tn.org](http://www.burnt-tn.org)

### **Californians for Alternatives to Toxics**

Patty Clary, Director  
315 P Street  
Eureka, CA 95501  
Tel. 707-445-5100  
<http://www.alternatives2toxics.org>

### **EarthMatters Tennessee**

1814 Lillian Street  
Nashville, TN 37206  
(615) 252-6953

**Farmworker Justice Fund Inc.**  
Shelley Davis  
1010 Vermont Ave NW Suite 915  
Washington, DC 20005  
Tel. 202-783-2628  
[www.fwjjustice.org](http://www.fwjjustice.org)

**Nashville Greenlands**  
2407 Heiman St  
Nashville TN 37208-2415  
Tel. 615-322-9523

**National Center for Environmental Health Strategies**  
Mary Lamielle  
1100 Rural Avenue  
Voorhees, NJ 08043  
Tel. 856-429-5358  
[www.ncehs.org](http://www.ncehs.org)

**Northwest Coalition for Alternatives to Pesticides**  
Aimee Code, MS  
Water Quality Coordinator  
P.O. Box 1393  
Eugene, OR 97440-1393  
Tel. (541) 344-5044, ext. 27

**New Jersey Environmental Federation**  
223 Park Ave  
Marlton, NJ 08053  
856-767-1110  
Tel. (609) 530-1515  
<http://www.cleanwateraction.org/njef>

**New York Public Interest Research Group**  
Laura Haight  
Senior Environmental Associate  
107 Washington Avenue  
Albany, NY 12210  
Tel. (518) 436-0876, ext. 258

**Pennsylvania Clean Water Action**  
Bob Wendelgass  
33 East Abington Av.  
Philadelphia, PA 19118  
Tel. 215-640-8800 x204  
[www.cleanwateraction.org/pa/index.htm](http://www.cleanwateraction.org/pa/index.htm)

**Safer Pest Control Project**  
John Q. Knight  
25 E. Washington, Suite 1515  
Chicago, IL 60602  
Tel. 312-641-5575  
[www.spcpweb.org](http://www.spcpweb.org)

**San Francisco Baykeeper**  
Sejal Choksi  
55 Hawthorne St 550  
San Francisco, CA 94105

**Steven R. Sheffield, Ph.D.**  
Affiliate Professor  
Dept of Enviro Science and Policy  
George Mason University  
4400 University Dr.  
Fairfax, VA 22030  
Tel. (703) 993-1616

**Texans for Alternatives to Pesticides**  
Charlotte Wells  
3015 Richmond Ste 270  
Houston, TX 77098  
Tel. 713-523-2827  
[www.nopesticides.org](http://www.nopesticides.org)

**Vermont Public Interest Research Group (PIRG)**  
Ben Davis  
141 Main Street  
Montpelier, VT  
Tel. 802-223-4097  
[www.vpirg.org](http://www.vpirg.org)

**Wyoming Outdoor Council**  
Steve Jones  
Watershed Protection Program Attorney  
262 Lincoln St.  
Lander, WY 82520  
Tel. 307-332-7031 ext. 18  
[www.wyomingoutdoorcouncil.org](http://www.wyomingoutdoorcouncil.org)

## **Appendix A: Adulticiding Does Not Equal Better Public Health Management**

- In 2003 the city of Boulder, CO did not adulticide and showed an 80% reduction in mosquito populations reporting as many as 94 million mosquitoes killed prior to becoming biting adults. The city also reported lower attack rates (or rates of serious illness) per population than surrounding cities where adulticiding took place.

- City of Boulder WNV Surveillance and Control Plan, 2003 Season.

- Despite high mosquito counts and large percentages of infected birds, Shaker Heights, Ohio refused to adulticide like its neighboring cities in Cuyahoga County. 2002 results showed the county had 219 cases of WNV with only 2 cases occurring in Shaker Heights.

- Lynch, Joe. June/July 2004. Cuyahoga County Board of Health. Ryan Sullivan, Shaker Heights WNV Task Force. Personal Communication.

- The counties of Goshen and Plate, WY rely heavily on adulticides and in 2003 counted 80 WNV cases, 8 fatalities and 77 cases, 3 fatalities, respectively. Their neighbor Cheyenne, with 2 times the population and 3 times the landmass, used only larvicides and had 20 cases of WNV and 1 fatality.

- Lee, Robert A. April 2004. Director Environmental Management, City of Cheyenne and Larimer County. Personal Communication.

## Appendix B: Communities Are Adopting Safer Mosquito Management Programs

- **Lyndhurst, Ohio**, passed a landmark ordinance in 2003 prohibiting the spraying of pesticides for WNV. During a Task Force sponsored forum, a panel of experts discussed the hazards and low efficacy of adulticides. The Council stated, “[T]here is substantial belief that the more effective way of controlling the mosquito populations is by larvacide treatment and thorough education...” Concluding that, “[T]he dangers of WNV are minimal and affect a very small segment of the population and that the long-term health and environmental risks of spraying with synthetic pesticides poses a much greater risk.”<sup>i</sup>
- **South Euclid, Ohio** in June 2004 passed the second landmark ordinance in the country prohibiting the spraying of pesticides for WNV for similar reasons as Lyndhurst.<sup>ii</sup>
- **Washington, DC** health officials continue their no-spray policy stating that pesticide spraying is inappropriate in a heavily populated area with asthmatics. Instead, officials focus on larval control and public education, with education materials distributed in four languages. The Department of Health is also implementing a Tire Round-Up program for residents to discard old tires, a major breeding site for mosquitoes.<sup>iii</sup>
- **In York County, Virginia**, officials distribute the mosquito eating fish, *Gambusia holbrooki*, to residents in order to decrease pesticide use for mosquito control. Several thousand of the fish have been bred by the county's fishery as part of its mosquito prevention program.<sup>iv</sup>
- **Ft. Worth, Texas** has not sprayed for mosquitoes since 1991. In 2003, Ft. Worth had 3 WNV cases and no deaths. Brian Boerner, Director of Environmental Management, states, “the spraying of chemicals also has the potential of contaminating our waterways, killing the beneficial fish and organisms that feed on mosquito larva, adding harmful volatile organic chemicals to the atmosphere—a precursor chemical to ozone formation—and providing a potential inhalation or ingestion hazard to residents.”<sup>v</sup>
- **Nassau County, New York** joins others in using predacious fish instead of adulticides in hard to reach salt-water marshes.<sup>vi</sup>
- **Marblehead, MA** has a WNV Response Plan that requires a town hall meeting before any adulticides are used (and only if there's been a locally-acquired human death).<sup>vii</sup>
- **In 2003, Boulder, Colorado** focused on larviciding, surveillance and public education without the use of adulticides and offered free WNV information workshops for neighborhood groups and distributes free samples of Mosquito Dunks, a least-toxic larvacide product, for use in stagnant water.<sup>viii</sup>

<sup>i</sup> Beyond Pesticides. 2003. “Ohio City Adopts Landmark Law to Stop Pesticide Spraying for West Nile Virus.” *Daily News*. Washington, DC. July 14.

<sup>ii</sup> Beyond Pesticides. 2004. “Another Landmark No-Spray Ordinance Passed in Ohio.” *Daily News*. Washington, DC. July 13.

<sup>iii</sup> York County Environment and Development Services. Div. Drainage and Mosquito Control.

<sup>iv</sup> District Of Columbia, Department Of Health. 2003. *Arbovirus Surveillance and Response Plan*.

<sup>v</sup> Ft. Worth Public Health Department, Mosquito Prevention and Control.  
<http://www.fortworth.gov/health/HP/mosqinees.asp>

<sup>vi</sup> Turrillion, G. March 2002. Director of Mosquito Control Program in Nassau County, NY.

<sup>vii</sup> Town of Marblehead, MA 2002. West Nile Virus Protocol and Response Plan.

<sup>viii</sup> City of Boulder WNV Surveillance and Control Plan, 2003 Season