



Safe Pregnancy: What You and Your Family Need to Know About Toxic Risks

By Marc Lappé

A History of Denial

Records of birth defects have appeared ever since humans recorded their life experiences. Beginning with pictures from Egyptian stelae of dwarves and children with club feet, societies have recorded adverse birth outcomes with a mixture of awe and anxiety. Hogarth's famous engraving, "Gin Alley", was a social commentary on the destructive effect of the widespread abuse of alcohol in 19th century England. Hogarth included examples of flaccid, bawling infants that, with hindsight, we may recognize as examples of the Fetal Alcohol Syndrome. Ironically alcohol, this most ancient of birth defect-causing substance, was not recognized by the medical community until 1972. In that year, David Smith at the University of Washington finally convinced his colleagues that the subtle facial defects he had recorded over the previous decade comprised the Fetal Alcohol Syndrome. Children with this condition lack the characteristic dip between the nose and upper lip known as the "philtrum", often have a broad nasal bridge and wide set eyes. Typically, a child with Fetal Alcohol Syndrome has mental retardation and behavioral abnormalities as well.

We also know that we "missed" the severe mental and neurological signs of children born from parents with heavy metal poisoning from mercury and lead. It was not until the end of the 1960s when episodes like the mercury poisoning of a seaside community in Minamata, Japan that the medical community woke up to the harsh reality of environmental teratogens (from the Greek, *teratos*, for monster).

This delay in recognizing environmentally caused birth defects may reflect a deeper, society-wide aversion to exploring and categorizing varieties of human malformations. Instead of recording and reporting abnormal babies, researchers sometimes relegated defective babies to speedy burial with little or no post-mortem analyses. In the 1970s, as techniques to repair birth defects, such as cleft lip and palate, were perfected, journals that previously recorded the severity of many physical malformations of infants

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Toxics and Our Waterways

By Britt Bailey

Headline: Groundwater Contaminants Use Rises in 2002. Chemicals categorized as ground water contaminants increased by about 220,000 pounds (11 percent). Cumulative acres treated by pesticides increased by about 18,000 acres (1 percent).

-From California Department of Pesticide Regulation: Pesticide Use Report from 2002, released 11/13/2003

Contaminants in drinking water, notably heavy metals and pesticides, can compromise human well-being and the species that depend on good-quality water for their survival and reproduction. Preserving clean, fresh water is thus a major challenge in our local communities and throughout the nation. A key to protecting surface and ground water is reducing the introduction of pesticides into otherwise clean waters.



Gualala River: "Mouth of the Gualala River, Mendocino County." Photo by Britt Bailey

Historically, water has been considered an unlimited resource. One of the sources of high quality water, notably rivers and streams, quickly became a mainstay for disposing of manufacturing and development waste materials. As awareness of the extent to which our waterways became tainted with industrial wastes and sewage grew, a multitude of federal and state laws were spawned that specified criteria for preventing pollution and establishing water quality. The high profile incidents of the Cuyahoga River Fire in which a river itself had become an incendiary toxic soup, and the leukemia cluster in the Massachusetts town of Woburn (the "Civil

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In this Issue...

CETOS wishes you a wonderful and blessed holiday season. The holidays cause me to suspend my daily activities and reflect on the people who have not only supported and followed our work over the past years, but also have watched us progress. I would like to take the opportunity to give a special thanks to the Public Media Center and its artists for assisting us with our new logo and identity development, Dave Jordan who is managing and constantly updating our website with our latest materials, Patagonia, Inc. who assisted us by donating jackets for our Fall Fundraiser, and all of our members who make our educational efforts including our newsletters possible.

In this issue we draw upon our continuing interest in the ways in which toxic synthetic chemicals can affect human health and our ecosystem. CETOS mission has always focused on vulnerable populations

because it is these populations that are the first to be affected by the impacts of toxic hazards and are the least protected. Marc Lappé provides an article about what your family needs to know about toxic risks. This writing is an extension of our "Safe Pregnancy Initiative" which is in the process of developing public health handouts related to toxic risks during pregnancy. Our materials will be distributed through our local health clinics and available on our website, www.cetos.org. Britt Bailey writes about the ways in which pesticides used in intensive agricultural settings can move into surface and ground waters that we need for drinking water, recreation, and to support aquatic life including endangered and threatened organisms. And, Noah Chalfin provides an article on the results of our community wide toxics and health survey.

We hope you enjoy this issue of StopWatch, and we wish you a safe and healthy Holiday Season!

– Britt Bailey, Editor

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were supplanted with new ones, like the Journal of Plastic and Reconstructive Surgery, that reported on their successful treatment.

Part of this failure can be ascribed to a deep-seated antipathy to acknowledging the fallibility of human creation. Our general antipathy to recognizing or accepting "defective" infants as part of the human condition has deep historical roots. The Spartans discarded their defective newborns in a ritual whereby the gods were given an opportunity to throw back an abnormal infant cast over a windswept cliff, hence the expression, "thrown to the winds". Theoretically, if the child was not meant to be, it would be saved by divine intervention.

Today, we continue to deny the inevitability of human imperfection (approximately 1 in every 40 births will have either a minor or major malformation) and have become pre-occupied with having the "perfect" baby. In vitro fertilization techniques (IVF) have allowed a black market in "high quality" eggs and sperm. Ads have appeared in student publications at prestigious universities offering up to \$20,000 in fees for egg donors of the right makeup and grade point average—with the fine print acknowledging that no guarantee of even a normal pregnancy is assured. Ironically, new data on one form of IVF in which the sperm is injected directly into the egg show its use to be associated with an increase in birth defects!

Tracking Birth Defects

Today, little effort is being expended to use our vast computer resources to chart birth defects. A simple requirement that I advocated in the 1970s that hospitals instantaneously report defects along with GPS data about the residence or work address of the mother, has never been fully instituted. This changed in 1980 when birth defect concerns from exposure of thousands of unsuspecting persons to the MedFly spray (a mixture of bait and the pesticide, malathion) led the State of California to establish a registry of birth defects. A few so-called "clusters" of birth defects were recorded over the ensuing two decades, including an excess of open stomach defects in children born in the spray zone, as well as neural tube defects such as spina bifida and related abnormalities around the State. Unfortunately, virtually no effective follow-up of these clusters of defects has been done. In the most recent year, the State's budget for the Birth Defect Registry was reduced from over \$7 million to \$3.4 million for the coming year. With this cut, the hope of having a "real-time" record of defects linked to environmental exposures has been largely lost.

A Window of Vulnerability

Such a loss could not have come at a worse time. In spite of an acknowledged imperfect monitoring program, we continue to allow drugs into commerce that have hidden defect-inducing properties. While the FDA requires data be submitted on teratogenicity for all new drug applications, it does not bar the marketing of often potent teratogens. Birth defect-producing agents are secreted away among the cornucopia of new drugs that are designed to treat largely cosmetic problems. The history of one such drug, Accutane, is a kind of modern morality play. It began with a well-intentioned design to modify vitamin A to resolve a disfiguring skin problem. Accutane can cure severe, cystic acne but will typically persist of up to 3 months in a young woman's body. In spite of informative animal studies that showed vitamin A analogs to cause birth defects, it was only after Accutane was on the market that researchers found that the price of having "rescued" so many unattractive girls was a flurry of unwanted pregnancies—and Accutane-induced birth defects in some of their infants.

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Other more potent drugs like methotrexate, introduced in the 1950s to treat cancer, are notorious teratogens. In the 1960s and early 1970s when abortions were still illegal, such drugs were used by nurses and other health professionals to induce abortions. The tragic result was a plethora of new birth defect syndromes. In spite of the evidence that fetuses are exquisitely sensitive to even mildly toxic chemicals, physicians continue to prescribe potentially harmful drugs during pregnancy. In the case of anti-epileptic drugs virtually all of which produce birth defects, some drug manufacturers and physicians held to the historical belief that epilepsy itself was birth-defect inducing. Hence, it was justified to prescribe any effective anti-epileptic medications to pregnant women. While the FDA has encouraged pharmaceutical companies to list such products as proven teratogens in the Physicians Desk Reference, at least one company has steadfastly refused to do so.

This resistance of disclose real risks of potent medications makes it understandable that some physicians continue to risk disaster in prescribing drugs during pregnancy to treat or prevent marginal diseases. Even today, some doctors may be prescribing toxic medicines without testing first to determine if their patients are pregnant. While manufacturers have worked with the FDA to provide a “fail-safe” system to prevent prescribing drugs like Accutane to sexually active young women (e.g., by “requiring” that they be on contraceptives), unwanted pregnancies nonetheless occur.

In the 1950s and 1960s, over 2 million women took an estrogen-like drug called diethylstilbestrol (DES) in the mistaken belief that it would alleviate their risk for miscarriage (DES actually induced miscarriages!). It was only after Arthur Herbst, an alert obstetrician from Chicago found eight young women with a rare cancer of the vaginal epithelium and linked it to their mothers’ use of DES, that physicians reluctantly recognized that they had condemned a generation of DES daughters to a spate of reproductive problems. Daughters (and sons) of DES-taking mothers often have abnormalities of their genital system, making conceiving a pregnancy difficult if not impossible.

The experience with diethylstilbestrol (DES) remains a clarion call to be alert to unnecessary exposure of women to any toxic environmental agent or prescription drug during pregnancy. Astonishingly, even after its teratogenic effects became known in 1971, DES was used for a decade or more to stop unwanted lactation after abortion or delivery of an adopted infant. And it is still prescribed in some centers as an emergency post-coital drug. Today, many of these hoary teratogens still stalk the back wards of some hospitals and doctor’s offices where they are still misprescribed in the mistaken belief that they are safe to be used if a woman is not currently pregnant. In fact, as we saw with Accutane, some drugs stay in the body for months, and others given to men may impair their future fertility. And the most critical period of fetal vulnerability to a toxic insult is right in the first third or trimester of pregnancy, a time when many women may not even be aware that they are pregnant!

Environmental Causes

The modern risks of birth defects are no longer confined to the doctor’s office. In spite of the fact that most known birth defects are either the result of chromosomal imbalance or iatrogenic (doctor-generated) problems major risks persist. Teratogenic insults today take the form of often invisible chemical pollutants that insinuate themselves into water supplies or into homes from nearby hazardous waste sites or factories. The State of California’s Office of Environmental Health Hazard Assessment lists over 250 substances known to produce birth defects or developmental abnormalities that can be found in consumer products, manufactured goods or in the runoff from pesticide-treated fields.

Increasing evidence shows that exposure of farm-workers to pesticides is associated with an increased risk of miscarriage and possibly birth defects. Heavy metals such as lead and cadmium produce hidden harms when mothers pass them on to their growing fetuses. Other risks exist from common substances like cigarettes, alcohol or the solvents used in cleaning products, especially “degreasers” like trichloroethylene. Still other chemicals with the ability to produce genetic damage remain widely used, such as the pesticide called Mancozeb which is sprayed in vineyards. Based on animal studies, some of these pesticides can induce cancer during pregnancy (“perinatal carcinogenesis”) and pose as yet undetermined risks to a developing infant.

Under our new Safe Pregnancy Initiative (see pg. 7), CETOS has embarked on an early warning campaign to alert mothers to these harms and to invite them to take charge of their own environments while they are pregnant. This may mean reducing the intake of foods that are high on the food chain, such as mackerel, shark and tuna fish that contain high levels of mercury, to limiting their intake of shell fish and fatty meats that can have surprisingly high levels of dioxins. We also intend to provide guidance for healthy lifestyles that protect against birth defects by eliminating smoking, alcohol and drugs that are real hazards to developing infants. We advocate a good diet during pregnancy—and the addition of folic acid (400 micrograms/day) as a means to reduce fetal risk of birth defects.

CETOS intends to bring these often obscure-sounding risks into perspective, by emphasizing the steps we can take at home and at work to minimize the chances of encountering birth-defect causing chemicals or heavy metals. To do so, we will use our Safe Pregnancy Initiative’s goal of preparing bi-lingual materials to let our community know about how they can experience a more worry-free, healthful pregnancy!



CETOS Staff: Noah Chalfin, Britt Bailey, Marc Lappé

Genetics & Toxics News & Alerts

Genetics

- Enough Mendocino County voters signed a Genetically Modified Organism (GMO) ballot initiative which would suspend cultivation of GMO's. The initiative will be voted on in 2004.
- According to a nationwide survey of 1000 consumers conducted August 5-10, 2003, the Pew Initiative discovered that Americans' knowledge of biotechnology issues remains spotty. Other findings include that opposition has softened, though opinions regarding the safety of foods remains split. Some 89% of people surveyed agree that companies should be required to submit safety data to the FDA for review and that no genetically modified food product should be allowed on the market until the FDA determines it is safe. See: <http://pewagbiotech.org/research/2003update>
- A facet of the requirements for the commercialization of crops with built-in *Bacillus thuriangiensis* (Bt) pesticides has been requirement to plant refuges around crops to delay insect resistance. But, a new survey of 300,000 farms in the Midwest has found that nearly 20% of biotech corn farmers have failed to plant refuges of conventional corn around the perimeter of their crops. This survey was compiled by the USDA's National Agricultural Statistics Services and is available at <http://www.usda.gov/nass>
- Percy Schmeiser, a Canadian farmer found guilty two years ago for violating Monsanto's patent on Roundup Ready canola, will be heard on appeal in January 2004. This will be the first time an appellate court anywhere in the world will consider what infringement means on a patent to a genetically modified life form. Stay informed about the appeal at <http://www.percyschmeiser.com/>

Toxics

- Researchers at the Newcastle University Biology School in Britain have confirmed that garlic oil is effective against snails and slugs. Slugs and snails are typically regarded as garden pests and garlic oil represents a valuable product to repel them without harming beneficial insects.
- In response to Endangered Species Act lawsuits filed and won by non-profit environmental groups asserting the EPA has failed to consult with the Fish and Wildlife Service on potential impacts to species from exposures to pesticides. More than 200 chemical industry groups have asked the Bush Administration to seek immediate rules coordinating the endangered species programs of the EPA with the Services. Absent a final rule, the industry will remain vulnerable to lawsuits and could end in products being removed from commerce.
- California's Department of Pesticide Regulation has proposed new regulations for cancer causing and ozone depleting Methyl Bromide. According to the State of California, the key preventive measure is to cap methyl bromide applications to 270,000 pounds for every township, which is 36 square miles. The resulting exposure at this level would be 9 ppb for children and 16 for adults, substantially above the protective levels calculated by many toxicologists.

The National Academy of Sciences and California's Office of Environmental Health Hazard (OEHHA) both recommended 1ppb for children and 2ppb for adults. (This study can be found in the May 1 issue of the American Journal of Epidemiology) To reach those goals, applications would have to be capped at 20,000 pounds per 36 square miles.

See: www.cdpr.ca.gov/docs/legbills/rulepkgs.htm and www.panna.org for more details.

- Perchlorate, the main ingredient in rocket and missile fuel, is contaminating drinking water throughout the nation. Perchlorate can interfere with normal thyroid function and may cause cancer. Small disruptions in thyroid hormone levels during pregnancy can cause lowered IQ and larger disruptions cause mental retardation, loss of hearing and speech, or deficits in motor skills for infants and children.

In California, Arizona and Nevada, where testing has been most extensive, well over 20 million people drink water from public and private sources known to be polluted with perchlorate. This estimate includes millions of customers of 81 contaminated public water systems in California and approximately 20 million customers in the three states who get at least part of their drinking water from the perchlorate-tainted Colorado River. California's current provisional drinking water standard, which is only advisory, is 2 to 6 parts per billion (ppb). As recently as 1998, at least one study had shown an adverse effect of perchlorate at levels as low as 0.01 micrograms per kilogram of drinking water per day. More recent research has shown that even at this very low dose level; perchlorate induces significant effects on the levels of thyroid hormones in the mother, fetus and offspring.

- The California Department of Pesticide Regulation (CADPR) has released the State's pesticide data for 2002. Overall, the amount used increased from 150,000 million to 171,000 million pounds. There was a significant increase in reproductive toxics and known cancer causing chemicals. The primary increases were noted with the use of diuron, an herbicide that is also listed as a groundwater contaminant. Another chemical's use that increased significantly is metam-sodium a carcinogen and soil fumigant used as a replacement to methyl bromide. To view the 2002 data, see; <http://www.cdpr.ca.gov/docs/pressrsls/november13.htm>

Interested in Receiving "CETOS Pesticide/Toxics E-News Brief"?

The e-news brief, arriving in your inbox every 2-3 weeks, includes summaries of the top pesticide-related news items of interest with links to full reports.

To sign-up, simply send an email to enews@cetos.org.

Toxics and Our Waterways. Cont. from Pg. 1

Action” case) where two major companies contaminated drinking water, sparked more systematic policies and regulations to protect water quality.



Forestry Cutting: “Clear cuts behind the Sea Ranch, CA.” Photo by Britt Bailey

But efforts to control water pollution have been complicated by the countless chemical, biological, and physical processes that affect water quality. Sources of water pollution, including the runoff from agricultural activities, timber cutting, and land disposal of waste exacerbate the nation’s continuing remaining water quality problems. Sources such as these are dubbed “non-point” sources of contamination. Non-point includes water pollution from diffuse sources, for example leaching of fertilizers, runoff of pesticides, and storm water carried toxic petroleum residues from streets and parking lots. The extent to which pesticides and toxics move away from the site of application, whether in urban areas or more rural agriculture areas, remains underappreciated and continues to elude clean water policies and regulations.

According to an EPA’s 1992 National Water Quality Inventory, only 56% of river miles and 43% of lake acres have water quality that supports their desired and intended uses. In 1993, the Committee on Environmental Quality’s Twenty-fourth Annual Report stated that heavy metals and pesticides impair water quality in more nearly 42,000 and 58,000 miles of rivers respectively. And, in 1995, the New York Times reported agricultural herbicides especially atrazine were found in nearly all of the drinking water tests performed in 29 Midwestern cities.

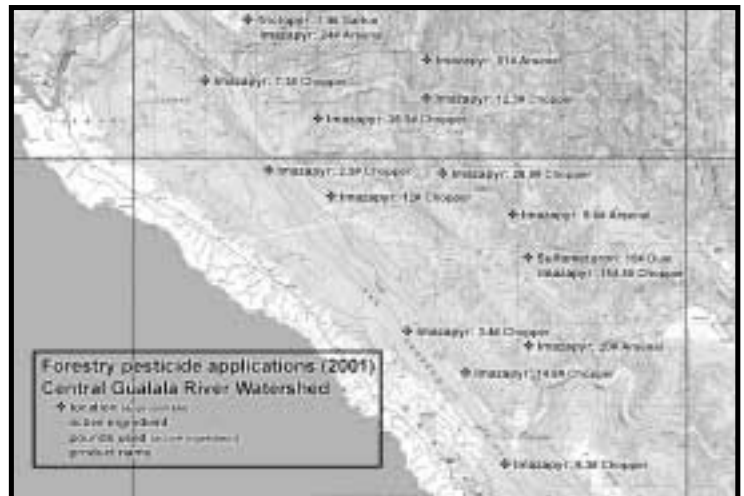
A predominant source of this contamination stems from the overuse and over application of pesticides. While pesticides are an important aspect of modern agriculture, many have the potential to move off-site and become ecological contaminants. It is estimated that 70-90% of ground-applied pesticides and only 25-50% of aerially applied pesticides actually reach their target area. Once pesticides move away from their targeted application, they can jeopardize the health of individual organisms and ecosystems. Increasing numbers of researchers point to the application of pesticides as being a significant factor that impacts on biodiversity.

In spite of this lack of control over their environmental fate, every year the United States agricultural industry introduces into the environment over 900 million pounds of pesticides as a byproduct of

food production for worldwide consumption. The chronic ecological effects of pesticides are often not seen unless there is a large pesticide spill causing death to species on a broad scale. Such a catastrophe occurred ten years ago in the Sacramento River spill of metam sodium, a highly toxic soil fumigant. The pesticide effectively sterilized up to 5 miles of the water near Dunsmuir. Less visible impacts are often chronic in nature and create indirect effects. These subtle effects can include alterations to the food chain, reproductive system damage, lesions, tumors, genetic damage, and disruptions to physiology and the hormonal system.

As an example of the ways in which pesticides can effect the hormonal systems of fish, researchers have evaluated organochlorine pesticides and polychlorinated biphenyls in tissue; phthalates, phenols, and polycyclic aromatic hydrocarbons in bed sediment; and dissolved pesticides in water. Findings showed that no significant differences in steroid hormones were detected for male fish, but hormone levels in females from the northern and southern portions of the Midwest US were significantly different from other regions of the country. The strongest pattern common to both males and females was a drop in hormone ratios as dissolved pesticide concentration increased. The presence of significant correlations between biomarkers and contaminants are evidence that fish in some streams may be experiencing endocrine disruption, leading to imperfect sexual maturation and other reproductive harms.

Predicting the ways in which pesticides will act in the environment is difficult because they break down in different ways, creating degradates and metabolites with varying toxicities from the active pesticide ingredient. For example, carbaryl, a widely used insecticide (which also happens to be one of the most commonly identified pesticides in streams by the United States Geological Survey) has a breakdown product, 1-naphthol. While 1-naphthol is nontoxic in the terrestrial environment, in an aquatic environment 1-naphthol is more toxic to mollusks and three species of marine fish than is carbaryl itself.



“Applications of Forestry Pesticides, Central Gualala River Watershed.”
For full report see: www.cetos.org/criticalhabitat/

Another example of a breakdown product being more toxic than its active ingredient is the chemical mancozeb. Mancozeb is a fungicide used widely in wine grape production to control downy mildew. Mancozeb is considered a probable human carcinogen

CETOS Non-Toxic Tips

Over the course of the past few years, CETOS staff has been involved in a number of Proposition 65 cases where products have been found to contain heavy metals at high enough levels to warrant cancer or reproductive harm warnings based on a one-time use. We wanted to share some of our work with you and offer ways to avoid exposure to certain materials. Here are a few tips based on our experience:

Lead

Because lead is a recognized hazard to human development, you and your spouse may want to avoid exposures especially if you're planning to become pregnant. Among the products that may pose a hazard are some painted and hand-decorated glassware, leaded glass crystal, soft PVC tool handles, PVC coated strings of Xmas lights, some soft plastic products including children's toys, possibly some plastic coated raincoats, and older computer cable casings. Additionally, several products used in auto care contain lead, such as battery cable leads and posts. Some Chinese medicinal herbs may also contain excessive levels of lead. Look for Proposition 65 Warnings on these products and avoid hand contact—or make sure you wash your hands thoroughly after contacting them.

Mercury

Fluorescent lights can contain mercury vapors that can be released if the bulb is broken. Additionally, certain medical supplies, especially older models of thermometers contain mercury: you will see it as a silvery substance in certain glass thermometers. If a fixture or thermometer breaks, do not attempt to discard the glass and mercury or to vacuum it up. Call your HazMat service or local disposal company for advice.

Mercury is also found at high levels in certain seafoods, notably mackerel, shark, large tuna fish, Chilean sea bass, and tilefish. The FDA recommends avoiding eating such seafoods if you are pregnant. (By contrast, salmon is relatively mercury-free).

Cadmium and Arsenic

Arsenic treated wood can still be found in stores and home supply centers. It should be well marked as a Proposition 65 hazard, usually at the end of the board. Take care to handle any such products with gloves—or better, don't buy it in the first place—as arsenic poses a particular hazard to children. Also, make sure your child's play equipment does not contain arsenic treated wood, usually in the form of chromated copper arsenate (CCA). Wood products are commonly "green" dyed or tinted, although brown dyed wood is currently in use.

Cadmium can be found in batteries. Broken batteries should not be handled or burned. Re-chargeable batteries in general should be disposed of with your hazardous waste.

Some Chinese herbs can contain excessive amounts of all of these heavy metals. Some already have Proposition 65 notices on them: in general, practitioners of Chinese medicine recommend that no Chinese herbs should be consumed during pregnancy.

Following these general tips should help you and your families avoid some potentially dangerous products.

Toxics and Our Waterways. Cont. from Pg. 5

and reproductive toxin, but not because of its active ingredient. Mancozeb breaks down into ethylene thiourea (ETU), a chemical considered a probable human carcinogen and reproductive toxin.

Who is Regulating Pesticides?

The Environmental Protection Agency is charged with regulating pesticides used in commerce. But, the EPA does not manage "non-point source" pollution. The EPA only regulates active ingredients, not the secondary components of pesticide compounds nor the chemical's breakdown products, metabolites, or degradates. While the EPA acknowledges that key data is missing on the byproducts of the pesticides it registers, it lacks a procedure in place to regulate additional pesticide components.

Even considering the known data and research for active pesticide ingredients, researchers are consistently uncovering new and under-appreciated risks posed by pesticides. As an example, diazinon, an insecticide discovered widely in our nation's streams, seems to have harmful effects at extremely low doses that are not seen at higher levels. At extremely low doses (0.1 parts per billion), researchers have shown that salmon homing and olfactory related behaviors are affected. These behaviors are necessary for the salmon's reproduction, and therefore its recovery.

What Can We Do?

The quantity and quality of surface water is important for many activities: consumption, recreation, transportation, waste assimilation, agricultural production, and industrial use. Because land use within a watershed largely determines the quality of the local surface water, pesticides used should be assessed, monitored, and locally managed.

By reducing overall pesticide use, using short lived (low persistence) pesticides, protecting vulnerable systems and areas, and reducing transport—all of which can occur simultaneously with educational efforts and progressive policy—we can fundamentally safeguard our nation's waters.

The Critical Habitat Project is dedicated to these goals. We are already providing pesticide data by regionally based watersheds. By making available understandable and comprehensible pesticide data, communities can better assess, monitor, and manage public waterways.

The Critical Habitat Project has completed the pesticide inventory for the Gualala River Watershed. See www.cetos.org/criticalhabitat/ or call 707-884-1700 for further information.

Our New Logo



Results of Safe Pregnancy Project Community Survey

By Noah Chalfin

In the middle of August, CETOS sent over 3,000 copies of a health awareness survey to post office box-holders in the local community. The survey was designed to gauge the community's general perception of environmental threats to pregnancy. The purpose of gathering this information from the community is so that as CETOS progresses with its "Safe Pregnancy Project", materials and training that we produce will accurately target gaps in the public knowledge about the relative severity of risks to pregnancy. We have been very pleased with the responses we have received, and are using the valuable data in our ongoing work related to protecting pregnant women from environmental hazards.

The Surveys were mailed to box-holders in Gualala, Point Arena, Sea Ranch, and Manchester. To date, CETOS has received approximately 330 completed surveys, a response rate of about 10%.

While there were no "right answers" to any of the questions, it is clear from the responses, that our community has a good general understanding of which risks pose the greatest threats to pregnant women. This was indicated by the overwhelming response of concern about exposure to both alcohol and cigarettes. Closely following these well-documented risks was the awareness about the risks posed by exposure to pesticides in the form of in-home pest control products. While this risk category has not received media notoriety on the scale of alcohol and cigarettes, in the scientific community there is widespread acceptance that exposure to pesticides during pregnancy can cause adverse birth outcomes, including both physical and mental retardation. Because pregnant women may spend a greater-than-normal amount of time in their homes, exposure to pest-control products used in their home is a significant concern.

While we at CETOS were generally impressed with the depth of awareness (and knowledge) about environmental risks to healthy pregnancies, we are somewhat concerned about the lack of attention given by the respondents to the risks posed by eating fish. Although there are no overt health risks posed by eating fish, the extent of contamination of the consumer fish supply by heavy metals such as mercury and other toxic chemicals such as dioxins and PCB's may pose a significant threat to prenatal development. This is particularly true for fish high on the aquatic food chain, (such as swordfish and shark) although most fish, including tuna, have been shown to contain trace amounts of these hazards, which may adversely affect pregnancy. Because of this discrepancy between the general response of the community to this hazard and our (CETOS') understanding of its severity, we will be targeting fish consumption as one of the major public knowledge gaps that our project will help to fill.

In the survey, we asked respondents to identify themselves by age and gender. Of the completed surveys we received, 78% were sent by women, with 22% by men. The age distribution ranged from 18 to over 90. The vast majority of the responses came from the over age 40 group (81%). While this is largely indicative of the demographics of our community, this age group does not reflect the major childbearing age group nationwide.

While our work will generally be aimed at educating those families that are planning to have children, we cannot overlook the value of educating all age groups. While the 18-40 age group represents the greatest number of pregnancies, we believe that the over 40 age group should be targeted as well. By teaching the after-child-bearing years community about the environmental risks to pregnancy, in turn it can educate younger family members (children, grandchildren, nieces/nephews, etc.) about pregnancy safety.

Overall, we at CETOS have been extremely impressed by and grateful for the thoughtful responses we have received from our pregnancy health survey. The results we have obtained will be a valuable tool in the development of our work related to protecting unborn children from environmental hazards. As we move forward to producing and distributing educational materials to our community about risks to pregnancy, we will be able to incorporate the survey results, so that previously under-appreciated risks will be emphasized.

Please refer to the accompanying bar graph for a depiction of the survey responses. "Answers are shown from left to right beginning with question 1."

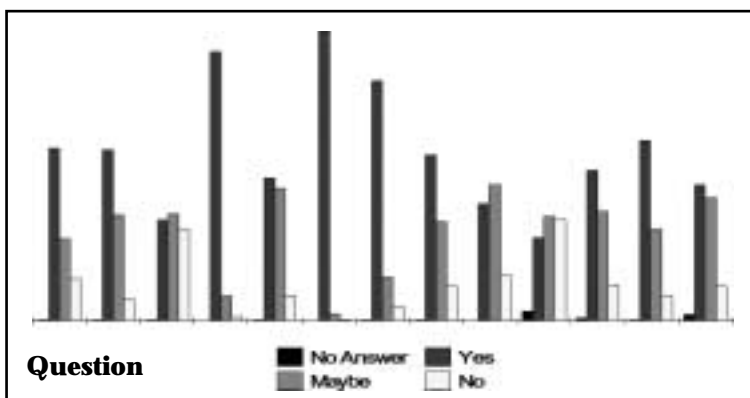
In response to the questions:

"If you were pregnant or knew someone who was pregnant, would you be concerned about . . ."

1. Eating certain types of fish
2. Eating unwashed or unpeeled fruits and vegetables
3. Drinking tap water
4. Drinking alcoholic beverages
5. Drinking coffee, tea, or other beverages containing caffeine
6. Smoking cigarettes, or being around people who smoke
7. Being exposed to pest control products in the home
8. Being exposed to cleaning products in the home
9. Being exposed to mold or mildew
10. Using a dry cleaning service
11. Being involved in painting, welding, or ceramic activities
12. Spending time in a yard where chemical-based pest control or fertilizer products might be used.
13. Using a hot tub or sauna

Available answer choices to the following questions were: "Yes—very concerned", "Maybe—somewhat concerned", and "No—not really concerned".

Community Survey Results:



*In the near future we will be publishing more extensive results from the community survey on our website – please refer to www.cetos.org for more information on the Safe Pregnancy Project and other CETOS activities.

Friends of the Center for Ethics and Toxics

Since 9/11 we have had some precarious financial moments at our little non-profit by the Sea, though we seem to have weathered the worst of the storms. In these times, our passions and desires to make social and scientific change have only strengthened. We would like to take this opportunity to thank those of you who have given generously in 2003.

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A very special acknowledgment to those businesses and persons who have provided goods, services or given of their precious time!

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Melissa Gosland
Trish Warner
Alice Diefenbach
Alan Levine
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Dave Jordan

Thank You

Thank You

Thank You

A Walk in the Woods

By Marc Lappé

Out here, away from the twice breathed air
Woodsy creatures seek solace in their silent lairs

Oblivious to the lumbering giants above
Who know not what fronds are for or how to love.

They burrow in the leaf mold of the forest floor as
The blows of last year's loggers cast

Scythes of sunlight on the ground to show
The way for joggers who course unknowingly

Through this once verdant swath,
running blindly along their busy path.

With leafy waves, our giant redwood trees sweep
The sky of the worst of our daily toxin seep

They probe the heavens, sift the air gladly
To filter our foibles, sieving the good from the bad

Reasonable people might now inquire
Will this tiny blue planet tire?

What will we do without the trees?
Must all life be brought to its knees?

Pass us over. Lose the race.
Cease pursuit of this maddening pace!

"Blow-by, blow-by",
The stripped and stifled forests cry,

So those who scurry and toil below
Can rally and begin to re-grow

And move their babies to new treetop villages
Beyond the reach of those who pilfer and pillage

Forest homes to build their nasty pleasure domes.

ANNOUNCEMENTS

• **CETOS' staff has been working on a new look!** We have been busy this summer refreshing our website and, with the help of the Public Media Center, developing a new logo (see pg. 6). Please check our newly refreshed website to find out about latest program areas, latest research, and our new look.; www.cetos.org

• **Announcing the arrival of *Engineering the Farm: The Social and Ethical Aspects of Agricultural Biotechnology***, Edited by Britt Bailey and Marc Lappé (Island Press, June 2002).

Engineering the Farm offers a wide-ranging examination of the social and ethical issues surrounding the production and consumption of genetically modified foods. Contributors include; Dr. Paul Thompson, Lori Andrews, Dr. Peter Rosset, Frances Moore Lappé, and other critical thinkers in the field. Call 1-800-828-1302 to order or visit www.islandpress.org.

• **CETOS is looking for NEW MEMBERS!!** Your membership supports our outreach efforts and provides educational materials for the general public. We are an independent non-profit, 501(C)(3), dedicated to protecting public health and the environment. Please make checks payable to TIDES/CETOS, PO Box 673, Gualala, CA 95445. Basic membership is \$30.00 though additional donations are welcome. All contributions are tax-deductible to the full extent permitted by law.

• **CETOS Co-Director appeared on the Today Show, October 27, 2003** to discuss the impacts of agricultural biotechnology. Call or email our office if you would like to see a copy of the interview with Katie Couric.



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