



# Transforming Government's Approach to Regulating Pesticides

## To Protect Public Health and the Environment

**Eds. Note:** The following was submitted to the Obama Administration Transition Team on January 9, 2009 by Beyond Pesticides and Pesticide Action Network North America (PANNA) on behalf of 100 organizations and over 1,200 individuals. We ask for your support and suggestions because we will continue to use this document as we work with the new administration. To sign on, go to [www.transformingpesticidepolicy.org](http://www.transformingpesticidepolicy.org).

### Letter to the Obama Administration

Congratulations on your election. We are so pleased and energized by the opportunities that are in front of us on the eve of your inauguration. We sincerely offer our commitment and passion to your efforts to transform America, and to the social movements needed to support, hasten and ensure such a transformation.

Enclosed for your consideration are priorities for change within key areas of your Agenda for America – priorities that we imagine could be embraced within the first 100 days of your administration. We are pleased to note that many of our priorities overlap with yours, and offer this analysis in an effort to proactively assist in developing an agenda for change in America that prioritizes:

- Public and environmental health;
- A green and fair economy;
- Environmental protection;

- Scientific integrity; and,
- Transparency and accountability.

Because of the widespread and unnecessary use of over five billion total pounds of pesticides a year, hazardous chemicals invade our lives through the contamination and poisoning of our bodies, air, land, water, food and the built environment.

Recommendations affecting the hazardous production, transportation, use and disposal of hazardous pesticides intersect with numerous federal agencies, including EPA, FDA, USDA and DOJ. It is our goal that the Obama administration embraces both improved chemical restrictions and policies for advancing practices that avoid reliance upon these toxic technologies altogether, thereby eliminating their hazards to public health, workplace conditions and the environment, and their contribution to global climate change.

Thank you for your thoughtful consideration of these priorities. We would be pleased to engage in further conversation with you and members of your Transition Team as you evaluate these issues over the coming months. With warmest wishes for all success.

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# Transforming Government's Approach to Regulating Pesticides

## To Protect Public Health and the Environment

The recommendations in this document address pending decisions and petitions currently before federal agencies responsible for regulating pesticides and promoting alternatives, and offer suggestions for immediate directional shifts needed to develop America's plan for safer, healthy, ecological and effective pest management.

We have identified immediate actions that we urge be taken in the first 100 days of the Obama Administration, and we signal our recommendations for new approaches that would transform the way that pesticides are regulated in America. We have organized the key priorities to



reflect their resonance with the priorities of the Obama Administration: Environment and Energy; Protecting Public Health; and, Ensuring Transparency and Accountability. We also include a list of priority bans and phase-outs of highly hazardous chemicals that jeopardize public health and the environment.

Section I offers a summary of proposed actions for the first 100 days of your administration. Section II outlines the directional shifts needed to transform American regulation of pesticides in order to effectively protect public health and our environment. Section III offers additional background information on the issues outlined for action in Section I.

## I. Summary of Proposed Actions for First 100 Days

### Pesticides, the Environment and Energy

#### A. Promote Organic Agriculture and Systems to Slow Global Climate Change and Support Rural Economic Development (USDA)

**Action Needed:** Support conversion to organic, regenerative agricultural systems and other organic practices. Promote existing mechanisms, including the Environmental Quality Incentives Program (EQIP), to support the conversion. Join the international community in making concrete commitments to implement the policy options outlined in the UN International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), approved by more than 55 countries worldwide. Direct USDA to develop an action plan with specific goals and timeline to transition the U.S. agricultural economy to agroecological and organic production systems that support local, small-scale and family farmers as a solution to today's food, economic, energy and environmental challenges. Plant an organic vegetable garden on the White House lawn.

#### B. Protect Sensitive Species, with Immediate Protections for Bees and other Pollinators (EPA)

**Action Needed:** Direct EPA's Office of Pesticide Programs to incorporate into all pesticide registration and reregistration protocols a requirement to evaluate sublethal effects with an impact on domesticated and wild bees and other pollinators. There are sublethal effects, not evaluated by EPA, which can disrupt bees' critical abilities to feed and forage, diminishing learning and

organization skills.

#### C. Protect Water from Pesticide Contamination by Ensuring Consistency with Clean Water Act (EPA)

**Action Needed:** Direct EPA's Office of Water and Office of Pesticide Programs to restrict pesticides found in surface and ground water at levels above current water quality standards. Direct EPA's Office of Water to expand the scope of standard setting to include all pesticides, their metabolites, contaminants and inert ingredients, giving priority to those that have already been found in surface and ground water.

#### D. Transition EPA Environmental Stewardship Program from Risk Reduction to Adoption of Safer, Least-toxic Practices (EPA)

**Action Needed:** Direct EPA's Office of Pesticide Programs to restructure the Pesticide Environmental Stewardship Program (PESP) to give priority to organic and safer strategies by replacing hazardous chemical-reliant approaches with those that seek to reduce and eliminate hazardous chemical use.

### Protect Public Health

#### E. Protect Farmworkers and Farmworker Children (EPA)

**Action Needed:** In support of legal challenges from a coalition of farmworker, public health, and environmental groups, direct EPA to reverse its decision to allow continued use of highly



hazardous pesticides responsible for acute and chronic poisoning of farmworkers, such as organophosphates, carbamates and other pesticides known to disrupt the human hormone system, and specifically including the pesticides azinphos-methyl, chlorpyrifos, diazinon, endosulfan, ethoprop, methidathion, methamidophos, methyl parathion, oxydemeton-methyl and phosmet. Direct EPA to adopt long overdue, stronger worker protection standards. In the words of Shelley Davis, a much-beloved farmworker attorney who recently died of cancer, "With safer alternatives already in widespread use, EPA has betrayed the trust of the men, women, and children whose health it is duty bound to protect by allowing [these] extremely hazardous pesticides to remain in use." "It is time to make that shift now," Ms. Davis concluded.

#### **F. Protect Arctic Communities and U.S. Residents from Persistent Pollutants (EPA, State Department)**

**Action Needed:** Direct the State Department and EPA to work with Congress to ratify the *Stockholm Convention on Persistent Organic Pollutants* (POPs) in a way that gives EPA the authority to take prompt action on pesticides and other chemicals identified as POPs by the international community. Direct EPA to withdraw the registration of the pesticide endosulfan, one of the few POPs pesticides remaining in use in the U.S. Engage in the implementation of the Stockholm Convention in a manner that shows leadership in the protection of human health and the environment.

#### **G. Protect Families in Malaria-prone Regions from Unnecessary Exposure to Pesticides (President's Malaria Initiative)**

**Action Needed:** Direct the U.S. Agency for International Development and the President's Malaria Initiative to prioritize safe and sustainable approaches to malaria control that do not rely on indoor spraying of the organochlorine pesticide DDT or overemphasize reliance on other controls that have demonstrated negative impacts on human health and development. Ensure continued U.S. support for malaria control and engage constructively with the World Health Organization and other international partners to coordinate global efforts to control

malaria with safe, sustainable solutions, such as the Stockholm Convention's Business Plan on DDT Alternatives.

#### **H. Protect Children from Dangerous Pharmaceutical Pesticide Products (FDA)**

**Action Needed:** Direct FDA to withdraw registration for pharmaceutical products containing the organochlorine pesticide lindane, a neurotoxicant that has been found to be particularly dangerous for children and is moving toward international phaseout. Direct EPA and FDA to strengthen coordination on the regulation of pharmaceutical products containing pesticides. Support addition of the pesticide lindane under the Stockholm Convention without exemption for pharmaceutical uses.

#### **I. Regulate Pesticides that Cause Endocrine Disruption (EPA)**

**Action Needed:** Direct EPA to restrict production and use of known endocrine disrupting chemicals, as required under the *Food Quality Protection Act* (FQPA). Direct EPA to develop regulations for testing pesticide product ingredients for endocrine disrupting effects in accordance with statutory responsibility under FQPA, and produce a list of suspected endocrine disruptors based on the scientific literature and action taken by the European Union.

#### **J. Protect from Low-Dose Exposure (EPA)**

**Action Needed:** Direct EPA to incorporate low-dose testing requirements into all pesticide registration and reregistration decisions currently underway. Incorporate low-dose testing, including early fetal exposure, into protocols for all future pesticide registration and reregistration to evaluate for potential effects such as asthma and respiratory diseases, autoimmunity, infectious diseases and ineffective vaccine responses, cancer, neurodegenerative diseases and neurocognitive loss, cerebral palsy, atherosclerosis, hypertension, and male sterility.

#### **K. Protect from Chemical Mixtures (EPA)**

**Action Needed:** Direct EPA to require evaluation of the toxic effects of chemical mixtures typically found through environmental exposure as part of all pesticide product registration and



reregistration decisions currently underway. Mandate a chemical mixture evaluation for all future registration and reregistration decisions. As recommended by the National Research Council, and required by the FQPA, direct EPA to develop a process to account for cumulative effects of exposure to multiple pesticides. EPA has narrowly construed its mandate to only include cumulative effects with a “common mechanism of action.” This is an arbitrary and gross underestimate of the cumulative effects of exposure to multiple pesticides.

#### **L. Incorporate Pesticide Drift into Assessment of Pesticide Exposure (EPA)**

**Action Needed:** Direct EPA to officially recognize all forms of airborne pesticide drift, including post-application volatilization in exposure assessments used in pesticide product registration and reregistration decisions. Direct EPA to require revised pesticide labels that prohibit drift from contacting “people, structures people occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.” Direct EPA to include the ten-fold child protection factor in the FQPA to all exposure routes, including drift, just as it does for food-borne exposure. EPA must improve its definition of drift, taking into account all sources and mechanisms of drift. EPA must enforce requirements for NPDES permits to ensure local assessment of conditions that may contribute to non-target water effects.

#### **M. Prevent Testing of Pesticides on People (EPA)**

**Action Needed:** Direct EPA to disallow all studies submitted from pesticide registrants that rely on human testing, and discontinue exploration of government-sponsored human testing.

#### **N. Protect Those Who Are Chemically Sensitive (Department of Justice)**

**Action Needed:** Direct the Department of Justice to develop language in the *Americans with Disabilities Act* (ADA) regulations that explicitly acknowledges access issues and delineates accommodation for those with Chemical Sensitivity in order to ensure that public spaces are accessible to them.

#### **O. Ensure Fumigant Pesticide Regulations Maintain Protections for Public Health (EPA)**

**Action Needed:** Maintain July 2008 recommendations made by EPA’s Office of Pesticide Programs for new regulations for fumigant pesticides. Direct EPA and USDA to develop a plan, with concrete goals and timelines, to stimulate a transition off fumigant pesticides towards reliance on safer alternatives.

### **Transparency and Accountability**

#### **P. Disclose “Secret Ingredients” in Pesticide Products (EPA)**

**Action Needed:** Require that pesticide labels identify “inert” ingredients that have been classified as hazardous under a variety of environmental laws, including the *Clean Air Act*, the *Clean Water Act*, and the *Emergency Planning and Community Right to Know Act*. This would provide information about almost 400 hazardous chemicals in pesticide products.



#### **Q. Review All Pesticide Ingredients In Consumer Products (EPA, FDA)**

**Action Needed:** Direct EPA and FDA to review all ingredients in pesticide and consumer products for their toxic properties regardless of the manufacturers’ claims. Now products are only subject to FIFRA if the manufacturer makes a pesticidal claim.

#### **R. Ensure Full Disclosure of Known and Unknown Adverse Effects (EPA)**

**Action Needed:** Direct EPA to require that registrants disclose on pesticide labels (including household pesticides) the full extent of knowledge and/or ignorance of possible adverse effects, including data gaps and chronic health effects. Require that the full detail of registrant’s exposure and toxicology studies be released to the public so the studies can be reviewed by any interested stakeholder.

#### **S. Reinstate Public Access to Information, including the National Agricultural Statistics Service (EPA, FDA, USDA)**

**Action Needed:** Restore government practice of disclosing publicly releasable information with fee waivers for public interest use. Expedite any Freedom of Information Act requests currently pending and waive fees for those requests. Require that the USDA reinstate the National Agricultural Statistics Service.

#### **Priority Bans and Phaseouts of Highly Hazardous Pesticides**

#### **T. Ban Persistent Bioaccumulative Wood Preservatives (EPA)**

**Action Needed:** Direct EPA to ban the use of toxic, obsolete wood preservatives. A ban will significantly reduce the planet’s toxic load of persistent bioaccumulative toxic chemicals and chemicals with other long-term toxic effects on health and the environment. Alternatives to treated wood for utility poles and railroad ties



exist and are economically viable. The production will meet the demand if regulatory action is taken by EPA.

#### **U. Ban the Non-Medical Uses of the Hazardous Antibacterial Triclosan (EPA, FDA)**

**Action Needed:** EPA must evaluate efficacy trials to assess the reasonableness of the hazard in light of triclosan registered uses in plastics, textiles, fabrics and vinyl. FDA, similarly, must evaluate efficacy in personal care products. Due to the persistent exposure of triclosan through these products, it is of critical importance that EPA determines the added value of this chemical before making the final decision to reregister triclosan. Ultimately, the reregistration of triclosan should be rejected by EPA, and FDA, working with EPA's Office of Pesticide Programs and Office of Water, should follow with action to immediately curtail uses under its jurisdiction.

#### **V. Withdraw Registration of Particularly Hazardous Pesticides (EPA, FDA)**

**Action Needed:** Direct USDA to support farmers making a shift away from reliance on highly hazardous fumigant pesticides toward more sustainable and healthier practices, and encourage state agencies to do the same. Direct EPA to reverse its decision to allow continued use of highly hazardous pesticides responsible for acute

and chronic poisoning of farmworkers, including organophosphates and other pesticides, including azinphos-methyl, chlorpyrifos, diazinon, endosulfan, ethoprop, methidathion, methamidophos, methyl iodide, methyl parathion, oxydemeton-methyl and phosmet. Direct EPA to withdraw the registration of the pesticide endosulfan, one of the few POPs pesticides remaining in use in the U.S. Direct FDA to withdraw registration for pharmaceutical products containing the organochlorine pesticide lindane, a neurotoxicant that has been found to be particularly dangerous for children and is moving toward international phaseout.

#### **W. Establish Moratorium on Pesticidal Nanotechnology (EPA)**

**Action Needed:** Suspend registration of nano-products with pesticidal properties, and remove untested products from the market. Direct EPA to develop a clear testing protocol that identifies the full range of potential adverse health and environmental effects of nano-products with pesticidal properties.

#### **X. Cancel Tolerances and Uses for Sulfuryl Fluoride and Assist with Alternatives (EPA)**

**Action Needed:** Issue a stay, or immediate suspension, of all food-uses of sulfuryl fluoride pending a full evidentiary hearing.

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## **II. A New Approach to American Regulation of Pesticides**

Because of the widespread and unnecessary use of over five billion pounds of pesticides each year in the U.S., hazardous chemicals invade our lives through the contamination and poisoning of our bodies, air, land, water, food and the built environment. Recommendations affecting the hazardous production, transportation, use and disposal of hazardous pesticides naturally intersect with numerous federal and state agencies, including the Environmental Protection Agency, Food and Drug Administration, and Departments of Agriculture and Justice. It is our goal that the Obama administration embraces both improved chemical restrictions and policies for advancing practices that avoid these toxic chemicals, thereby eliminating their hazards to public health, workplace conditions and the environment, and their contribution to global climate change. The recommendations contained in this document address pending decisions and petitions currently before the agencies responsible for regulating toxic chemicals.

### **Leadership for Transformation: Moving from Hazardous Chemicals to Safer, Viable Approaches**

The federal government needs a vision for pesticide policy across relevant agencies that seeks to replace outdated approaches and technologies reliant on toxic chemicals with green approaches advanced through incentives, assistance and restrictions. In this context, pesticide reduction, while a worthwhile objective, does not respond to the urgency of the contamination and poisoning and the availability of alternative pest management strategies that are not unnecessarily reliant on toxic chemicals. The required vision, then, provides leadership for a transition to green approaches that inherently avoid hazardous pesticides, while meeting reasonable goals for managing unwanted insects, plants and other organisms in an ecosystem that is currently stressed to its limits.



Implementation of recommendations in this document will require action and coordination among several federal departments and agencies.

We humans share with other inhabitants of this ecosystem immensely elevated toxic body burdens, and excessive rates of environmentally-induced illnesses, such as cancer, infertility and reproductive problems; immune, hormonal and nervous system disease; respiratory illness and asthma; and learning disabilities and autism. These problems can no longer be ignored. In the 21st century, we must focus our regulatory system on prevention strategies that guide us to achieve goals of clean air, land and water management with a "first do no harm" approach. This means that regulation of toxics should give prominence to the safest method possible for addressing a pest management problem, instead of flawed risk assessment practices that currently accept high levels of hazards and unknown or untested effects and interactions. This must be achieved in a new climate of scientific consideration, allowing for informed decision making with full disclosure of the limits of knowledge. Under existing law, the federal government can and should adopt an approach that embraces the notion that it is unreasonable to allow use of and exposure to toxic chemicals, or chemicals that have not undergone full health and environmental testing, when there are less toxic alternatives available.

For example, the proven effectiveness and economic viability of organic practices in agriculture, lawn, landscape, and structural management make pesticide-intensive practices antiquated, and mean the hazards associated with pesticide use are unreasonable and unwarranted. The risk assessment process, as interpreted by EPA's current practices, allows the use of products that have known hazards or have not been fully tested, despite the availability of nontoxic and least-toxic products. We have an opportunity to create green jobs by the thousands through the adoption of organic and sustainable principles that work, and that can create secure, healthy, viable, energy-efficient management systems in every state and region.

### **Improved Chemical Restrictions**

On the restriction side there are a range of issues affecting the registration, reregistration and cancellation of pesticides that raise issues of both compliance with existing law and discretionary authority to ensure better protection of health and the environment. In this area, there are numerous issues regarding the application of legitimate scientific process, risk assessment, exposure assumptions, sensitive populations, and

the "reasonableness" of the acceptable hazards. Transparency of agency processes and underlying data is a key area needing attention, specifically the disclosure of "secret" ingredients in products and access to information under the *Freedom of Information Act* (FOIA). Full disclosure and fair implementation of FOIA is key to maximizing the opportunities for change.

### **Improved Facilitation of Green Approaches**

We urge use of the precautionary approach when less hazardous methods or products are available or when full information is not attainable. We urge the administration to take leadership in applying this approach to implementation of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), *Food Quality Protection Act* (FQPA), *Federal Food Drug and Cosmetic Act* (FFDCA), the Conservation Title of the Farm Bill, and the USDA National Organic Program. And we urge the adoption of complete life cycle (cradle to grave) analyses that fully reflect the true cost savings of safer substitution strategies. In seeking to establish the federal government as a leader in "green" practices to protect health and the environment, we urge the adoption of an executive order that requires organic and rigorously ecological practices in the management of federal lands, as the standard against which reasonable alternatives are measured, and as the basis for integrated pest management (IPM) standards, eliminating highly hazardous pesticide use in the management of federal buildings, owned and leased.

### **Reversing Years of Neglect and Unnecessary Poisoning**

Administrative practices and leadership are crucial and urgently needed to reverse decisions that have compromised America's public health and environment, and change a regulatory culture that accepts unnecessary harm, the politicization of science, and flawed or faulty exposure assumptions and analyses, all of which have resulted in wholly inadequate protection of public health and the environment. Priority must be given to reversing and correcting the blatant disregard for law that has been incorporated into regulatory decisions. And most importantly, leadership is needed to direct federal agencies to prioritize the development of safer, clean, healthy and viable systems that sustain our health, air, land, water, food and the built environment.

### III. Background on Issues Identified for Proposed Action in First 100 Days

#### Pesticides, the Environment and Energy

##### A. Promote Organic Agriculture and Systems to Slow Global Climate Change

We urgently need to begin the expedited national and worldwide conversion to organic systems to manage agricultural and other landscapes. The data from The Rodale Institute's Farming Systems Trial (FST), perhaps the longest running agronomic experiment (began in 1981), shows that organic farming is one of the most powerful tools in the fight against global climate change. Carbon sequestration in organic no tillage (no-till) farming systems is two to four times greater than in chemical-intensive no-till systems. At the same time, the Rodale data shows reduced energy needs on the organic farm (37 percent less than conventional) with consistently high yields. The FST's two organic systems have shown an increase in soil carbon of 15-28%, while the conventional system has shown no statistically significant increase. For the organic systems, that translates into more than 1000 lbs of captured C (or about 3670 lbs of CO<sub>2</sub>) per acre-foot per year —without taking into account the reductions in CO<sub>2</sub> emissions represented by the organic systems' lower energy requirements. A comparative analysis of FST energy inputs, conducted by David Pimentel, Ph.D. of Cornell University, found that organic farming systems use just 63% of the energy required by conventional farming systems, largely because of the massive amounts of energy required to synthesize nitrogen fertilizer.

According to Rodale, if we think of this in terms of the equivalent number of cars that would be taken off the road each year by farmers converting to organic production, we would be taking 117 off the road for each 320-acre farm that converts to organic practices. If all 160 million acres of conventional corn and soybeans in the U.S. were converted to organic production, that translates to 58.7 million cars off the road (25% of the national total) or 733,750,000 car miles not driven...or 116,666,666 round trips from New York City to Los Angeles not taken. Finally, if all 431 million acres of U.S. cropland were converted to organic, 158,177,000 cars would be taken off the road (over half of the national total) or 1.98 trillion car miles not driven.

In addition, the organic systems reduce nitrate and other nutrient runoff into waterways. While significant numbers of consumers in the marketplace have shown their commitment to organic, we now need government attention to helping with the national conversion to organic systems. The organic solution is real. Now we must elevate this market, moving it from the exception to the rule with national and international goals for total conversion —understanding organics' importance to our future.

The House and Senate Agriculture committees adopted

conference report language in the 2008 Farm Bill recognizing USDA authority to restrict pesticide use, finding it is entirely consistent with the current regulatory program administered by EPA. The adoption of new organic provisions, and the affirmation of USDA authority to curtail pesticide use or adopt mitigation measures, enables the Department to play an increasingly important role in helping to reduce pesticide contamination and advance environmental and organic practices.

Around the world, hundreds of scientists and more than 55 governments agree that organic, regenerative agricultural solutions are needed to address our pressing problems of hunger, poverty and economic development. The International Assessment of Agricultural Knowledge, Science, and Technology for Development (IAASTD), an intergovernmental assessment cosponsored by the Food and Agriculture Organization, UN Development Programme, Global Environment Facility, UN Environment Programme, UNESCO, the World Bank, and the World Health Organization, with over 400 contributing scientists from around the world, provides a thorough analysis of successes and failures of the world's food and agricultural systems, and a comprehensive list of policy, institutional and investment options to reorient towards equitable and sustainable food systems that will meet development goals agreed upon by all nations. Yet the United States was one of only three participating countries that did not formally approve the report at the final intergovernmental plenary in April 2008. We encourage your administration to study the IAASTD report and ask you to join the international community in making commitments to implement its options for achieving equitable and sustainable development.



Data from Rodale's Farming Systems Trial (pictured here) shows that organic farming is one of the most powerful tools in fighting global climate change.



## **B. Issue: Protect Sensitive Species, with an Immediate Priority on Bees and Other Pollinators**

Bee colony collapse disorder (CCD) is an increasingly widespread phenomenon characterized by bees disappearing or abandoning their hives. There are, of course, numerous theories for its cause that involve pesticides, viruses and pathogens. Countries, including France, Germany and Italy, have taken steps to limit neonicotinoid pesticides use, along with other pesticides like fipronil. The National Union of French Beekeepers brought the problem to national attention and successfully urged their government to restrict these pesticides. The U.S. lags behind. The pesticide link to bee poisonings is not new. The lack of an adequate regulatory response is as old as our 1972 federal pesticide law and all its revisions. What we are seeing today is an escalation of a problem that has been building for decades. Bees support our environment, pollinating half the flowering plant ecosystem and one-third of agricultural plants. The disappearance of the bees alerts us to a fundamental and systemic flaw in our approach to the use of toxic chemicals –and highlights the question as to whether our risk assessment approach to regulation will slowly but surely cause our demise without a meaningful change of course. Michael Schacker, author of *A Spring Without Bees: How Colony Collapse Disorder Has Endangered Our Food Supply*, identifies humans' anthropocentric worldview as justifying our manipulation of nature to the brink of destruction. Bees should

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Colony Collapse Disorder is a serious threat to the global food supply.

serve as a warning because our very existence depends on theirs. The bee problem, which is not new just more frightening than it has ever been, should be a wake-up call. It should force a rethinking of how we approach policies that allow the management of “pests” with a war-like mentality and the continued use of chemicals for which there are safe alternatives. While admittedly uncertain and filled with deficiencies, risk assessments establish unsupported thresholds of acceptable chemical contamination of the ecosystem, despite availability of nontoxic alternative practices and products. In fact, the only acceptable policies in this crisis are those that eliminate highly hazardous pesticide use.

## **C. Issue: Regulation of Pesticides in Water Should Be Consistent with Clean Water Act**

Studies of major rivers and streams document that 90 percent of all fish, 100 percent of all streams, 33 percent of major aquifers, and 50 percent of shallow wells contain one or more pesticides at detectable levels. (USGS, 2006) Given known effects and deficiencies in the level of protection provided to the public, people and communities are shifting away from the use of toxic pesticides and adopting safer methods and materials. Results of the United States Geological Survey's (USGS) National Water-Quality Assessment (NAWQA) studies, from 1992-2001, show that pesticides are widespread in streams and groundwater throughout the country. USGS finds pesticides or pesticide degradates in one or more water samples from every stream sampled in the U.S. Not surprisingly, USGS also finds that the most heavily used pesticides are the ones found most often in streams and groundwater.

The top 15 pesticides found in water are among those with the highest current usage today. EPA has not established drinking water standards for all the pesticides found in water. Of the hundreds of pesticide active ingredients it registers, EPA (balancing consumer risk against water supplier cost) has established maximum contaminant levels (MCLs) for only 24 pesticides. Of 76 pesticides analyzed under the National Water-Quality Assessment (NAWQA), human health criteria are available for only 42 pesticides and four degradation products. In USGS's 10-year study of pesticides in streams and groundwater, only 47 of 83 pesticides detected have established human health benchmarks.

Certain effects, such as endocrine disruption and responses of sensitive individuals, have not been considered. The effects of seasonally high concentrations have not been evaluated. Breakdown products and contaminants in pesticide products are not typically factored into safety



reviews. Breakdown products are compounds that result from pesticides undergoing changes while in the environment. There are thousands of possible breakdown products for pesticides, and only a few of these have been assessed in streams or groundwater. Some breakdown products are as, or more, toxic than their parent pesticides.

Research suggests that some pesticides may cause health and environmental effects at levels determined allowable by current standards. For example, when exposed to atrazine at concentrations considered acceptable by EPA and found in public water supplies, hamster ovary cells exhibit chromosome damage. Additionally, tadpoles exposed to below-allowable levels of atrazine develop sexual abnormalities including hermaphroditism. EPA testing has failed to detect the significance of sublethal doses and has downplayed and dismissed studies that look at these impacts.

National Marine Fisheries Service (NMFS) determined that accepted uses of chlorpyrifos, diazinon and malathion are likely to jeopardize the continued existence of 27 species of endangered or threatened salmon and steelhead. NMFS's biological opinion (BiOp) of the three pesticides states that current uses were likely reducing the number of salmon returning to spawn. (NMFS ESA Sec. 7, BiOp) These three pesticides are all organophosphates (a class of neurotoxic chemicals). They are used in both agricultural and/or urban insect control. Recent research has found that in combination they can have "synergistic effects" on salmon. In other words, the effect of organophosphate mixtures is greater than the effect of each of the chemicals' effects when added together. These chemicals are often found together.

Violations of the Unregulated Contaminant Monitoring Rule (UCMR), which requires utility companies to monitor and report on the contaminants in their water, are considered "technical violations." National data monitoring requirements fail to take into account those municipalities that do not report or monitor contaminants; therefore, current national figures are likely incorrect or skewed. Municipalities can also choose to only monitor at certain times, such as during low, rather than peak, flow, which skews the data further.

#### **D. Issue: Transition EPA Environmental Stewardship Program from Risk Reduction to Adoption of Nontoxic Practices**

EPA's Pesticide Environmental Stewardship Program (PESP), "a voluntary program that forms partnerships with pesticide users," should transition from a "risk reduction" to a "use reduction and elimination" program. This modernized approach is feasible under the "unreasonable adverse effects" standard of FIFRA, given the availability of new technologies and methods that render the risk reduction approach antiquated, ineffective and, therefore,



**Much of our drinking water supply is contaminated with one or more pesticides.**

unreasonably adverse.

The focus on risk reduction, given the known impacts and limitations in knowledge of hazards as defined by the regulatory process, does not accelerate approaches to stop unreasonable adverse effects by curtailing chemical-dependent approaches. Reductions of pesticide risk, given the known hazards and the undefined adverse impacts, does not provide the kind of high-level movement forward that is needed to stop the escalating impacts of low-level exposure, mixtures, and synergistic effects of continued widespread toxic pesticides use.

In a transformed EPA, the agency can fully embrace the notion of pesticide use reduction toward elimination and assist in the adoption of new technologies and methods that facilitate this transition. Given the legacy of failed risk assessment approaches by the agency, the stewardship program should be in the forefront of promoting and supporting new approaches that are not reliant on old polluting technologies and approaches.

For example, chemical-intensive no-till farming practices have been touted as an agricultural approach that sequesters carbon and eases pressures on global climate change. However, organic no-till practices that reject herbicide use, substituting a cover crop, are found to sequester four times as much atmospheric carbon and significantly reduce the use of fossil fuels. The global environmental challenges that we face no longer give us the luxury to tinker with "risk reduction" systems that are inherently dependent on toxic chemical-intensive approaches that are outdated and unreasonable.

## Protecting Public Health

### E. Protect Farmworkers and Farmworker Children (EPA Office of Pesticide Programs)

EPA's neglect of farmworker protection is racist. A new study by a National Institute for Occupational Safety and Health (NIOSH) researcher finds the pesticide poisoning incidence rate among U.S. agricultural workers is 39 times higher than the incidence rate found in all other industries combined. The study, "Acute Pesticide Poisoning Among Agricultural Workers in the United States, 1998-2005," published in the December issue of the *American Journal of Industrial Medicine*, is believed to be the first detailed multi-state assessment of acute pesticide poisonings among agricultural workers.

From 1998 to 2005, a total of 3,271 cases of acute occupational pesticide-related illness/injury among agricultural workers were identified in 10 states. According to EPA, the Worker Protection Standards are designed to reduce the risk of injury or illness to agricultural field workers resulting from exposure to pesticides. Although the WPS was expanded in 1995 and in 2005, EPA developed a new *WPS How to Comply Manual* (HTC), the NIOSH findings indicate that agricultural workers continue to have an elevated risk for acute pesticide poisoning. Furthermore, female agricultural workers experienced nearly twice the risk of pesticide poisoning of male agricultural workers. The most common factors that contributed to pesticide exposure included off-target drift, early reentry into a treated area, and use in conflict with the pesticide label. The study concludes that, "[T]he rates provided should be considered low estimates of the magnitude of acute pesticide poisoning among agricultural workers."

According to the lead author of the report, Geoffrey Calvert, MD, MPH, "The NIOSH findings reinforce the need for heightened efforts to better protect farmworkers from pesticide exposure. EPA is currently in the process of revising the Worker Protection Standard. The findings in this paper can help inform EPA about the most problematic risk factors that need to be targeted by the WPS."

The data was pooled from the California Department of Pesticide Regulation and NIOSH's Sentinel Event Notification System for Occupational Risks-Pesticides (SENSOR-Pesticides) program, which collects information from 10 state health departments. According to the study, 87 percent of poisoning incidents were of low severity illness, 12 percent were of medium severity, less than one percent was of high severity and one case was fatal. The criteria for each definition are stated in the study: "Low severity illness/injury consist of illnesses and injuries that generally resolve without treatment and where minimal time (<3 days) is lost from work. Such cases typically manifest as eye, skin and/or upper respiratory irritation. Moderate severity illness/injury consists of non-life-threatening health effects that are generally systemic and require medical treatment. No residual disability is detected, and time lost from work is less than six days. High severity illness/injury consists of life-threatening health effects that usually require hospitalization, involve substantial time lost from work (>5 days), and may result in permanent impairment or disability."

EPA typically fails to add a 10-fold margin of safety when evaluating specific pesticide risks to farmworker children. An additional 10-fold margin of safety should be added to protect the unborn children of pregnant farmworkers because these babies, who are not employees, may be exposed to this extremely potent neurotoxin at a very vulnerable stage of their development. In setting, modifying or revoking tolerances, FQPA directs EPA to consider, *inter alia*, "available information concerning the ...effects of *in utero* exposure to pesticide chemicals." (§408(b)(2)(C)(I)(II)) In the case of threshold effects, FQPA also directs EPA to add an additional 10-fold (or other) margin of safety for infants and children "to take into account potential pre- and post-natal toxicity and completeness of the data with respect to exposure and toxicity to infants and children." (§408(b)(2)(C)(ii))

In explaining its method of implementing the 10-fold safety factor to the Scientific Advisory Panel (SAP), EPA expressly stated that it would not consider pre-natal exposures to the unborn children of pregnant farmworker women because such exposures are "occupational" and, hence, not within the contemplation of FQPA. (See Presentation for FIFRA Scientific Advisory Panel by Office of Pesticide Programs, Health Effects Division on FQPA Safety



Pesticide poisoning incidence rate among U.S. agricultural workers is 39 times higher than the incidence rate found in all other industries combined.



Factor for Infants and Children (March, 1998).) The statutory language that directs EPA to consider the effects of “in utero” or “pre-natal” exposures to pesticides makes no exception for occupational exposures. Nor could such an exception make sense since it is apparent that a fetus or unborn child cannot work.

Indeed, in an analogous context, the California Supreme Court held that a child, who was injured *in utero* when his pregnant mother was exposed to carbon monoxide at work, could not be prevented from filing suit in tort by the workers compensation bar, which prohibits an employee from suing his or her employer. (*Snyder v. Michael's Stores Inc.*, 16 Cal.4th 991, 945 P.2d 781, 68 Cal.Rptr.2d 476 (1997)) The Court dismissed the notion that the unborn child could be deemed an “employee” as “wholly without merit.” The Court also noted that every other court to consider this question, except one, had reached the same conclusion (and the only exception was a lower California court whose decision was effectively overruled by the Snyder case). Since an unborn child cannot be an “employee,” its pesticide exposure cannot be “occupational.” Thus, any pre-natal exposure to farmworker children must be considered in applying the 10-fold safety factor. As a practical matter, however, the only way to provide a 10-fold margin of safety to a farmworker’s unborn child is to add a 10-fold margin of safety when evaluating margins of exposure for pregnant farmworker women. For this reason, a 10-fold margin of safety must be added when evaluating the occupational risks from pesticides. This approach is also warranted because farmworkers often bring young children into the fields with them, because of the lack of affordable day care. The U.S. General Accounting Office (GAO) has reported that seven percent of farmworkers with children five years or younger took their children with them, at least sometimes, when they worked. (U.S. General Accounting Office, “Pesticides: Improvements Needed to Ensure the Safety of Farmworkers and their Children.” (March 14, 2000))

Additionally, GAO estimated there are some 290,000 children ages 14-17 who are farmworkers in the United States. This figure likely under-represents the true number of young agricultural laborers. Because children can legally begin working on farms as young as 12 years old and the data does not report the figures until age 14, GAO’s figure is likely much smaller than the true figure. A study of migrant children in western New York found that despite legal prohibitions against working with hazardous substances, 10% of children under age 18 reported mixing or applying pesticides. (Pollack, S., et al., “Pesticide Exposure and Working Conditions among Migrant Farmworker Children in Western New York State.” American Public Health Association Annual Meeting Abstracts, (1990)) Additionally, 40% of the children had entered



**Organizers in Texas march to show support for declaring the birthday of Cesar Chavez, founder of the United Farmworkers, a national holiday.**

fields that were still wet with pesticides, 40% had been sprayed with pesticides while in the fields, and 15% reported symptoms of organophosphate poisoning although none received medical attention. This additional 10-fold margin of safety is also warranted to protect other children who may accompany their parents to work in fields which have been treated with pesticides.

In weighing the costs and benefits associated with the use of pesticides, EPA underestimates the health risks by failing to take into account residential exposures. FQPA requires that, in setting pesticide tolerances, EPA must conduct an aggregate analysis of all non-occupational routes of exposure to pesticides, including food, water, air, and residential exposure. (FQPA, §408(b)(2)(D)(vi)) EPA maintains that because a pesticide is not registered for residential use, it must only consider food and water as contributors to aggregate chronic risk. Pesticide drift is a significant problem. A review of pesticide incident data from California reveals that approximately 20% of pesticide incidents found to be possible, probable or definite each year are caused by pesticide drift. EPA’s decision to disregard residential exposure to agricultural pesticides is erroneous and must be addressed.

EPA’s typical analysis and determination that the benefits of using pesticides on crops outweighs the risks is, as a rule, fatally flawed by its failure to assess the true magnitude of the health risks associated with use of products under consideration. When the health risks are fully taken into account, it is clear that these unacceptable risks to farmworkers and their children outweigh the benefits to growers, who can use alternative products.



## **F. Issue: Protect Arctic Communities and all U.S. Residents from Persistent Organic Pollutants**

Persistent organic pollutants (POPs) include many pesticides, industrial chemicals and chemical byproducts. Despite their different uses and origins, all POPs share basic characteristics that make them an urgent global environmental health problem:

- POPs break down very slowly in soil, air, water and living organisms, and persist in the environment for long periods of time.
- POPs concentrate in the food chain, bioaccumulating or building up to high levels in the tissues of all living creatures, including humans.
- POPs are linked with serious health effects in humans and other species, including reproductive and developmental illnesses, immune suppression, nervous system disorders, cancers and hormone disruption.
- POPs travel long distances in global air and water currents, and concentrate in high-latitude, low-temperature regions of the globe, such as in Alaska in the U.S.

Due to their properties of long-range transport and bioaccumulation, in low temperature regions of the globe, POPs pesticides like endosulfan, lindane and DDT are being found in disproportionately high quantities in the bodies of residents of the circumpolar Arctic, including communities in Alaska and Canada. These communities neither produce nor use these pesticides, yet present and future generations are being poisoned by POPs. A case in point is the POP endosulfan, a pesticide which is a suspected

endocrine disruptor. Low dose exposure while in the womb has been linked to autism, male reproductive harm, and birth defects. Endosulfan bioaccumulates in human bodies and is transferred from mother to fetus. Human exposure to endosulfan through food and water is common.

Endosulfan has been found in Alaskan air, lake water, seawater, fish, snow and plants. Levels of endosulfan in these places are increasing rather than diminishing. A study evaluating concentrations of endosulfan in Arctic seawater found the highest concentrations in the western Arctic, specifically in the Bering and Chukchi Sea. Given the inherent persistent and bioaccumulative properties of endosulfan and its presence in Arctic air, water, and biota, continued use of endosulfan poses too great a hazard to the health of northern Indigenous peoples who are reliant on traditional diets of fish and marine mammals. It is imperative that EPA take action to protect these vulnerable communities.

The *Stockholm Convention on Persistent Organic Pollutants* is a strong and effective tool for elimination of POPs chemicals like endosulfan and for protecting the health of vulnerable communities in North America and elsewhere. The U.S. government has signed but not ratified this treaty, thus hampering full U.S. participation and engagement in banning the use of this dangerous class of chemicals and protecting communities in Alaska and North America from endosulfan and other POPs chemicals.

We urge the new administration to direct the State Department and EPA to work with Congress to ratify the *Stockholm Convention on Persistent Organic Pollutants* (POPs treaty) in a way that gives EPA the authority to take prompt action on pesticides and other chemicals identified as POPs by the international community. EPA should be directed to withdraw the registration of the pesticide endosulfan, one of the few POPs pesticides remaining in use in the U.S. The U.S. should engage in the implementation of the Stockholm Convention in a manner that shows global leadership in the protection of human health and the environment while protecting communities in the U.S. from the harm of an egregious group of pesticides.

## **G. Issue: Protect Families in Malaria-prone Regions from Unnecessary Exposure to Pesticides**

Malaria kills one million people a year, with over 80 percent of the deaths occurring among children in sub-Saharan Africa. We fully recognize the importance of targets set by African heads of State in April 2000 to halve mortality for Africa's people by 2010. We applaud U.S. government and international efforts to mobilize the political will and resources to tackle malaria worldwide,



Persistent organic pollutants (POPs) travel long distances in global air and water currents, and concentrate in the Arctic.

and join others in calling for a redoubling of these initiatives.

Dealing with this debilitating illness requires both curative and preventive strategies. Programs for prevention play a crucial role, and encompass a range of elements: improved sanitation, water drainage, public education and surveillance of cases in malarial areas, insecticide-treated bed nets, controlling and reducing the mosquito vectors of malaria, selected use of indoor residual spraying, and fish predators of mosquito larvae. Integrated vector management, rather than reliance on a single factor, is fundamental, as is the involvement of affected communities.

The current focus in U.S.-funded malaria control programs in Africa through the USAID and President's Malaria Initiative (PMI) on use of the organochlorine pesticide dichlorodiphenyltrichloroethane (DDT) in indoor residual spraying programs is dominating the debate on prevention strategies, and potentially derailing much needed progress to prevent malaria with the safest and most effective strategies. DDT has been widely banned because of its accumulation to high concentrations in the food chain where it persists in fatty tissues of animals (including human breastmilk), its ability to move from tropical to temperate zones where break down is further delayed, and its association with a number of chronic illnesses. For these reasons, many governments banned DDT, and addressed its elimination over time in the *Stockholm Convention on Persistent Organic Pollutants* (POPs).

Scientific research shows that low-level DDT exposure carries elevated risks of adverse chronic health impacts. Studies have identified evidence of human reproductive disorders associated with exposure to DDT and its more harmful breakdown chemical dichlorodiphenyldichloroethylene (DDE). These include:

- higher incidence of undescended testes
- poor sperm quality
- premature delivery and reduced infant birth weight
- miscarriage
- reduced breast milk production
- neurological effects, including developmental delays among babies and toddlers exposed to DDT in the womb
- elevated risk of breast cancer (while evidence of a link between DDT exposure and breast cancer is ambiguous, the weight of the evidence indicates increased risk)



A Red Cross worker in Sierra Leone shows a mosquito bed net.

- other cancers (the International Agency for Research on Cancer lists DDT as a possible human carcinogen)
- nervous system impacts due to occupational exposure to DDT
- liver impacts due to occupational exposure to DDT

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**Since 2000, Mexico eliminated the need for DDT and significantly reduced the incidence of malaria.**

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More effective and safer approaches to malaria control are now being used in many countries. Since 2000, Mexico eliminated the need for DDT and significantly reduced the incidence of malaria. After collecting entomological and epidemiological data to characterize the behavioral patterns of mosquitoes and

their interaction with people, a strategy was implemented that combines three main elements:

- a) primary health care to eliminate parasites in people with a new single dose treatment regimen of prophylaxis drugs administered only to the detected positive malaria cases;
- b) improvement of personal and household hygiene; and,
- c) use of environmental management practices to eliminate mosquito breeding sites

This systematic approach has reduced costs, and in some areas negated the need for indoor application of pyrethroid insecticides. Community participation is a key element: health workers and trained volunteers diagnose cases of malaria and administer curative treatment; local efforts eliminate mosquito larvae





**Despite lindane's known dangers, FDA continues to approve its use as an ingredient in shampoos and lotions to control lice and scabies.**

through the cleanup of algae and trash from rivers and streams; and education has improved hygienic conditions in the home. The success is a result of cooperative efforts under the North America Regional Action Plan from the Commission for Environmental Cooperation (CEC).

A program in the central region of Kenya is successfully focusing on reducing malaria by working with the rice-growing community to improve water management, use livestock as bait, introduce biological controls and distribute mosquito nets in affected areas. Vietnam reduced malaria deaths by 97% and malaria cases by 59% when they switched in 1991 from trying to eradicate malaria using DDT to a DDT-free malaria control program involving distribution of drugs and mosquito nets along with widespread health education organized with village leaders. The World Wildlife Fund has documented success in the Kheda district in India, where non-chemical approaches were demonstrated to be cost-effective. In the Philippines, the national program phased out and eventually banned DDT with no increase in the incidence of malaria. The program owed its success primarily to investment in communities to assist their participation in the strategies adopted.

To protect communities in Africa from the long term harms of DDT through U.S.-funded malaria control programs, we urge the new administration to direct the U.S. Agency for International Development and the President's Malaria Initiative to prioritize safe and sustainable approaches to malaria control that do not rely on indoor spraying of the organochlorine pesticide DDT or overemphasize reliance on other controls that have

demonstrated negative impacts on human health and development. We urge the new administration to ensure continued U.S. support for malaria control and engage constructively with the World Health Organization and other international partners to coordinate global efforts to control malaria with safe, sustainable solutions, such as the Stockholm Convention's Business Plan on DDT Alternatives.

#### **H. Issue: Protect Children from Dangerous Pharmaceutical Pesticide Products (FDA)**

The pesticide lindane has been banned in more than 50 countries, including most recently Chile and Mexico. Exposure to this neurotoxic organochlorine has been linked to seizures, developmental disabilities and hormone disruption. It is known to be particularly hazardous to children. The persistent chemical shows up more often than any other pesticide in the Arctic environment, contaminating traditional foods of indigenous communities in the region.

In August 2006, EPA withdrew lindane from all agricultural uses in the United States, and U.S. veterinary uses were canceled in the late 1990s. Governments around the world are now moving to add lindane to the list of chemicals targeted for a global ban under the *Stockholm Convention on Persistent Organic Pollutants*. Lindane is also listed under the *Rotterdam Convention on Prior Informed Consent* (PIC Treaty), and it is targeted under the regional treaty on Long Range Transport Air Pollutants (LRTAP).

In North America, lindane was the focus of a North American Regional Action Plan developed by the governments of Canada, Mexico and the U.S. under the Commission on Environmental Cooperation (CEC). The Action Plan, which was finalized in November 2006, was developed by a trilateral Lindane Task Force, with representatives from all three governments, industry, academics, indigenous communities and environmental health groups. Mexico agreed to phase out all uses under the plan, and the U.S. withdrew agricultural uses.

Despite lindane's known dangers, the U.S. Food and Drug Administration (FDA) continues to approve its use as an ingredient in shampoos and skin lotions marketed to control lice and scabies. Currently the U.S., an observer at the Stockholm Convention treaty meetings, is one of the few countries supporting a global exemption for the pharmaceutical uses of lindane.

California banned the use of lindane for lice and scabies control in 2002. The state's water is cleaner and, according to an informal survey of health professionals, lindane has not been missed. Since the ban, lindane concentrations in California wastewater treatment



plants has declined significantly. The study, “Outcomes of the California Ban on Pharmaceutical Lindane: Clinical and Ecological Impacts” in *Environmental Health Perspectives* (12/11/2007), surveyed pediatricians in California and reports that “most of the respondents (78%) did not notice any difficulties after the lindane ban.”

Morton Grove Pharmaceuticals, the major distributor of lindane products in the U.S., continues to aggressively promote the use of lindane products. The company has actively lobbied against restrictive legislation in Michigan and New York, and filed lawsuits against the Michigan Ecology Center and the National Pediculosis Association for distributing information about lindane’s adverse health effects. In late 2007, FDA issued a stern letter to Morton Grove, warning the company to stop its misleading advertising.

### **I. Issue: Regulate Pesticides That Cause Endocrine Disruption**

Common household products—detergents, disinfectants, plastics, and pesticides—contain chemical ingredients that enter our bodies, disrupt hormones, and cause adverse developmental disease and reproductive problems. Known as endocrine disruptors, these chemicals, which interact with the endocrine system, wreak havoc in humans and wildlife. Exposure to endocrine disrupting chemicals may occur within the womb, at the workplace, at schools, home or from the ingestion of chemical residues in food and water. According to *Our Stolen Future* author and The Endocrine Disruptor Exchange (TEDX) president Theo Colborn, Ph.D., endocrine disrupting chemicals have been reported in semen, the ovarian follicle, the womb environment, and in breast milk at elevated concentrations, and have also been implicated in studies of marine mammals showing increased sterility, growth retardation, perturbation of immunologic function, and reproductive abnormalities.

EPA, in response to a 1996 Congressional mandate, published in June 2007 a list of 73 pesticides and related chemicals that it intends to review for endocrine disrupting effects, once it finalizes its standards for review. EPA’s list of 73 pesticides selected for evaluation includes only 29 of the 56 pesticides that are defined as known or suspected endocrine disruptors by the European Union and TEDX. In effect, EPA has chosen to neglect 27 widely recognized endocrine disruptors while prioritizing for review 44 pesticides not identified as endocrine disruptors by other scientific bodies, draining resources and further delaying the regulatory impact of the program. The scientific evidence of the endocrine disrupting mechanism—which defies classical “dose-makes-the poison” toxicological theory with exquisitely low doses causing effects based on timing of exposure—spurred Congress to

act in 1996 as a part of the *Food Quality Protection Act (FQPA)*. The law required EPA to, within two years of passage, “develop a screening program, using appropriate validated test systems and other scientifically relevant information, to determine whether certain substances may have an effect in humans that is similar to an effect produced by a naturally occurring estrogen, or such other endocrine effect as the Administrator may designate.” It is still not clear when EPA will meet its (eleven years overdue) statutory duty under FQPA. As if to send a signal that this was a meaningless gesture that should not concern the public, the agency in its *Federal Register* notice stated, “Nothing in the approach for generating the initial list provides a basis to infer that by simply being on this list these chemicals are suspected to interfere with the endocrine systems of humans or other species.”

### **J. Issue: Protect from Low-Dose Exposure**

Harm resulting from especially low-dose exposure to toxic chemicals is now accepted in scientific circles. However, the pesticide regulatory process still does not reflect the science. Warren Porter, Ph.D., professor of zoology at the University of Wisconsin, Madison, identifies in the scientific literature and his own laboratory work findings in some experimentation that, “The low dose effect is the greatest effect.” Dr. Porter is talking about effects on the brain. What spurred Dr. Porter to delve into this topic was a headline in his local newspaper in 1997 which read, “Cost of Accommodating: As special education grows, so does the cost of staffing.” He was astonished, as anyone would be, by the statistics between 1990 and 1995: 87 percent increase in the emotionally disturbed, 70 percent increase in learning disabilities.



Studies find that learning capacity is adversely affected at the lowest doses, typically referred to as an inverse-dose response.

So as he looked into this, he found that it reflected a nationwide trend. Laboratory studies trying to capture a possible connection between pesticide exposure and children's ability to learn —not something evaluated by the current regulatory review process— find that learning capacity is adversely affected at the lowest doses, typically referred to as an inverse-dose response. That throws out the window using only 'dose makes the poison' theory and maximum tolerated dose experimentation, the foundation of EPA's regulatory review process. Dr. Porter in his lab confirmed the ability of pesticides to induce learning deficiencies. One area where he sees a low-dose effect is on the prefrontal cortex of the brain, that portion of the brain that scientists believe is responsible for executive function, or planning, reasoning and problem solving. He found that one chemical actually affects different parts of the brain, some effects seen at lower doses and others at higher doses. Dr. Porter and other scientists have also found an inverse-dose response causing immunosuppressive effects, showing the greatest effect at the lowest doses.

#### **K. Issue: Protect from Chemical Mixtures**

Mixtures, synergisms, and breakdown products are not considered

or being studied. Yet, pesticides in water usually occur in mixtures of several compounds rather than individually. More than 50 percent of all stream samples reviewed by USGS contain five or more pesticides, and nearly 25 percent of all groundwater samples contain two or more pesticides. Studies indicate that combinations of pesticides, which are not currently regulated, may exhibit additive or, in some cases, synergistic effects.

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### **Research has found that neurological, endocrine, immune, and developmental effects may show up only when pesticides are tested in combination.**

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Synergism results in a combined effect that is worse than the additive effect of single compounds. While the effects of a single pesticide in water may be known, the effects of that pesticide combined with other pesticides are

unknown and virtually unstudied. Initial research has found that neurological, endocrine, immune, and developmental effects may show up only when pesticides are tested in combination, not individually.

Combinations of pesticides with other contaminants in water (or in food, air, or other media) have not been taken into account. Combinations with nitrates and with disinfection byproducts may have adverse synergistic health effects, including miscarriages and birth defects.

#### **L. Issue: Incorporate Pesticide Drift into Assessment of Pesticide Exposure**

It has long been understood that pesticides, when applied aerially or by ground equipment, drift off the target site, either as a direct result of air currents or after volatilization of particles that become airborne. David Pimentel, Ph.D. wrote in "Pesticides: Amounts Applied and Amounts Reaching Pests" (*BioScience*, 1986) that "[O]ften less than 0.1% of [pesticides] applied to crops actually reaches target pests." Continuing, he said, "Thus, over 99% moves into ecosystems to contaminate the land, water, and air." A study published in the *Journal of the American Medical Association* finds that students and school employees are being poisoned by pesticide use at schools and from drift off of neighboring farmlands. The study, "Acute Illnesses Associated with Pesticide Exposure at Schools" (Vol. 294, No. 4, pp455-465, 2005), by Walter A. Alarcon, M.D. (National Institute for Occupational Safety and Health) et al, analyzed 2,593 poisonings from 1998 to 2002 from three surveillance systems and found that 31% of poisonings are associated with pesticide drift exposure from farmland.



According to published research, often less than 0.1% of [pesticides] applied to crops actually reaches target pests.



Kauai's Garden Island Newspaper reported that in January 2008 10 students and one teacher were sent to the hospital complaining of dizziness, headaches and nausea after pesticides drifted onto the Waimea Canyon Middle School campus. Similar incidents occurred at the school in January 2007 and in November 2006, closing the school for several days. In May 2007 a similar incident made students sick at Kahuku High and Intermediate School on Oahu. Ameri-Turf applied Orthene on 9,000 square-feet of its property that borders the school. The pesticide drifted onto the school grounds. As a result, the school was shut down for three days due to lingering fumes. Soil samples taken by state agriculture officials confirm the drift incident. Incidents reported in Hawaii are not isolated events, but characteristic of pesticide use.

With respect to non-target exposure to waterways, utilization of the National Pollutant Discharge Elimination System (NPDES) permit process, under CWA is essential. There are three main reasons why sole reliance on FIFRA does not offer adequate protection of water, the environment, or health: (i) Under FIFRA, EPA does not take into account unique local conditions when regulating risk and designing labels and has no official mechanisms to do so; (ii) Direct deposition of pesticides to water occurs even when the label is properly followed; (iii) The risk assessment process used to register pesticides under FIFRA has admitted limitations that create the need for complimentary laws.

There have been several federal court cases concerning this issue. Those that have ruled, have ruled in favor of use of NPDES permits, including the Sixth Circuit Court of Appeals. (*National Cotton Council et al. v. EPA*) It is important to note that EPA originally did submit an amicus brief in the Talent case agreeing that a NPDES permit was required in addition to following the FIFRA label.

EPA's risk assessment process that determines label requirements under FIFRA operates in a national context using probabilistic modeling that averages risk factors and assumes full label compliance that does not include non-target impacts that occur from pesticidal drift, run-off and other unintentional exposure. The CWA NPDES permits work in tandem with FIFRA to consider local environmental conditions and the specific impacts of pesticide application to local water bodies. As the 9th Circuit District court has also determined, the warnings on the label simply do not and cannot address specific water quality issues, such as accumulations of toxic chemicals specific to a certain site, concerns for the local habitat or sensitive population species that may be monitored locally. NPDES permits under the CWA on the other hand are highly local and specific and include monitoring and reporting requirements that can track which pesticide applications



**The federal government has changed its position on human testing of pesticides for registration purposes several times since the 1990's.**

may occur and when. FIFRA has no "tools" of local monitoring to collect such information.

The Congressional Research Service report on this issue plainly stated that the NPDES permits under the CWA are undertaken by states to protect water quality, "...because the federal government lacks the resources for day-to-day monitoring and enforcement." (Pesticide Use and Water Quality: Are the Laws Complimentary or in Conflict, April 25, 2005. RL32884, p. 4.)

### **M. Prevent Testing of Pesticides on People**

Under federal law, the person or company attempting to sell or distribute a pesticide in the United States must obtain a registration from EPA. In evaluating potential new pesticides and their uses, EPA uses data from pesticide manufacturers to determine if a pesticide, when used lawfully, can be used without causing harm to human health and to the environment. Pesticide manufacturers must submit studies to EPA to aid in this determination. Human studies may be included in submissions to EPA for consideration. Registrants are not required to make these studies public.

In December 2001, EPA requested the National Academy of Sciences (NAS) to provide recommendations regarding human testing research and associated scientific and ethical questions. In 2004, the NAS published its 208-page report, *Intentional Human Dosing Studies for EPA Regulatory Purposes: Scientific and Ethical Issues in 2004*. The Academy concluded that the standards of existing statements of ethical principles were both too "general" and also too "unclear, indeterminate, inconsistent, and even contradictory" to ensure that intentional human dosing





**Chemical sensitivity manifests itself as a range of incapacitating neurological and respiratory symptoms.**

experiments for EPA regulatory purposes would be ethical and scientifically valid.

At the conclusion of its investigation, the Academy set out 17 specific proposed principles for reform, which the Report enumerates as “Recommendations.” For example, the Academy proposed that human toxicity studies be conducted and used for EPA regulatory purposes only if: the study is “needed and scientifically appropriate,” for a study designed to relax public health protections by reducing the difference between acceptable levels of pesticides as determined by testing done on humans and testing done on animals, the experiment presents “a reasonable certainty of no harm to study participants;” and the study satisfies the highest ethical standards by, among other things, ensuring “free and informed consent of participants.”

In August 2005, Congress “directed EPA to promulgate a rule that “shall not permit the use of pregnant women, infants or children as subjects;” “shall be consistent with the principles proposed in the 2004 report of the National Academy of Sciences;” and “shall be consistent with...the principles of the Nuremberg Code,” a statement of experimental ethics under which Nazi doctors were prosecuted for crimes against humanity following World War II. The ten principles now known as the “Nuremberg Code” establish, among other things, that “[t]he voluntary consent of the human subject is absolutely essential;” that human experiments may be conducted only if the study will provide results that are both “necessary” and “unprocurable by other methods or means;” and that human experiments must be “so designed and based on the results of animal experimentation...that the anticipated results will justify the performance of the experiment.”

### **The 2006 EPA Rule**

In February 2006 EPA issued its final Human Testing Rule. Although the Rule adopts many of the changes mandated by law, it fails to adequately comply with the law. EPA’s Rule bars only a subset of intentional dosing pesticide toxicity experiments on pregnant women and children; ignores many of the National Academy of Science’s proposed principles; and, deviates willfully from the Nuremberg Code’s most basic principles.

For example, the final Rule restricts third-party pesticide toxicity experimentation on pregnant women and children only if the researcher or study sponsor “intends” to submit the results to EPA for consideration under the *Federal Insecticide, Fungicide, and Rodenticide Act* or the *Federal Food, Drug, and Cosmetic Act*. In fact, EPA continues to accept pesticide toxicity experiments on pregnant women, infants and children if they are submitted for review under an act other than FIFRA or FDCA. The Rule fails to

ensure consistency with the Nuremberg Code by not prohibiting experiments on people who face any element of constraint and coercion. Particularly with respect to prisoners, the record does not support EPA’s summary conclusion that its Rule meets this standard. Indeed, EPA itself concedes that it has not yet reached a final position on the need for any additional protections for prisoners. Because the Rule fails to ensure that consent is both genuinely informed and truly voluntary, within the meaning of the Nuremberg Code, it violates Section 201.

National Resources Defense Council, Pesticide Action Network North America, Pineros y Campesinos Unidos Del Noroeste, Physicians for Social Responsibility-San Francisco, Farm Labor Organizing Committee, and Migrant Clinicians Network filed a petition against the EPA’s 2006 Human Testing Rule based on the grounds that it fails to comply with the law as mandated by Congress under Section 201 of EPA’s fiscal year 2006 appropriations act, signed into law by President Bush on August 2005.

### **N. Protect Those Who Are Chemically Sensitive**

Stronger protections are needed under the *Americans with Disabilities Act* (ADA) for those with chemical sensitivity (CS). Currently, CS is recognized as a disability on a case by case basis, but no provisions have been made in the accessibility standards for those with CS. Without the recognition of accessibility requirements for those with CS and the adoption of accessibility standards, accommodation at work, school, housing, and recreation areas is extremely difficult for many who suffer from CS with debilitating effects. A disability is defined as “a physical or mental impairment that substantially limits one or more of the

major life activities of such individual” [42 U.S.C. 12102(2)(A)]. Chemical sensitivity “substantially limits one or more of the major life activities of such individual.” CS manifests itself as a range of incapacitating neurological and respiratory symptoms that occur as a result of low level exposure associated with common pesticide toxic chemical use. CS takes a huge toll on individual lives and results in unnecessary loss of productivity.

While ADA rules do include the applicability of the act to people with CS on a case-by case basis, given that the illness “substantially limits one or more major life activities,” they do not explicitly state in the proposed accessibility standards specific access requirements to assist people with CS. While recognizing CS is helpful, accessibility issues still pose a great challenge to those with chemical sensitivities. The proposed rule (73 FR 34466) errs in omitting environmental illness and chemical sensitivity as a standard (not a “case-by-case”) disability, with a justification that people with the illness may have a “sensitivity [that does] not rise to the level needed to constitute a disability.” This statement is false and out of step with environmental medicine which diagnoses CS as a chemical-induced illness from which patients suffer with debilitating effects that need accommodation. Similar to other disabilities, a diagnosis reflects a finding that patients’ function is impaired, with varying severity, as a result of exposure to toxic chemicals. Eliminating their chemical exposure substantially increases their ability to function and lead normal lives.

### **O. Issue: Ensure Fumigant Pesticide Regulations Maintain Protections for Public Health**

Fumigants are gases or highly volatile liquids or solids that are injected or dripped into soil to sterilize a field before planting. Crops that use fumigants are strawberries, peppers, orchard crops and vineyards, tomatoes, tobacco, potatoes, carrots, and other root crops. They are also used to fumigate stored foods, greenhouses and imported goods.

Fumigants are all highly toxic gases that are applied at very high application rates (75–400 lbs/acre). Once applied, they are very prone to drift and have caused multiple community poisoning incidents in the recent past. Major recent poisonings include:

- Earlimart, CA (Tulare County), November 1999, metam sodium, 178 people poisoned
- Arvin, CA (Kern County), July 2002, metam sodium, 270 people poisoned
- Lamont, CA (Kern County), October 2003, chloropicrin, 235 people poisoned
- Salinas, CA (Monterey County), October 2006, chloropicrin, 60 people poisoned
- Yerington, NV, October 2007, chloropicrin, 24 people poisoned.

Chronic effects are known to result from even low-level exposure to fumigants, including asthma and other respiratory ailments, neurological disease, birth defects, and certain types of cancer.

As part of the reregistration of older pesticides mandated by the 1996 *Food Quality Protection Act*, EPA conducted a simultaneous review of several soil fumigant pesticides in a process called the “Fumigant Cluster Assessment.” On July 16th, 2008, EPA published its decision in the *Federal Register*. The decision affects the fumigants methyl bromide, metam sodium, dazomet, chloropicrin, and iodomethane.

EPA’s decision is the culmination of a four-year public process involving discussions with farmers, pesticide manufacturers, farmworkers and their advocates, people living in rural communities, and public interest groups that are concerned about bystander and worker exposure. EPA’s reregistration decision includes many mitigations that will substantially reduce, but not eliminate, fumigant poisonings. Among the most significant are:

- Buffer zones around fumigated fields: The size of the buffer zone depends on the number of acres treated, the application method, and the application rate used. Minimum buffer zones are 25 feet. Buffer zones are currently required for most fumigants in California, but for most states, the use of buffer zones for fumigants is new. Buffer zones between pesticide applications and waterways are commonplace.
- Posting of buffer zones to let bystanders know when they are entering an area where their health might be in danger from fumigant exposure.
- Either: 1) monitoring for fumigants in air at the edge of the



Scientists are working on alternatives to methyl bromide, which has been used for years as a soil fumigant, particularly in strawberry fields.

buffer zone to ensure the safety of neighbors, or 2) notification of neighbors that a fumigation will be taking place.

- Notification of state agencies in advance of fumigation to facilitate enforcement activities.
- Strengthened worker protections.
- Requirements for fumigant manufacturers to train applicators and emergency responders and do community outreach.

EPA has taken a strong first step towards protecting human health with these mitigations, but evidence from models, air monitoring data, and poisoning incidents indicates that the buffer zones EPA has chosen are not large enough to completely eliminate fumigant poisonings. In the final reregistration documents, EPA indicates that it expects that some poisonings will still occur, even with the mitigation measures in place. Particularly problematic weather conditions are inversions, when the air is calm and any fumigant emissions from a treated field are trapped near the ground and concentrated. Weather inversions are a frequent occurrence in the evenings in agricultural valleys, and they are a factor in many of the fumigant mass poisonings that have been investigated.

Least-toxic alternatives to dangerous fumigant pesticides are already in use to control nematodes, plant diseases and weeds, and include: use of pest-resistant plant varieties, crop rotation, use of cover crops, use of green manures or mustard seed meal, soil solarization, use of predatory nematodes, and use of microbial pesticides. The United Nations Environment Program (UNEP) has extensive documentation of the available non-chemical and chemical alternatives to fumigants. (See <http://www.panna.org/fumigants/alternatives> for links to the UNEP documents and more detail on available alternatives.)

Use of these ecologically sound practices needs to be greatly expanded, but less than one percent of the research dollars at the USDA currently goes towards developing and implementing these safer alternatives. There is an urgent need for USDA to prioritize investment in helping farmers move away from these toxic fumigants. The new mitigation measures set forward by EPA for the fumigants will also provide incentives for farmers to try out less toxic pest-control methods.

We urge action to ensure that the regulations proposed by EPA in July 2008 remain the final decision and outcome of this reregistration process.

## Transparency and Accountability

### P. Issue: Disclose “Secret Ingredients” in Pesticide Products

Inert is a term, according to FIFRA, used for all pesticide product ingredients except those specifically designed to kill or otherwise harm the product’s target pest. However, these ingredients are neither chemically, biologically, or toxicologically inert and can be hazardous for human and environmental health.

Currently, so-called “inert” ingredients, which make up as much as 99+% of many common pesticide products, are kept secret and are not listed on the pesticide labels. The chemicals used as “inerts” include many that EPA has officially determined, under other statutory programs, to be hazardous or toxic. Among these are “inert” ingredients known or suspected to cause cancer, central nervous system disorders, liver and kidney damage, and birth defects, as well as a variety of short term health and ecological impacts. Numerous studies indicate that inert ingredients may

enhance the toxicity of pesticide formulations to the nervous system, the cardiovascular system, mitochondria, genetic material and hormone systems. A consumer would never know about their presence in consumer products under current labeling requirements. Pesticides products actually contain formulations of a number of different materials, including active and inert ingredients, as well as contaminants and impurities. Additionally, pesticides, when subject to various environmental conditions, break down to other materials, known as metabolites, which are sometimes more toxic than the parent compound.

So-called inert ingredients can be as or more toxic than the active ingredient—active ingredients in other pesticides, toxic chemicals, chemicals regulated under other statutes, or hazardous wastes, solvents, propellants, wetting agents, petrochemicals and synergists. Inerts, often petrochemicals like toluene or xylene, are generally the largest percentage of ingredients of a pesticide product. Despite this,



“Inert” ingredients can make up as much as 99% of many common pesticide products.



inert ingredients are treated as trade secret information and not disclosed on product labels. Contaminants and impurities are often a part of the pesticide product and responsible for the product hazards. Dioxin and DDT have been identified as contaminants in pesticide products.

Most pesticide manufacturers claim that the identities of inert ingredients are trade secrets, so there is little information about them that is publicly available. In addition, most of the health and safety testing required for pesticides does not include the inert ingredients.

A scientific article (*Lancet*, 1988) cites a Japanese report of 56 cases of toxic exposure to Roundup™ between June, 1984 and March, 1986. The individuals had ingested the pesticide, and experienced a range of adverse effects to their respiratory, cardiovascular, and central nervous systems; nine patients died. An analysis of the findings identified one of the so-called “inert ingredients” (inerts) in the formulation, polyoxyethyleneamine (POEA), as the cause of harm. POEA is a surfactant, a chemical that was added to help glyphosate work its way into the plant tissue. Roundup™ has contained as much as 15% POEA.

Inert ingredients pose serious concerns, not only because the identity of these chemicals are withheld from product label information, but also because the effects of these “secret” ingredients on human and environmental health have been underplayed, despite many now being recognized as endocrine disruptors. Among phthalates, widely found in pesticide formulations as inert ingredients, 19 are found in 75% of urine samples from normal men in a Centers for Disease Control (CDC) study. Three types of phthalates—diethylhexyl phthalate, di(n-octyl) phthalate, and di(n-hexyl) phthalate—have been found to interfere with the thyroid system, as well as reducing testosterone synthesis, which then leads to a host of male developmental and reproductive disorders, such as decreased sperm quality, cryptorchidism (the absence of the scrotum) and hypospadias (defect of the urethra).

Connecticut Attorney General Richard Blumenthal, in filing a petition in 2006 with 13 other attorneys general, said, “EPA is inexplicably misleading the public - allowing hazardous substances in pesticides to be identified simply as ‘inert.’ EPA’s failure to demand disclosure of these harmful substances is unconscionable. These chemicals should be disclosed to consumers so they are fully informed and empowered to protect themselves. Our position that EPA immediately require that these chemicals are identified



**An inert ingredient added to the herbicide Roundup as a surfactant was once considered more toxic than the active ingredient.**

on pesticide labels is supported by science and common sense, as well as law.”

Northwest Coalition for Alternatives to Pesticides (NCAP) filed a companion petition to the attorneys general petition in 2006. In *NCAP v. EPA* (Civil Action No. 94-1100), a federal court ruling stated that “inert” ingredients should not be given blanket trade secret protection by EPA under FOIA. The lawsuit focused on six herbicide products, and the court decision was limited to those particular products. The ruling paved the way for anyone to use FOIA to request information about “inerts” on a product-by-product basis. In January 1998, NCAP petitioned EPA to require listing of all ingredients on product labels. In July 2001, the petition was formally denied by EPA.

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**Some “inert” ingredients are known or suspected to cause cancer, central nervous system disorders, liver and kidney damage, and birth defects.**

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**Q. Issue: Review All Pesticide Ingredients In Consumer Products**

Section 201(q)(3) of FFDCFA, as amended by FQPA, does not support EPA’s position that without a pesticidal claim for a product the agency should not treat the toxic substance as a pesticide. As a result, there are a host of consumer products on the market containing pesticides for which manufacturers do not make pesticidal claims, thus skirting regulatory review for adverse impacts on health and the environment. Under EPA’s proposed rule, a pesticide could be incorporated into packaging material, result in a residue on food, while avoiding regulatory scrutiny. The fact that FDA may have sole jurisdiction over food packaging



agencies to withhold information whenever there is a “sound legal basis” to do so.

The Attorney General advised, “When you carefully consider FOIA requests and decide to withhold the records, in whole or in part, you can be assured that the Department of Justice will defend your decisions unless they lack a sound legal basis...” This follows on the heels of the dismantling of EPA risk management program website, which informed communities of dangers from 15,000 chemical plants and other industrial facilities nationwide. This move was made along side several other government agencies in removing “sensitive information” from their website. Pages removed include information on pesticides, chlorine and gasoline. Although community activists have lobbied for years for more open access to records, agencies now say terrorist access to these documents puts the public in danger.

#### **Groups are asking that the federal government release scientific data.**

should not exempt those toxic pesticides in food packaging from review under section 408 of FFDCFA, particularly in the case of food packaging for which there are no pesticidal claims even though it may contain pesticides. For food consumers, the question is whether the use of a substance known to have hazardous characteristics, regardless of a pesticidal claim, is being used and whether its use creates harmful residues.

#### **R. Issue: Ensure Full Disclosure of Known and Unknown Adverse Effects**

EPA’s “read the pesticide product label first” campaign suggests that strict compliance with the pesticide product label will be protective of health and the environment. In fact, EPA should WARN and ALERT people to the fact that it is not fully able to grapple with the difficult and complex issues that could begin to fully define pesticide safety. With that information, people could be informed to avoid pesticides to the extent possible. The product label should inform local political subdivisions and elected officials with full information on product hazards and unknowns, facilitating an opportunity to identify nontoxic approaches to management.

#### **S. Issue: Reinstate Public Access to Information**

Former U.S. Attorney General John Ashcroft issued a statement of policy encouraging federal agencies to resist FOIA requests whenever they have legal grounds to do so, according to an article from the FAS Project on Government Secrecy. This statement rejects the standard of “foreseeable harm” set by Attorney General Janet Reno in a 1993 memorandum, which promoted disclosure of government information through the FOIA unless it was “reasonably foreseeable that disclosure would be harmful.” The Ashcroft policy, instead, encourages Justice Department

(To view the FOIA policy statement, see <http://www.usdoj.gov/oip/foiapost/2001foiapost19.htm>. To view Attorney General Janet Reno’s 1993 memorandum, see <http://www.fas.org/sgp/clinton/reno.html>.)

This policy had a chilling effect that continued to affect the disclosure to the public after the departure of Mr. Ashcroft. This reluctance to disclose information to the public transformed itself into the agency, as a matter of course, denying fee waivers for those groups seeking information in the public interest. Prior to this time, EPA would waive fees associated with an information request if it “will contribute significantly to public understanding of the operations or activities of the government and is not primarily in the commercial interest of the requestor.”

In another important issue related to access to information and transparency, in 2007 USDA scaled back the National Agricultural Statistics Service data collection, and only gathered information on cotton, apples and organic apples. In 2008, USDA completely eliminated the program. The U.S. is now flying blind on pesticide use patterns except in the few states that have their own corresponding programs. The data is used by chemical groups, trade groups, public interest groups and government agencies to track pesticide use and safety, and advocates say it is the only reliable, publicly searchable database of its kind.

#### **Priority Bans and Phaseouts for Highly Hazardous Pesticides**

#### **T. Issue: Ban Persistent Bioaccumulative Wood Preservatives**

The heavy-duty wood preservatives rank with the most deadly chemicals on the market. EPA has classified all of the chemicals, as well as their contaminants, as known or probable carcinogens. Their continued use reflects a failure in the implementation of the

pesticide reregistration program, given that these chemicals and their contaminants (dioxins, furans and hexachlorobenzene) are severely hazardous, persistent and bioaccumulative chemicals for which there are safer substitutes. The use of toxic wood preservatives in utility poles and railroad ties are unnecessary given the availability of more appropriate materials such as recycled steel, cement and composite.

Wood preservatives, according to EPA's 2000 pesticide sales and usage statistics, account for 34% of all pesticide use, excluding chlorine and hypochlorite products, or 809 million pounds. We use almost as much wood preservatives in the U.S. as all other "conventional" pesticides (insecticides, herbicides, fungicides, etc.) combined, which account for 39%, or 926 million pounds, of all pesticide use (excluding chlorine products). The remaining 27%, or 661 million pounds, are categorized by EPA as "other" and "specialty biocides." Chlorine and chlorine hypochlorites account for an additional 2.5 billion pounds of pesticide use. (EPA 2008)

Given this huge volume of use, it is especially important that EPA not at any point in its risk assessment minimize, ignore, discount, dismiss or further postpone exposure or potential exposure assessments relating to people or the environment. In fact, EPA has neglected to assess fully the adverse impact of wood preservatives on people and the environment by failing to consider real world exposure and contamination. Given that this huge volume of chemical wood preservatives can be replaced economically with safer alternatives, EPA's analysis, dismissive of reality and science, only serves to prop up old polluting technology, causing serious yet unnecessary harm.

The agency acknowledged in the early stages of the reregistration process that there are risks associated with using PCP, CCA, and creosote including, but not limited to, their cancer-causing potential. However, in the cost-benefit analysis, it concluded that the benefits (purely economic) outweighed the costs (human health problems and the environmental contamination). Given this logic, we have every reason to believe that if suitable alternatives were available for the end-use products treated with these wood preservatives, the agency would cancel the registration of these products because of the environmental and health risks they pose.

Currently, alternatives for utility poles and railroad ties (the primary uses for these preservatives) are available, and therefore the original premise for allowing registration is no longer applicable. Countries around the world have embraced alternatives to PCP, CCA, and creosote treated utility poles and railroad ties that include concrete, recycled steel, and composites. EPA needs to follow their example and eliminate all possible sources of these toxic chemicals in our

environment according to its mission to "protect human health and the environment."

Utility poles, like railroad ties, do not have to be made of wood. One of the arguments used against alternatives to wood is that it will require a retraining of utility linemen and thus pose an occupational danger to them since they are not used to working with them. It is true that job-training will be required of any switch to non-wood utility poles, but the agency has also acknowledged in its discussion of alternatives to PCP that "as utilities adopt new materials there will be corresponding innovation to repair, install, and maintain these poles." The risk posed to linemen by working with poles treated with toxic chemicals far outweighs the risk of switching to a new product and the required re-training.

The primary argument used against alternatives to both utility poles and railroad ties is that their cost is prohibitive. However, these arguments often fail to take into account differences in the lifespan of treated wood versus concrete or recycled composite/ steel poles, and the fact that with some alternatives, such as steel and concrete, fewer poles or ties/mile are needed than for treated wood ones. The economic analysis also assumes disposal of treated wood poles/ties as is currently the practice. It is imperative that while such a great number of wood utility poles exist in the U.S., the disposal practices for these products be regulated. This would require that companies invest a significant amount more in proper disposal as hazardous waste. Therefore, an economic analysis that assumes current disposal practices will continue does nothing to address the real risks posed by treated wood.

(See <http://www.beyondpesticides.org/wood/index.htm> for background information and regulatory comments submitted in June 2008 on behalf of 50 organizations.)



EPA classifies the heavy duty wood preservatives as known or probable carcinogens.



## **U. Issue: Ban the Non-Medical Uses of the Hazardous Antibacterial Triclosan**

Antimicrobial pesticides are broad-spectrum poisons that in recent years have exploded on to the consumer market in a wide variety of antibacterial soaps, deodorants, toothpastes, cosmetics, fabrics, plastics, and other household and personal care products. Their intended purpose is to destroy or suppress the growth of harmful microorganisms, whether bacteria, viruses, or fungi.

However, with an increasing number of scientific studies two basic questions arise: Are they safe for human health and the environment? And, are they necessary?

Studies have increasingly linked one of the most common antimicrobials, triclosan (and its chemical cousin triclocarban), to a range of adverse health and environmental effects, from skin irritation, allergy susceptibility, bacterial and compounded antibiotic resistant, tainted water, and dioxin contamination to destruction of fragile aquatic ecosystems.

When introduced to the market in 1972, triclosan was confined to hospital and health care settings. An article in the journal *Clinical Infectious Diseases*, entitled "Consumer Antibacterial Soaps: Effective or Just Risky?" (2007), concludes that antibacterial soaps show no health benefits over plain soaps. This follows an 11-1 vote of the FDA Nonprescription Drugs Advisory Committee on October

20, 2005 in a statement that antibacterial soaps and washes are no more effective than regular soap and water in fighting infections.

These antibacterial substances have also been shown to persist in the environment, contribute to the increasing rates of bacterial resistance and cause adverse health problems in humans and wildlife species.

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**Antibacterial soaps and washes are no more effective than regular soap and water in fighting infections.  
- U.S. Food and Drug Administration**

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With respect to its most recent reregistration eligibility decision (RED) document, EPA still continues to ignore serious risks posed to public health. The agency has failed to address the impacts posed by triclosan's degradation products on human health and the environment, failed to conduct separate

assessments for triclosan residues in contaminated drinking water and food and is complacent in seriously addressing concerns related to antibacterial resistance and endocrine disruption. As such, the agency has still not proven that triclosan poses no unreasonable adverse effects to human health and the environment. (See <http://www.beyondpesticides.org/antibacterial/index.htm> for comments submitted to EPA on behalf of 37 organizations with a detailed critique of the limitations associated with the agency review.)

In addition to detailing specific inadequacies in the RED and its supporting assessments, the comments also express great concern with the overall governmental structure of, and approach to, triclosan regulation. That regulatory system is fractured, incomplete and uncoordinated. Thus, for example, the allocation of duties between EPA and FDA has left significant gaps in regulatory protection against credible environmental and health threats. Further exacerbating the problem is a pervasive attitude—both inter-agency and intra-agency—that any problem apparently falling within the regulatory mandate or authority of another agency or office need not—indeed must not—be addressed. A central fallacy in this attitude is the failure to understand the simple but frequent reality that the release of a harmful substance into the environment may constitute a violation of more than one environmental statute.

As noted at various points in the comments, the fact that an approved use of triclosan violates another federal statute only strengthens the basis for concluding that it will cause unreasonable



**Triclosan is a common ingredient in antibacterial soaps, deodorants, toothpastes, cosmetics, fabrics, plastics, and more.**

adverse effects on the environment under FIFRA. Rather than treating such an occurrence as an opportunity (or a mandate) to cease any further inquiry, affected agencies (or intra-offices) should work cooperatively in the interest of public health, safety and welfare. This notion goes to the heart of the objectives of environmental regulation, and this is why the *Food Quality Protection Act* incorporates concepts of cumulative risk and aggregate exposure assessment as a key requirement. EPA's narrow, skeptical attitude about environmental protection has been criticized by the United States Supreme Court. In *Massachusetts v. Environmental Protection Agency*, the Court addressed EPA's claim that it could not regulate greenhouse gas emissions because to do so would interfere with the U.S. Department of Transportation's statutory mandate to regulate mileage standards. The Court rejected the argument:



EPA finally argues that it cannot regulate carbon dioxide emissions from motor vehicles because doing so would require it to tighten mileage standards, a job (according to EPA) that Congress has assigned to DOT. . . But that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's "health" and "welfare," . . . a statutory obligation wholly independent of DOT's mandate to promote energy efficiency. . . The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency. (549 U.S. 497, 2007)

Because the prevalence of triclosan in consumer products has risen dramatically over the last decade, with findings of the chemical and its hazardous contaminants in the environment and human biomonitoring studies, the scientific data do not yet reflect the potential long-term effects of prenatal and childhood exposure to triclosan and triclosan-contaminated household dust, drinking water and food sources. The reregistration of triclosan does not uphold the standards of the 1996 *Food Quality Protection Act*, which seeks to estimate total risk over the life course in order to improve public health.

## **V. Issue: Withdraw Registrations of Particularly Hazardous Pesticides**

During the Bush Administration, EPA registered a new highly toxic fumigant pesticide for use in agriculture, methyl iodide. In 2007, EPA registered the new carcinogenic fumigant pesticide, methyl iodide (also called iodomethane), for one year; in October 2008, EPA granted a permanent registration to the pesticide. EPA registered this chemical despite serious concerns from environmentalists, farmworkers, rural residents and a group of over 50 eminent scientists, including two Nobel Laureates. These

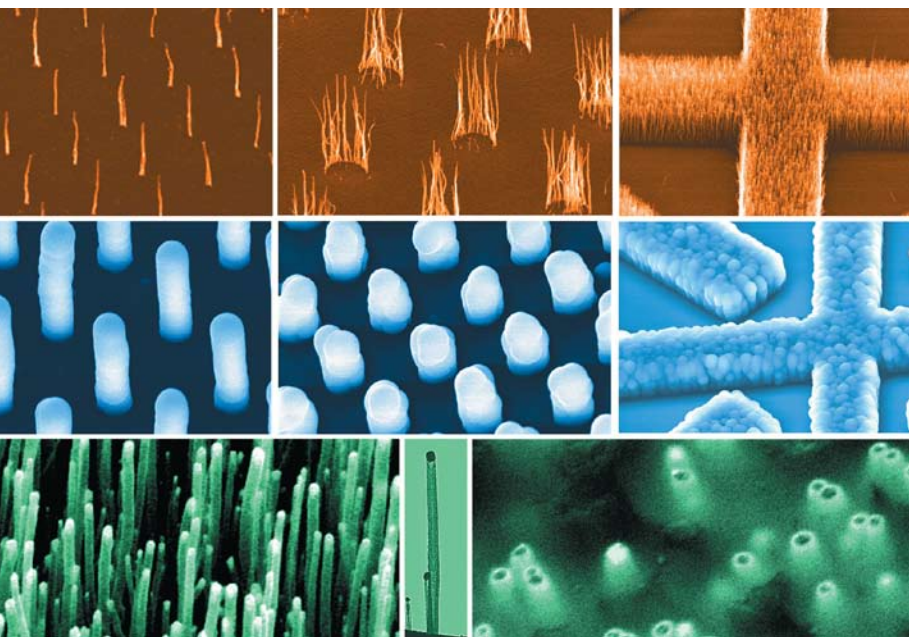
**Given that viable organic methods exist as an alternative, it is unnecessary to register hazardous pesticides.**

scientists sent a letter to EPA stating, "As chemists and physicians familiar with the effects of this chemical, we are concerned that pregnant women and the fetus, children, the elderly, farmworkers and other people living near application sites would be at serious risk if methyl iodide is permitted for use in agriculture." The letter goes on to explain, "Because of methyl iodide's high volatility and water solubility, broad use of this chemical in agriculture will guarantee substantial releases to air, surface waters and groundwater, and will result in exposures for many people. In addition to the potential for increased cancer incidence, EPA's own evaluation of the chemical also indicates that methyl iodide causes thyroid toxicity, permanent neurological damage, and fetal losses in experimental animals." The letter concludes, "It is astonishing that the Office of Pesticide Programs is working to legalize broadcast releases of one of the more toxic chemicals used in manufacturing into the environment." Iodomethane is carcinogenic and neurotoxic, and is toxic to the thyroid as well. Pregnant lab animals exposed to iodomethane miscarry and lose their fetuses.

Rural communities have repeatedly been poisoned by fumigant pesticides. It is time to move to much safer methods of pest control, not backwards to reliance on a chemical that is even more toxic than the fumigants currently in use. Methyl iodide is a threat to public health, is likely to contaminate groundwater and is not needed to build a secure, viable and healthy agricultural economy.

(For more information on the other priority pesticides recommended for phase-out, see items E (organophosphates), F (endosulfan) and H (lindane).)





NASA photographs of nanotubes.

### **W. Issue: Establish Moratorium on Pesticidal Nanotechnology**

Nanotechnology is a powerful new platform technology for taking apart and reconstructing nature at the atomic and molecular level. The same size and chemical characteristics that give manufactured nanoparticles unique properties —tiny size, vastly increased surface area to volume ratio, high reactivity— can also create unique and unpredictable human health and environmental risks. Nanoparticles are able to enter the lungs, pass through cell membranes, and possibly penetrate the skin. Once inside the body, many nanoparticles appear to reach multiple tissues and organs, including the brain, and likely also the fetal circulation. Nanomaterials may cause cell damage that science does not yet understand. In September 2006, Rep. Sherwood Boehlert (R-NY) said, “The potential danger to human beings and the environment is literally incalculable if we don’t understand how nanotechnology can interact with our bodies and our world.”

Increasingly, manufacturers are infusing many and diverse consumer products with nanoparticle silver (nano-silver) for its enhanced “germ killing” abilities. Nano-silver is now the most common commercialized nanomaterial. There are more than 260 nano-silver products currently on the market, ranging from household appliances and cleaners to clothing, cutlery, and children’s toys to personal care products and electronics. Silver is known to be toxic to fish, aquatic organisms and microorganisms and recent scientific studies have shown that nano-silver is much more toxic and can cause damage in new ways. A 2008 study showed that washing nano-silver socks released substantial amounts of the nano-silver into the laundry discharge water, which will ultimately reach natural waterways and potentially poison

fish and other aquatic organisms. Another 2008 study found that releases of nano-silver destroy benign bacteria used in wastewater treatment. The human health impacts of nano-silver are still largely unknown, but some studies and cases indicate that the nanomaterial has the potential to increase antibiotic resistance and potentially cause kidney and other internal problems.

Acknowledging the critical need for in-depth review of products utilizing nanotechnology pesticides, the EPA opened a 60-day public comment period (which closed January 18, 2009) in response to a petition filed by the International Center for Technology Assessment (ICTA) which demands the agency stop the sale of numerous consumer products with nano-silver. ICTA filed a legal petition in May 2008 challenging EPA’s failure to regulate nanomaterials in pesticides, which we urge you to grant.

### **X. Issue: Cancel Tolerances and Uses for Sulfuryl Fluoride and Assist with Alternatives**

Use of the highly toxic sulfuryl fluoride raises serious widespread and unnecessary public and worker health hazards, both short and long-term. In 2004, EPA set tolerance levels for the pesticide. The tolerance level established for sulfuryl fluoride was challenged by three environmental organizations in 2004 and 2005. In November 2006, the petitioners requested a stay of the tolerances; their objections are cataloged in a filing made to EPA that same month, entitled ‘Objectors Consolidated Objections to Final Rules Establishing Tolerances for Residues of Sulfuryl Fluoride and Fluoride Anion. (OPP-2005-0174; OPP-2003-0373) The New York State Attorney General’s Office, the Union representing EPA’s scientists and professionals in Washington DC, and over 7,000 citizens wrote to EPA expressing their support for the petition and urged the agency to terminate the food uses of sulfuryl fluoride.

In March 2006, the National Research Council (NRC) of the National Academy of Sciences published a report entitled *Fluoride in Drinking Water: A Scientific Review of EPA’s Standards Committee on Fluoride in Drinking Water*, National Research Council, of the National Academy of Sciences. This report responded to a request from EPA for a review of the scientific basis of the Maximum Contaminant Levels and Maximum Contaminant Level Goals (MCL/Gs). The NRC decisively concluded that the MCLG is unsafe and should be lowered. This conclusion is directly relevant to the sulfuryl fluoride risk assessment because the MCLG is the health standard that OPP used to assess the safety of the tolerances and aggregate exposures to fluoride ion. With the NRC concluding that the MCLG is unsafe, there can be no confidence in the determination of safety reached through the OPP risk assessment.

Three offices within EPA are involved with issues related to sulfuryl



fluoride and/or fluoride. These offices are Office of Prevention, Pesticides and Toxics Substances (OPPTS), the Office of Water (OW), and the Office of Air and Radiation (OAR). The Office of General Counsel (OGC) supports each Office.

There are many material issues of fact raised which can clearly be resolved based on ascertainable data, and which, if resolved in petitioners' favor, would be significant enough to overturn the tolerances. These issues include, but are not limited to:

- Many Americans are exceeding the RfD from aggregate exposures to fluoride ion.
- The tolerances can produce doses of fluoride ion that exceed the doses documented to produce acute toxicity in humans.
- EPA's use of the same mg/day RfD for infants as adults is an unprecedented action which violates the basic principle of toxicology that bodyweight affects a person's response to a chemical.

EPA has not given adequate consideration to all relevant evidence on the record, and this fact has been amply demonstrated in petitioners' November 2006 submission. The most egregious example of EPA's failure to consider all relevant evidence is the agency's decision to adopt the same mg/day RfD for children as

adults. Indeed, as detailed by petitioners, it is now a matter of public record that, in adopting this RfD, EPA failed to consider a wide body of relevant evidence, including: (i) published studies showing skeletal damage at the mg/kg/day dosages that EPA now allows for children; (ii) published studies showing that children's bones accumulate significantly more fluoride than adults; and (iii) published studies showing that children can develop skeletal fluorosis in less than 10 years.

The failure of EPA to consider all evidence relevant to the purported safety of the new 8 mg/day RfD for children is perhaps best illustrated by the fact that EPA never issued a scientific defense of this change in policy. Instead, EPA defended the 8 mg/day RfD by using the same generic two-sentence explanation it had previously used to defend the prior 4 mg/day RfD for children. This brief explanation provided no reference, or response, to the long line of scientific evidence questioning EPA's unprecedented assumption that children can safely tolerate much higher mg/kg/day exposures than EPA considers safe for adults.

In agriculture and structural pest management, sulfuryl fluoride is replaced by organic agricultural practices and alternative structural approaches include heat treatments, cold treatments, borates, dessicating dusts, bait systems, and the Electrogun.

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## IV. Conclusion

With a vision to adopt clean, safe, effective and fair approaches to the management of our air, land, water, food system, and the built environment, we can stop the degradation of our environment, improve the health of our nation, and combat the global climate change crisis. Our current and increasing dependence on highly hazardous pesticides reflects a disregard for the sustainability of

the planet on which our future survival depends.

We urge serious consideration of this opportunity to reverse the toxic chemical treadmill that plagues our country and world and unnecessarily harms the health of people and the environment, and instead provide protection for future generations.



The following organizations have signed on to *Transforming Government's Approach to Regulating Pesticides To Protect Public Health and the Environment*. For comments and messages from individuals around the country, visit [www.transformingpesticidepolicy.org](http://www.transformingpesticidepolicy.org).

1. Jay Feldman, Beyond Pesticides, Washington, DC
2. Kathryn Gilje, Pesticide Action Network North America, San Francisco, CA
3. Monique Harden, Advocates for Environmental Human Rights, New Orleans, LA
4. Lewis Cuthbert, Alliance for a Clean Environment, Stowe, PA
5. Barry Zucker, Beyond Pesticides Ohio, Cleveland, OH
6. Alice Andrews, Beyond Pesticides Ulster County, New Paltz, NY
7. Julie Peterson, Beyond Today, Chicago, IL
8. Alan Cohen, Biological Pest Management, Washington, DC
9. Janet Nudelman, Breast Cancer Fund, San Francisco, CA
10. BURNT/ No Spray Nashville, Nashville, TN
11. Robina Suwol, California Safe Schools, Toluca Lake, CA
12. Patricia Clary, Californians for Alternatives to Toxics, Eureka, CA
13. David Chatfield, Californians for Pesticide Reform, San Francisco, CA
14. Lloyd Manchester, Canadian Earth Care Society
15. Adrienne Esposito, Citizens Campaign for the Environment, Albany, NY
16. Mike Giles, Cape Fear Coastkeeper, Wilmington, NC
17. Caroline Cox, Center for Environmental Health, Oakland CA
18. Meredith Niles, Center for Food Safety, Washington, DC
19. Glenn Wiser, Center for International Environmental Law, Washington, DC
20. Lawrence A. Plumlee, Chemical Sensitivity Disorders Association, Bethesda, MD
21. Michael Mullin, Choctawhatchee Riverkeeper, Banks, AL
22. Teresa DeAnda, El Comité para el Bienestar de Earlimart, Earlimart, CA
23. Sharyle Patton, Commonweal Biomonitoring Resource Center, Bolinas, CA
24. Maxine Centala, Concerned Citizens for Clean Air, Lincoln County, OR
25. Alexander Binik, De-Toxics Institute, Fairfax, CA
26. Gar Smith, Earth Island Journal, San Francisco, CA
27. R. Hamilton, Ecobuilding Network, OR
28. Sue Riedman, Ecological Health Organization, Berlin, CT
29. Tracey Easthope, Ecology Center, Ann Arbor, MI
30. Judith Robinson, Environmental Health Fund, Boston, MA
31. Connie Barker, Environmental Health Network, San Rafael, CA
32. Molly Hauck, Environmental Task Force, Bethesda, MD
33. Keith Olcott, Equal Exchange, West Bridgewater, MA
34. Lani Malmerg, Ewe4ic Ecological Services, Lander, WY
35. Carol Dansereau, Farmworker Pesticide Project, Seattle, WA
36. Jeannie Economos, Farmworker Association of Florida, Apopka, FL
37. Teresa Niedda, Farmworker Health and Safety Institute, Glassboro, NJ
38. Fritzi Cohen, Fearless Fund, Nahcotta, WA
39. Paul and Ellen Connett, Fluoride Action Network, Canton, NY
40. Wenonah Hauter, Food and Water Watch, Washington, DC
41. Michael Grenetz, Fuse Washington, Seattle, WA
42. Charlotte Wells, Galveston Baykeeper, Seabrook, TX
43. Leslie Marcuse, Good Nature Organic Lawn Care, Cleveland, OH
44. Suzanne Rosenblatt, Grass Roots, Shorewood, WI
45. Patti Wood, Grassroots Environmental Education, Port Washington, NY
46. Laura Weinberg, Great Neck Breast Cancer Coalition, Great Neck, NY
47. Claire Barnett, Healthy Schools Network, Albany, NY
48. Ken Kipen, Hilltown Anti-Herbicide Coalition, Ashfield, MA
49. Rick Hind, Greenpeace USA, Washington, DC
50. Tom B.K. Goldtooth, Indigenous Environmental Network, Bemidji, MN
51. Christiane Tourtet, International MCS Awareness, Tallahassee, FL
52. Christine Carpenter, Iowa Breast Cancer Edu-Action, Cedar Falls, IA
53. Tessa Hill, Kids for Saving Earth Worldwide, Minneapolis, MN
54. Marie Stockett, Lawrence Pesticide Free Parks Project, Lawrence, KS
55. Ruth Berlin, Maryland Pesticide Network, Annapolis, MD
56. Ted Schettler, M.D., Science and Environmental Health Network, Ames, IA
57. Russell Libby, Maine Organic Farmers and Gardeners Association, ME
58. Jean Lemieux, Massachusetts Association for the Chemically Injured, Andover, MA
59. Margaret O'Nan, McDowell Environmental Health Authority, Marion, NC
60. Lourdes Salvador, MCS America
61. Albert Donnay, MCS Referral and Resources
62. Sue Caroll, Missouri Safer Management of Pests and Landscapes, MO
63. Mary Lamielle, National Center for Environmental Health Strategies, Voorhees, NJ
64. Liana Hoodes, National Organic Coalition, Washington, DC
65. Alissa Bierma, Neuse Riverkeeper, New Bern, NC
66. Amy Goldsmith, New Jersey Environmental Federation, Marlton, NJ
67. Lynice Williams, North Carolina Fair Share, Raleigh, NC
68. ED Maltby, Northeast Organic Dairy Producers Alliance/Federation of Organic Dairy Farmers, MA
69. Steve Gilman, Northeast Organic Farming Association Interstate Council, Stevenson, CT
70. Aimee Code, Northwest Coalition for Alternatives to Pesticides, Eugene, OR
71. Dona Hippert, Oregon Toxics Alliance, Eugene, OR
72. Lynn Howard Ehrle, Organic Consumers Association, Finland, MN
73. Chip Osborne, Osborne Organics, Marblehead, MA
74. Susan Junfish, Parents for a Safe Environment, Moraga, CA
75. Nancy Black, Pesticide Awareness and Alternatives Coalition, Santa Barbara, CA
76. Paul Schramski, Pesticide Watch, Sacramento, CA
77. Peter Montague, Ph.D., Environmental Research Foundation, New Brunswick, NJ
78. Warren Porter, Ph.D., University of Wisconsin-Madison, Madison, WI
79. Deborah E. Moore, Ph.D., Second Look, Worcester, MA
80. Kristen Welker-Hood, Physicians for Social Responsibility, Washington, DC
81. Martha Dina Arguello, Physicians for Social Responsibility - Los Angeles, Los Angeles, CA
82. Bev Veals, Project SafeYard, Highlands Ranch, CO
83. Cheryl A. Gross, Protect Our World
84. Patricia M. DeMarco, Rachel Carson Homestead, Springdale, PA
85. Audrey Newcomb, Rochesterians Against the Misuse of Pesticides, Rochester, NY
86. Jim Rompel, Safe Effective Alternatives, Belleville, IL
87. Michelle Miller, Safer Building, El Sobrante, CA
88. Rachel Rosenberg, Safer Pest Control Project, Chicago, IL
89. Sejal Choski, San Francisco Baykeeper, San Francisco, CA
90. Amy Anderson, Save Our Cumberland Mountains, Jackson, TN
91. Jody Spear, Sierra Club Maine Chapter, ME
92. Isabelle Jenniches, StopTheSpray.ORG, Sacramento, CA
93. Karen Balthrop, Texans for Environmental Health, Austin, TX
94. Brian Wegener, Tualatin Riverkeeper, Tigard, OR
95. Liz Hitchcock, U.S. Public Interest Research Group, Washington, DC
96. Mardi Mellon, Union of Concerned Scientists, Washington, DC
97. Christine Ellis, Waccamaw Riverkeeper, Conway, SC
98. Wendy Dennis, Wakefield Climate Action Project, Wakefield, MA
99. Kathy Prior, Washington Toxics Coalition, Seattle, WA
100. Sandy Bihn, Western Lake Erie Waterkeeper, Oregon, OH
101. Emily Moore, Women's Environmental Institute, Minneapolis, MN
102. Suzanne Murphy, WORKSAFE, Oakland, CA