



Environmental Health Assessment Program  
800 NE Oregon St., Suite 640  
Portland, OR 97232

RE: COMMENTS ON HIGHWAY 36 CORRIDOR EXPOSURE INVESTIGATION

8/9/2013

Dear OHA, and ATSDR Investigation Team,

Beyond Toxics is providing these comments on the Oregon Health Authority's (OHA) Public Health Assessment for the Highway 36 Corridor Exposure Investigation. Your draft report was released on May 9, 2013.

Beyond Toxics is a non-profit chartered in the State of Oregon and founded in 2001. **We use** environmental justice engagement and community-based environmental research to ensure environmental protection and health for all communities. Serving a unique role in Oregon, Beyond Toxics advocates for environmental justice and human rights values based on sound environmental research. We pursue meaningful advancements in Oregon's environmental policy.

The stated purpose of the Public Health Assessment is to “fill an important data gap that will allow us to determine if people are being exposed to pesticides in the Highway 36 corridor, and if so, the health implications of these exposures (ii).” Beyond Toxics' comments are based on:

- Ten years of experience as an environmental advocate providing community assistance for rural Oregonians seeking help and solutions to forestry pesticide spray exposures.
- An in-depth analysis of the spray records collected for the Investigation Area, 2009-2011. Our examination of the pesticide spray records and our GIS and policy examination will provide a level of informed analysis that will help the Investigation Team meet their state purpose.

Our comments address the following topics:

1. Public Health Assessment Investigation Strengths
2. Public Health Assessment Investigation Gaps
3. Pesticide detections in urine sampling and implications for human health
4. Low-level, chronic health effects from repeated exposures to pesticides for children
5. Patterns of forestry chemical applications in the study area
6. Comparison of Washington and Oregon Forestry Practices Act and policy issues related to aerial applications of herbicides in a watershed and near rural residential areas

## **Issue 1: Public Health Assessment and Investigation Strengths**

1. The Public Health Assessment (PHA) confirms that residents in the Triangle Lake study area have been exposed to pesticides and that those exposures have been verified through biomonitoring and urinalysis.
2. The PHA points out that there is a limited but growing body of evidence on health effects from exposure to multiple pesticides, which may pose potentially greater risks than a single chemical exposure. This investigation confirms that participants in this study were exposed to more than one pesticide. The data also strongly suggest that the exposure is low level and chronic.
3. The PHA draws attention to the fact that this investigation cannot determine the health effects that rural residents can experience from low level, chronic pesticide exposures.
4. Referencing a literature review, the PHA cites evidence that pesticides can be expected to drift over many miles, certainly 2 – 4 miles, and likely more than 4 miles. Based on this evidence, the PHA will continue to determine the source of the pesticide exposures and will develop and deploy an air sampling plan for forestry and agricultural pesticides.
5. The PHA makes a number of important points about long term issues and next steps that must be address to protect public health, including:
  - a. Develop consistent pesticide application record keeping;
  - b. Allow public notification of pesticide applications in such a way to ensure that the public can protect themselves, particularly vulnerable populations;
  - c. Taking action to ensure that agencies shall coordinate, collaborate and share resources to serve the public good;
  - d. Additional biologic testing is needed, including testing for a larger range of pesticides in both human bodies and the environment;
  - e. Continued access to pesticide spray records;
  - f. Widespread air sampling before and during pesticide sprays;
  - g. Acknowledging that residents have the right to know in advance about pesticide sprays – when, where, what and how much – so that there might be some opportunities for vulnerable people and families with children to take precautionary actions.

## **Issue 2: Public Health Assessment and Investigation Gaps**

1. The Public Health Assessment (PHA) verified that pesticides used in forestry aerial spray applications were found at detectable levels in the urine of local residents, however the OHA Investigation failed to address that this fact would likely constitute a violation of the pesticide label and would be an illegal use.
2. The PHA states that the available evidence suggests that reported pesticides uses in the area “may have contributed to the levels detected in the participants’ urine,” but demurs from identifying a source of Atrazine. The PHA fails to do the necessary analysis to determine a source. Because Atrazine is a restricted pesticide, its legal use is only in commercial forestry or agricultural applications, not by non-licensed residents in the area. Thus the source of Atrazine metabolites detected in urine samples would be commercial forestry or agricultural uses.

3. The PHA fails to adequately address the potential for low-level, chronic health effects from repeated exposures to pesticides. The use of the phrase “not expected to harm people’s health” does not correlate with the types of ongoing exposures for these rural residents. OHA has not acknowledged that forestry and Christmas tree pesticide applications are a long-standing issue for residents in other Oregon rural communities, that the issue is not isolated to Triangle Lake. Oregonians from Tillamook all the way to Josephine counties have long complained to the Pesticide Analytic Response Center (PARC) about health harms from what is suspected to pesticide exposures from tree farming and harvesting practices. The Report treats the Triangle Lake study area data as if it is an isolated situation, with no prior history of complaints and no relationship to complaints filed with PARC or ODA from other Oregonians living near commercial forestry operations. Not only is this PHA a “snap shot in time,” it is also a small case study indicative of pesticide exposures happening all over this state.
4. The PHA fails to adequately address the potential for low-level, chronic health effects from repeated exposures to pesticides, especially for children. OHA must separately evaluate exposure of children to pesticide drift and immediately impose safeguards to protect children from pesticide exposures. OHA cannot prove that repeated, low-level and chronic exposures to 2,4-D and Atrazine are safe for children. The PHA acknowledges that Atrazine is an endocrine disruptor, which can pose a serious health risk to fetuses, infants and children. As such, any conclusions that these exposures are below levels expected to harm children’s health are misleading and false. The final report should omit any statement suggesting that the Investigative Team thinks that the level of exposure to pesticides is not expected to harm children.
5. The PHA fails to address the fact that 2,4-D was detected in urine samples of 92% of the residents tested in fall 2011, despite that fact no 2,4-D was used in forestry or agricultural applications during the fall, with the last reported 2,4-D spray occurring in May 2011. It is unlikely that 92% of the residents used any 2,4-D products in the fall months, particularly since many of the residents do not use any pesticides on their residential property. The PHA should add a discussion as to whether 2,4-D may be more persistent in the environment than previously reported, might have a longer urinary half-life than previously reported, or that 2,4-D exposures might be from residual environmental exposures. The report should make recommendations about future investigations be to better understand the fate of 2,4-D in a forestry ecosystem and to understand how the (latent) exposure is occurring.
6. Conclusion 9 appears erroneous. The agency concluded that there is insufficient information to confirm that local pesticide applications are the source of Atrazine found in the urine of participating Highway 36 investigation area residents. To the contrary, all the data indicates that forestry aerial sprays were the source of the atrazine metabolites. The only documented use of atrazine in the study area was forestry aerial sprays, and urine levels showed increases above earlier levels when tested pre- and post- aerial sprays using Atrazine. Atrazine is a Restricted pesticide and is not allowed to be used on residential properties or by non-licensed applicators.

7. The basis of the decision for Conclusion 11 is misleading. Atrazine or 2,4-D were not detected in drinking water samples taken in fall 2011, most likely because neither chemical was used by the commercial pesticide operators since spring 2011. It is possible that spring sampling would find pesticide detections. Thus, drinking water cannot be eliminated as a potential exposure pathway for future exposures.
8. The Investigation Team has failed to acknowledge their responsibility to uphold human rights. State and federal governments are responsible for regulating agricultural, forestry, industry, manufacturing and other sectors to protect the public's health. It is a basic human right to have full access to a clean and healthy environment. It is a human right not to be exposed to hazardous chemicals that have trespassed onto one's own private property from another property. Ignoring and denying basic human rights erodes trust in state and federal agencies and officials, and those responsible for perpetuating policy decisions that do not protect the public health.
9. The basis of the decision for Conclusion 19 and 20 are misleading. Beyond Toxics has long served as a community resource from outside the community. Our organization is well informed about the pesticide exposure issue, has monitored the community's response to the problem for many years, and has provided leadership over time. We observe that a great deal of frustration and friction arises from the lack of credible and meaningful response from state agencies and the Board of Forestry. The community needs a response from the government that respects citizens' rights not to be poisoned and eliminates pesticide exposure from chemical trespass. Beyond Toxics has witnessed years of demeaning censure and disparagement from members of the PARC Board in response to Oregon residents who have come before them. These are simple people who attempted to obey the regulations and protocols of filing pesticide exposure complaints with state agencies and giving testimony to both civil servants and policy decision-makers. They have become frustrated and upset with how they are treated. We know of many people who have simply given up trying to communicate with PARC; their complaints about exposures are not being considered in the current investigation because they have become "invisible" to the government.

Denying meaningful public input and blaming the impacted community for conflicts and dysfunction is a classic violation of the principles of environmental justice. This entire Investigation should adopt an environmental justice lens and furthermore require that state agencies represented on the PARC Board and the Board of Forestry receive environmental justice trainings.

The EPA defines environmental justice and the public participation mandate thus:

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. **Fair treatment** means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. **Meaningful involvement** means that: (1) people have

an opportunity to participate in decisions about activities that may affect their environment and/or health; (2) *the public's contribution can influence the regulatory agency's decision*; (3) their concerns will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected. [accessed 8/8/2013 at <http://www.epa.gov/environmentaljustice/basics/ejbackground.html> ]

10. By treating the Highway 36 Investigation as an isolated incident, the PHA fails to assess the overall risk of pesticide exposure and how the increase of that risk is related to Oregon's forestry chemical policy. The Oregon Forest Practices Act is a 40 year old policy and is ineffective in protecting rural communities from the impacts of forestry operations for their homes, schools, gardens, drinking water and other activities; the OFPA fails to monitor pesticide applications and the environmental fate of these chemicals, fails to ensure that any aerial practice does not exceed the product label recommended maximum height of ten feet which is used by the EPA to assess drift risk off-site drift; does not address weather, slope, wind direction and swath adjustment for moving wind and fog; and does not address deposition, run-off and chemical-laden sediment in streams.

### **Issue 3: Pesticide detections in urine sampling and implications for human health**

**Facts:** The PHA report states that both the community collected urine samples in the spring of 2011, as well as the samples collected by state and federal agencies in the fall of 2011 confirmed that residents were being exposed to 2,4-D. In many cases the level of 2,4-D was "higher than levels found in the general population." (p.2) Atrazine was also detected in the urine samples taken in spring 2011. In the fall 2011, 92% of the EI participants had detectable levels of 2,4-D in their urine. This 92% figure excluded children six years old and younger. Other chemical products that were sprayed by industrial forestry companies, including Hexazinone, Triclopyr, Glyphosate, Clopyralid, Imazapyr, Metsulfuron methyl, and Sulfometuron methyl were not tested.

#### **Gaps and Problems:**

**Increased Aerial Applications:** The Investigation did not comment on the significant increase in the use of herbicides from spring 2009, to spring 2010 and then again in spring 2011. In fact, there was a 226% increase in aerial applications of herbicides over the three year period. The increase corresponds with the increase in public health complaints from residents in the Lake Creek watershed. The report should acknowledge the correlation between increased herbicide spray and public health problems and complaints.

**Numbers of participants with detections of herbicides in their urine:** The PHA does not address whether the finding that 100% of residents in spring 2011 and the 92% of residents in fall 2011 had detectable levels of herbicides in their urine is "normal." Is it "normal" to have 92% and 100% of residents in a small, isolated community test positive for herbicides? Also the PHA did not comment upon the significant increase in 2,4-D and Atrazine detected in some participant's pre-spray urine samples and post-spray samples taken in spring 2011. The PHA

glosses over the health ramifications of pesticide detections that were above the NHANES 75<sup>th</sup> and 95<sup>th</sup> percentiles. The statistical significance level (p value = 0.06) suggests that there is a high likelihood that commercial pesticide use is correlated with pesticides detected in urine samples. The final PHA report should do more to address the pervasive presence of commercial and, in the case of Atrazine, a restricted herbicide, and the public health policy implications of off-site pesticide occurrences.

**Incorrect Data in the PHA:** 1) On page 21 and 23, the PHA concludes that only two commercial applications of pesticides occurred prior to the urine sampling on August 30 and 31, and that these were ground pesticide applications. However, according to the official spray records obtained by Beyond Toxics, one aerial spray took place on 8/18 and three aerial sprays took place 8/28-29 (see table below). OHA did not do urine testing for the chemicals used in late August, 2011, nonetheless, it is important to include the full data set in the report.

Date	Notification #	Operator	Chemicals	Type of Spray	Number of Acres
8/18/11	2011-781-00567	Weyerhaeuser	Glyphosate; Metsulfuron methyl; Imazapyr; Methylated Seed Oil	Aerial	92
8/28/11	2011-781-00559	Starker	Sulfometuron methyl; Glyphosate; Induce	Aerial	33
8/29/11	2011-551-00325	Starker	Sulfometuron methyl; Metsulfuron methyl; Glyphosate; Induce	Aerial	50
8/29/11	2011-551-00335	Starker	Sulfometuron methyl; Metsulfuron methyl; Glyphosate; Induce	Aerial	38

2) On page 23, the PHA states that “eight of the thirteen known ...pesticide applications that occurred during fall 2011 ... used Glyphosate.” However, according to the official spray records obtained by Beyond Toxics, there were thirteen instances of Glyphosate use.

8/2/11	2011-781-00405	Aug 2/Rosboro/95 acres	95	G I M S Dy
8/18/11	2011-781-00567	Aug 18/WEYCO/92 acres	92	G I M Mso
8/28/11	2011-781-00559	Aug 28/Starker Forest/33 acres	33	G S In
8/29/11	2011-551-00325	Aug 29/Starker Forest/50 acres	50	G M S In
8/29/11	2011-551-00335	Aug 29/Starker Forest/38 acres	38	G M S In
9/9/11	2011-551-00269	Sept 9/Giustina Resources/137 acres	137	G I M S Syl
9/20/11	2011-781-00221	Sept 20/WEYCO/48 acres	48	G I M S Mso
9/20/11	2011-781-00567	Sept 20/WEYCO/57 acres	57	G I M Mso
9/20/11	2011-781-00567	Sept 20/WEYCO/60 acres	60	G I M Mso
9/20/11	2011-781-00625	Sept 20/WEYCO/66 acres	66	G I M S Mso

9/20/11	2011-781-00625	Sept 20/WEYCO/48 acres	48	G I M Mso
9/20/11	2011-781-00625	Sept 20/WEYCO/76 acres	76	G I M Mso
9/23/11	2011-781-00632	Sept 23/Freres Lumber/160 acres	160	G M Sta

**Legend:**

G – Glyphosate; I – Imazapyr; M – Metsulfuron methyl; S – Sulfometuron methyl; In – Induce MSO – Methylated Seed Oil; Sta – Stayput

3) The PHA contains no information on how chemical tank mixes (including adjuvants and inert ingredients) may accentuate or exacerbate other chemicals interactions between environment and human biomarkers.

**Multiple Chemicals:** The study acknowledges that laboratories may not have the technical capability to test biomarkers for exposure to pesticides other than Atrazine and 2,-D. There are biomarkers for Glyphosate; the PHA needs to include an explanation of why Glyphosate was not tested and describe plans to include Glyphosate biomarkers in future studies. More explanation is needed to describe the potential presence of the other pesticides used in the area as potentially damaging to human health.

**Tank Mixes:** The pesticide records prove that timber companies are using tank mixes of pesticides and adjuvants. In other words, Beyond Toxics’ review of the spray records confirms that it is a common forestry practices to concoct and spray mixtures of chemicals in each pesticide application event. Commercial foresters often refer to these tank mixtures as “chemical soups.” Examples of tank mixes include:

- ☐ 2,4-D, Atrazine, Hexazinone, Foambuster
- ☐ Chlopyralid, Hexazinone, Foambuster
- ☐ Glyphosate, Imazapyr, Metsulfuron Methyl, Sulfometuron Methyl, Methylated Seed Oil

There are many versions of tank mixes, in addition to the three examples above, taken from the spray records. Choices of tank mixes are made independently by the pesticide applicator. There are no regulations to cover the practice of mixing more than one active ingredient, inerts and adjuvants. Adjuvants, such as Foambuster and methylated seed oil are also toxic chemicals.

**Recommendations:**

1. Complete a thorough analysis of the pesticide data using spray records data from 2009 through 2013. Look for trends and examine the forestry pesticide practices and human health and environmental data to determine the source of pesticides exposures.
2. Perform air sampling and monitoring, and test for biomarkers in accordance with the seasonal cycles of forestry pesticide spray. Beyond Toxics has analyzed the seasonal trends and found that Atrazine, 2,4-D, Clopyralid and Hexazinone are typically used in the spring. Glyphosate, Imazapyr, Triclopyr, Metsulfuron methyl and Sulfometuron methyl are typically used in the summer and fall. Fall urine samples should be analyzed for Glyphosate.

3. The study concluded that a ‘p’ value of 0.06 could be interpreted as no statistical significance difference in the 34.4% of participants whose 2,4-D range was above the NHANES 75th percentile. Lack of unequivocal statistical significance should not be dismissed as a lack of firm data— with a ‘p’ value of 0.06, we know that there is a 94 percent certainty that a statistically significant result is true. The study should have taken into account the unique characteristics of this rural community, their dietary habits, their relative geographic isolation, the fact that nearly 60% have verified that they do not use pesticides on their property, and most importantly, the fact that the samples were taken in the fall season, when 2,4-D and Atrazine were not sprayed on nearby forestry or agricultural properties. This “lens” into the characteristics of the Triangle Lake community should be accounted for in the discussion of the statistical analyses.
4. Detection of pesticides in residents’ urine samples indicates the probability that pesticide applications violate registered product labels and present a heightened drift risk. Beyond Toxics recommends that the Investigation Team undertake a thorough investigation of aerial forestry spray practices, including height of aerial craft at time of spray, weather, wind, temperature, droplet size, pesticide product, tank mixing and the use of adjuvants.

#### **Issue 4: Low-level, chronic health effects from repeated exposures to pesticides for children**

Protecting children’s health and ensuring the right to develop normally and in good health is one of the primary responsibilities of society, and certainly the government. Children receive short shrift in this report. The PHA report devotes about one-third of a page (page 36) to the issue of children’s health considerations. Compare that amount to more than nine pages about community characteristics and conflicts (pages 37-46).

Members of the Investigation Team were heard to publicly state that children’s health is adequately covered by the various RfD’s and BE’s for chronic exposure. They conclude that because the detections were below these limits, children are not at risk for harm. On page 37 the authors claim that OHA has designed conclusions and recommendations that will protect children from dangerous chemical exposures. However, not a single conclusion of the 20 conclusions offered address children’s health and risk of exposure. Not one of the seven recommendations offered will protect children’s health; in particular the second recommendation in the second set of recommendations suggests that “sensitive populations” be notified so that they can take action to avoid exposures. How does the PHA suggest that children take action to protect themselves if there are no recommendations to reduce and eliminate pesticide exposures from forestry and agricultural applications near homes, schools, bus stops, playing fields, churches, parks, etc. Would OHA suggest that children be removed from their homes, schools and daily activities as many as thirty-six times each year, thirty-six being the number of forestry pesticide sprays in the Triangle Lake study area during 2011?

The Investigative Team, particularly ATSDR and OHA, must expeditiously evaluate exposure of children to pesticide drift and impose safeguards to protect children from pesticide exposures. One of the many routes by which children are exposed to pesticides is through pesticide drift.



Beyond Toxics strongly recommends an immediate adoption of interim prohibitions on the use of drift-prone pesticides near homes, schools, or wherever children congregate.

Children have smaller bodies, immature organs and metabolic systems, and as a result, can't break down toxins as well as adults. This makes children especially vulnerable to pesticide exposures. Immediate preventive action is critical.

In conclusion, OHA has failed to assess children's unique special susceptibilities to the adverse health effects of such exposures at various stages of development.

### **Recommendations:**

Some state and local jurisdictions have adopted buffer zones to protect children from pesticides. Under FIFRA, the EPA has the authority to impose restrictions for health and safety reasons and to require changes in pesticide labeling to protect against unreasonable risks to vulnerable populations such as children, the public or the environment. Beyond Toxics recommends a minimum buffer zone of two miles and additional restrictions on boom height, wind, fog, rain and pesticide products allowed.

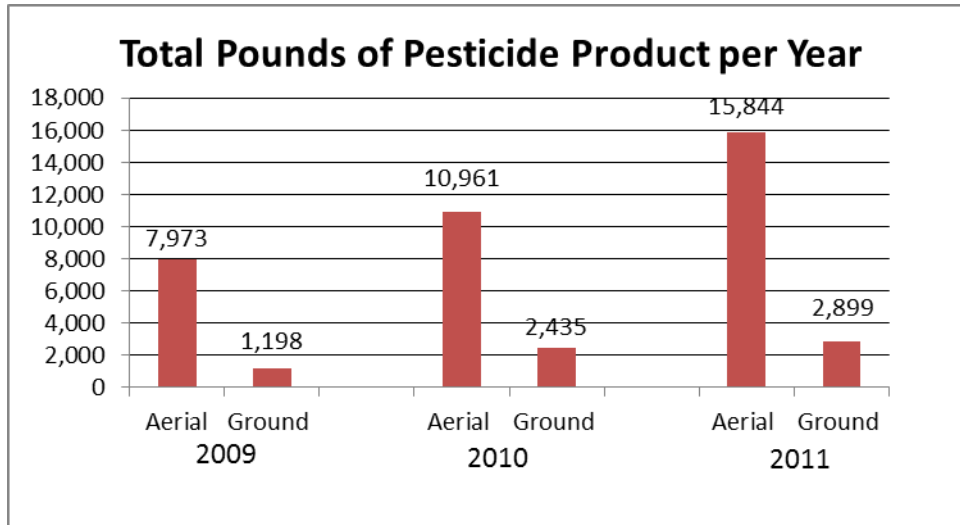
## **Issue 5: Patterns of forestry chemical applications in the study area**

Interested individual residents in the Triangle Lake investigation study area made public records requests to the State of Oregon for the records that were obtained from timber operators, and then made those records available to Beyond Toxics. Beyond Toxics carried out an analysis of the pesticide spray records. Some key facts of our analysis that pertain to the PHA are:

- From 2009 through 2011, at least 41,310 pounds (20.7 tons) of pesticide product<sup>1</sup> were sprayed on commercial timber lands and some state forestry land within the Triangle Lake Study Area.
- Total pesticide pounds increased 99% from 2009 to 2011.
- Increased aerial spray activity in 2011 was especially evident in the spring months, with a 226% increase of the amount in pounds of pesticide product applied by aerial spray from Spring 2009 to Spring 2011.

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<sup>1</sup> Pesticide Product is the active and inactive (inert) ingredients as listed on the product label, but does not include the carrier (such as water).



- We calculated that there was a 27.6% increase in pounds per acres aerial sprayed from 2009 to 2011. **Error! Reference source not found.** shows the percent increase as pounds per acre per year. Pounds of pesticide product per acre by year.

#### Pounds of pesticide product per acre by year

Year	Pounds/Acre Aerial Sprayed
2009	5.6
2010	6.6
2011	7.2

- Records show that there was a steady increase in the chemicals most commonly sprayed.

#### Percent increase of pesticide product most often sprayed from 2009 to 2011

	Aerial Sprays	Ground Sprays
2,4-D	80%	22%
Atrazine	73%	0% (not used)
Glyphosate	4%	71%
Hexazinone	38%	29%
Imazapyr	13%	61%
Triclopyr	0%	31%

- The Oregon Forest Practices Act limits access to spray data to only three years. This limitation makes it difficult to look for trends over time. However, the three years of spray data indicate there is a pattern of repeated pesticide sprays on each unit. Many units were sprayed two and three times within the three year record window. Sprays often included a variety of chemicals. Tank mixes were common.

- The three years of data show the common practice of repeating sprays on the same unit of land. This is important data that contributes to our understanding of low level, chronic exposures for impacted communities. The PHA omits any data analysis about an accumulation of exposures from the practice of repeating sprays on the same unit of land.
- The study does not adequately address the issue of tank mixes with multiple active ingredients, inerts and adjuvants and what this might mean for individual and cumulative exposures and associated health risks. The issue of environmental accumulations of mixtures of chemicals is pertinent to this PHA.
- The PHA narrowly focuses on assessing risk by comparing urine sampling results to RfD's, BE's and NHANES. However, the PHA failed to use any other method of assessing toxicity and risk, and thus failed to assess trends in human health and environmental toxicity according to the applicator, the seasonal trends, and the chemical or chemical mix used. Beyond Toxics used the Field Use Environmental Impact Quotient (EIQ) developed by researchers at Cornell University to provide a context for evaluating the risk from pesticide sprays (J. Kovach, 1992).
  - A timber operator's choice of 2,4-D, Atrazine and Hexazinone (all chemicals sprayed in the spring) have the highest environmental impacts relative to other chemical choices. The EIQ rating system can help us determine which companies are having a higher environmental and public health impact, and educate landowners on which chemicals they can use to have less of an impact. Atrazine has the highest EIQ for the chemicals used in forestry operations in the Triangle Lake Study Area. Hexazinone and 2,4-D have the second highest EIQ ratings.
- One timber operator consistently chooses spray practices that have the highest Environmental Impact Quotient. The table below shows the EIA ratings by date, operator and unit size for the year 2011. The high environmental impact quotient is for 2,4D and Atrazine, which is used almost exclusively by one timber operator. This pattern bears out year after year. (See Attachment 1)

### **Recommendations:**

1. Obtain spray records for 2009-2013.
2. Ascertain why there have been increases in
  - a. Number of spray applications
  - b. Pounds of pesticide applied
  - c. Increase in the pesticide products sprayed
  - d. Increase in the pounds applied per acre
3. Fill in the data gaps to evaluate how repeated applications, tank mixes, adjuvants and aerial spray may increase risk to public health.
4. Use different ways to evaluate the spray data for environmental toxicity and impacts to public health. RfD's and BE's are narrow ways to view the data; we recommend a systems approach.

5. Evaluate individual practices of the timber operators and make recommendations to develop policies that ensure the safest practices that will protect nearby communities from aerial drift and exposure to 2,4-D and Atrazine.

## **Comparison of Washington and Oregon Forestry Practices Act and policy issues related to aerial applications of herbicides in a watershed and near rural residential areas**

The PHA made some recommendations that were aimed at meeting the Investigation goal, to “fill an important data gap that will allow us to determine if people are being exposed to pesticides in the Highway 36 corridor, and if so, the health implications of these exposures (ii).”

Many of the recommendations involve gathering better data, having access to records and allowing the public to know in advance when sprays will occur. One of those recommendations pointed out the need for more spray records to comprise a comprehensive record that could be used to interpret air sampling and assess trends.

The PHA does not identify what policies must change in order to get more data, protect the public, and implement additional monitoring and sampling.

### **Recommendations:**

Beyond Toxics suggests that the final report reference the Washington Forest Practices Act as a viable model for policy changes that would:

1. Align forest practices in neighboring states;
2. Create consistency for timber operators who have operations in both Washington and Oregon, and have a history of compliance with the Washington Forest Practices Act;
3. Promote monitoring and metrics, two aspects of developing good science and reliable data;
4. Provide a blueprint to update the 40 year old Oregon Forest Practices Act to reflect new information about health and environmental harms associated with pesticide use.
5. Provide the suggested notification of upcoming pesticide sprays that are necessary for rural communities who seek to protect their families, their home grown food and their property.

Attachment 2 is a comparison between the Washington Forest Practices Act and the Oregon Forest Practices Act.

Beyond Toxics recommends that the federal agencies on the Investigation Team set a goal of complying with the 1994 Presidential Executive Order 12898 on Environmental Justice . Compliance would mean that:

1. *the public's contribution can influence the regulatory agency's decision;*
2. *their concerns will be considered in the decision making process; and*
3. *the decision makers seek out and facilitate the involvement of those potentially affected.*

The first step is to open up a community discussion about how Oregon could improve its forestry practices and ecosystem health by aligning policies with Washington state.

## **Conclusion**

In conclusion, Beyond Toxics has focused its comments on an analysis of the pesticide spray records in relationship to human health concerns. We have also raised important issues related to compliance with environmental justice requirements and human rights principles. Paramount is our recommendation that the Investigative Team do much more to assess children's health and to recommend policies that eliminate the burden of pesticide exposure for Oregon's rural children.

We would also like to incorporate and reference the comments submitted by the Pacific Rivers Council, who used our data to make recommendations for an integrated watershed approach to land management and the protection of native aquatic species. We agree with their recommendation that the Investigation Team needs to carry out an in-depth environmental monitoring campaign of the aquatic and terrestrial ecosystem, as well as biota sampling, to provide the necessary information to determine pesticides exposure source(s) and pathway(s), and to protect ESA-listed Coho salmon, steelhead and other aquatic organisms.

Thank you for the opportunity to comment.

Sincerely,

Lisa Arkin, Executive Director

Beyond Toxics