



Pesticide and Analytical and Response Center

**July 2007- June 2008
Legislative Report**

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Acronym Definitions

CROET	Center for Research on Occupational and Environmental Toxicology
DEQ	Department of Environmental Quality
DHS	Department of Human Services
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
MSDS	Material Safety Data Sheet
NIOSH	National Institute of Occupational Safety and Health
NPIC	National Pesticide Information Center
ODA	Oregon Department of Agriculture
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OPHD	Oregon Public Health Division, DHS
OERS	Oregon Emergency Response System
OHSU	Oregon Health and Sciences University
OPC	Oregon Poison Center
OR-OSHA	Oregon Occupational Safety and Health Division
ORS	Oregon Revised Statutes
OSFM	Oregon State Fire Marshal
OSDP	Oregon State Department of Police
OSU	Oregon State University
PARC	Pesticide Analytical and Response Center
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

Executive Summary

The Pesticide Analytical and Response Center (PARC) is mandated to coordinate the response of eight state agencies to pesticide related incidents. It also has a responsibility to collect incident information, report investigation results, and evaluate mitigation measures or trends that may affect public health. This legislative report is a description of PARC activities from July 2007 through June 2008.

The last PARC legislative report was produced for fiscal year 2006-2007. This report was released in November 2009. It is available by request from the PARC program or from the website: <http://www.oregon.gov/ODA/PEST/parc.shtml>

All calls referred to PARC that are pesticide related are identified as “incidents” and reviewed based on the PARC criteria. An incident becomes a case and is assigned a case number when investigative findings show that the incident meets the case criteria. PARC elevates incidents to cases if it has sufficient information and meets certain criteria.

During fiscal year 2007-2008, 84 reported pesticide incidents were evaluated based upon the PARC case definition. There were many more reports of pesticide effects that were given preliminary consideration but that did not meet basic information needs. Of these, 51 incidents met the PARC case definition and were given certainty and severity indices by the Board. There were forty-two human cases, seven animal cases, and two environmental cases. Four human cases were not classified due to a lack of information.

Cases that involve people are divided into two designations. These are:

- 1) Non-occupational, meaning that the person or persons were not working as employees when the event occurred.
- 2) Occupational, meaning that the person or persons were conducting work activities as employees when the event occurred.

There were 28 non-occupational cases and 14 occupational cases investigated from July 2007 – June 2008.

Seven cases involved domesticated animals and/or wildlife. Three cases involved wild geese ingesting zinc phosphide. Four cases involved domestic dogs, a pet duck, and livestock. Of those four cases, two of those cases were identified as intentional poisonings, causing death to eight dogs. One of those cases involved a stillborn calf fetus and one case involved the death of a pet duck. There were two environmental cases investigated during this time period.

Certainty Index Definition and Guidance:

Cases are classified by the following certainty designations:

- **Definite:** There are measured concentrations, e.g., blood/urine samples or environmental samples, and a highly plausible exposure pathway with specific health effects, consistent with exposure to identifiable active ingredients.
- **Probable:** There is a highly probable and documented exposure pathway with health effects that are consistent with exposure to the known active ingredient(s).
- **Possible:** There is uncertainty with respect to any likelihood of exposure, the circumstances, or the consistency of the reported symptoms with relationship to the reported active ingredient(s).
- **Unlikely:** The complaint or the majority of the reported symptom(s) is not consistent with the toxicology of the active ingredient(s), OR the time between exposure and onset or duration of symptoms is not consistent with the toxicology of the active ingredient(s), OR there is no plausible exposure pathway.

- **Unrelated:** The complaint is not pesticide related.
- **Exposure, no symptoms:** There is verifiable exposure, but no symptoms exhibited.

Of the forty-two cases that involved people, four could not be classified because insufficient information was available. There were no cases that were classified as definite; sixteen cases were classified as probable, fifteen cases were classified as possible, seven cases were classified as unlikely, and no cases were classified as “unrelated” or “exposure, no symptoms”.

Of the seven animal cases, four of the cases were classified as definite; no cases were classified as probable, one case was classified as possible, and two cases were classified as unlikely. No animal cases were classified as “exposure, no symptoms”.

Severity Index Definition and Guidance

Cases are also classified according to the severity of the illness exhibited by individuals, the environment, wildlife, or domestic animals. Severity is determined based upon the illness or injury, regardless of the relationship of the illness to the pesticide. The following are these classification designations:

- **Death**
- **High severity illness/injury:** The illness or injury is severe enough to be considered life threatening and typically requires treatment. This level of effect commonly involves hospitalization. Signs and symptoms include, but are not limited to, coma, cardiac arrest, renal failure and/or respiratory depression. The individual sustains substantial loss of time (>5days) from regular work or normal activities. This level of severity might include the need for continued health care following the exposure event, prolonged time off of work, and limitations or modification of work or normal activities. The individual may sustain permanent functional impairment.
- **Moderate severity illness/injury:** The illness or injury is less severe and often involves systemic manifestations. Generally, treatment was provided. The individual is able to return to normal functioning without any residual disability. Usually, less time is lost from work or normal activities (\geq 3-5 days), compared to those with severe illness or injury. No residual impairment is present (although effects may be persistent).
- **Low severity illness/injury:** The illness or injury often manifests with skin, eye or upper respiratory irritation. It may also include fever, headache, fatigue, or dizziness. Typically the illness or injury resolves without treatment. There is minimal lost time (<3 days) from work or normal activities.
- **No symptoms reported:** This is used for cases that the PARC Board or staff chooses to designate as PARC cases, even though they may not meet the PARC case definition, which requires that some kind of illness be reported/alleged. These cases may be designated as Noteworthy Cases if, by their nature, they highlight a risk or potential risk for future problematic pesticide exposure(s). It may also be used when a pesticide exposure is known to have happened but no symptoms have been observed.

Of the forty-two cases that involved people, none fit the definition of a death or high severity illness; twelve cases were classified as moderate severity illnesses, twenty-seven cases were classified as low severity illness or injury. One case was given two different severity indexes due to the differing symptoms of the individuals involved. Four cases could not be classified due to insufficient information.

Of the seven animal cases, six led to the death of the animal. One case was classified as high severity illness and no cases were classified as moderate severity illnesses or low severity illness or injury.

FY 2007-2008 PARC Accomplishments:

- *PARC database created*
The PARC database was created and used to better track PARC incidents and cases. This database will assist the PARC Coordinator to track and search incidents and cases more easily and efficiently. Data from July 2005 through June 2007 was entered.
- *Communication and coordination with Lane County Regional Air and Regional Protection Agency (LRAPA)*
LRAPA requested information regarding general investigations into the Blachley, Deadwood and Greenleaf areas of Lane County. PARC sent a letter to LRAPA outlining the role of PARC and summarizing PARC and the member agency responses to incidents and cases in the subject area from 1997 to 2007.
- *Minimum risk pesticide issues (25b products)*
Minimum risk pesticides were discussed regarding their role in a number of PARC cases. Because of this discussion Oregon Public Health Division sent a memo to other states to identify whether they were seeing similar issues. This memo sparked a nationwide discussion regarding 25b products.

Trends observed by PARC:

- *There were a number of cases involving forest and farm applications. Some applications resulted in exposure to individuals who were not associated with the application, but were present on the application site. Pesticide movement from the intended application during application was identified.*
PARC will continue to coordinate investigations with ODA and make connections with individual private applicators and commercial operators to provide outreach to them about what PARC does and PARC responsibilities.
- *The use of rodenticides inconsistent with the pesticide label is putting wildlife (especially geese) at risk.*
PARC continues to coordinate investigations among U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture, and local agencies to intensively investigate these cases.
- *PARC continues to see pesticides with lethal properties when ingested by vertebrates being used to illegally bait and kill domestic pets.*
PARC continues to coordinate investigations among U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, U.S. Department of Agriculture, Oregon Department of Agriculture, and local agencies to intensively investigate these cases.

- Many occupational incidents/cases were the result of applications in or near the employee workplace and did not involve employees directly using pesticides.*
 PARC encourages the educational training of commercial applicators to include these scenarios so that they are aware of the possibility of exposure of others during applications.
- Complaints from residents in close proximity to managed forest applications.*
 PARC observed a large number of complaints from individuals who live in close proximity to managed forest areas. These individuals are concerned about the application of pesticides to the forest units.
 PARC will continue to coordinate investigations between Oregon Department of Forestry and Oregon Department of Agriculture.
- Members of the general public who use pesticides regularly do not read the label for more than the most basic dilution or use requirements.*
 PARC planed several outreach projects to continue to instruct homeowners to read the complete label of any pesticide they use. One of these projects, an effort to educate members of the public on the safe uses of pesticides, took place at participating retail stores that sell residential use lawn and garden pesticides. This initiative launched in January 2008. Oregon's Heath Authorities Pesticide Exposure, Safety and Tracking (PEST) main goal for this project is pilot testing a process for providing pesticide education to the general public using a point-of-purchase education model.
- Public visibility of PARC is quite low. Most calls and complaints are logged through the OPC and ODA.*
 PARC plans to increase public awareness of the unique capabilities of this program through outreach and education using existing educational venues. Examples of these venues are Oregon Public Health Division, PARC Coordinator talks, and public educational opportunities provided by other state agencies.

Since July 1, 2005, the primary responsibility for the administrative functions of the Pesticide Analytical and Response Center (PARC) have been conducted by the Oregon Department of Agriculture. The PARC Coordinator with ODA collects and disseminates information from and to different agencies relating to pesticide related incidents. Major funding is provided to OPHD to collect health related information from doctor visits and interviews with the affected party.

This report is intended to make PARC transparent to the citizens of Oregon; subjects addressed include how PARC gathers information, determines cases and identifies whether pesticides have adversely affected humans, pets, wildlife, or the environment. The following report meets the legislative requirement as stated in OAR 634.550.

This report addresses incidents and cases from July 1, 2007 to June 30, 2008.

How The Pesticide Analytical and Response Center Functions

AUTHORIZATION

PARC was created by executive order in 1978. Senate Bill 740 was passed in 1991, reauthorizing the program into the Oregon Department of Agriculture (ODA) as OAR 634.550. Funds (General Funds) for operation of PARC were added to the ODA budget beginning with fiscal 2005.

MEMBERSHIP

Membership of the governing board consists of representatives of eight state agencies and one citizen of the state at large appointed jointly by the Director of Agriculture and the Director of Human Services.

The eight state agencies are:

- Department of Agriculture (ODA)
- Department of Environmental Quality (DEQ)
- Department of Fish and Wildlife (ODFW)
- Department of Forestry (ODF)
- Department of Human Services, Office Public Health Division (OPHD)
- Oregon Occupational Safety and Health Administration (OR-OSHA)
- Oregon Office of State Fire Marshal (OSFM)
- Oregon Poison Center (OPC)

Several organizations provide expertise to the PARC Board as contracted consultants:

- The Center for Research on Occupational and Environmental Toxicology (CROET) Oregon Health & Science University
- The Environmental and Molecular Toxicology Department from Oregon State University (OSU)
- Oregon Department of Transportation (ODOT)

Representatives from ODA and OPHD alternate as PARC Board chair each calendar year, with ODA conducting chairperson activities during odd numbered years and OPHD during even numbered years. The Board meets every other month, beginning each year with a January meeting, to discuss incidents, cases, and pesticide related topics.

FUNDING

For the biennial fiscal period 2005 – 2007 (July 1, 2005 – June 30, 2007), General Funds were provided to ODA for operation of PARC. For the biennial fiscal period 2007 – 2009 (July 1, 2007 – June 30, 2009), the Oregon Legislature again authorized General Funds. Because General Funds, rather than Other Funds, were authorized, PARC expenditures were not subject to ODA indirect costs. The PARC budget for 2007 – 2009 was as follows:

ODA	\$133,708.00
OPHD	127,285.00
OSU	52,279.00
<u>Total Approved Budget</u>	<u>\$313,272.00</u>

ODA expenses included salary and support costs for one-half technical position as the PARC Coordinator. Activities of this position included receiving information from the public and other agencies regarding incidents, communicating information to staff of other agencies, coordinating investigations, tracking the actions of responding agencies, compiling gathered information, interacting with OSU toxicologists, and reporting to the PARC Board. PARC was not charged for the time provided by ODA management staff acting as the PARC Administrator and as the PARC Co-Chair.

OPHD expenses included salary and support costs for a portion of one technical position. Activities of this position included communicating with individuals regarding pesticide-related health concerns, gathering incident information from individuals, obtaining medical information from individuals and health care providers, and interacting with OSU toxicologists.

OSU expenses included providing human and environmental toxicology consultations. Activities of participating staff included receiving, evaluating and reporting information provided on specific incidents referred by the PARC Coordinator.

The expenses of other agencies participating in PARC were not charged to PARC, but absorbed by individual agencies.

Activities and Responsibilities

MANDATES

PARC is mandated by statute to perform the following activities when pesticide-related incidents result in suspected health or environmental effects:

- Collect incident information
- Mobilize expertise for investigations
- Identify trends and patterns of problems
- Develop policy or other recommendations for action
- Report results of investigations
- Prepare activity reports for legislative sessions

INVESTIGATION COORDINATION

The primary statutory function of PARC is to coordinate investigations and to collect and analyze information about reported incidents of health or environmental effects from possible pesticide exposure. PARC does not have regulatory or investigative authority. PARC cases address suspected pesticide effects to humans, pets, wildlife, and the general environment as incidents to be tracked and investigated for possible pesticide involvement and for necessary changes to policies or interpretations of law.

PARC member agencies conduct most of the investigations and take necessary enforcement actions (Appendix IV – Member Agencies and Consultant Jurisdictions).

Investigation coordination includes:

- Collecting information from callers and distributing the information to member or interested agencies.
- Assigning a numerical incident tracking number for possible pesticide incidents where adverse health or environmental effects are claimed.
- Requesting investigation or collaboration by member or interested agencies.
- Assigning a numerical case number if the incident meets specific case criteria.
- Coordinating health information with OPHD.
- Consulting with a medical toxicologist from OSU, if a case has a human impact.
- Collecting investigative reports and enforcement actions from other agencies.

Participants in incident or case investigations may include other government agencies that are not specifically mentioned in the PARC mandate. Some examples of those agencies are:

Oregon Department of Transportation
Oregon State University Extension Service
United States Environmental Protection Agency
United States Fish and Wildlife Service

CLASSIFICATION OF CASES

When an incident is reported to PARC, an incident number is assigned. This incident number is used to track the incident from start to finish. Each incident is entered into a database and summarized for presentation to the PARC Board at each bimonthly meeting. All issues related to pesticide incidents are evaluated by the Board to meet the legislative mandate to identify trends, issues, and problems related to the use, handling, or application methods of pesticides.

If the incident meets specific criteria, it is issued a case number. The PARC Board classifies each case when the investigation is complete. Each case is classified based on the probability that the case was pesticide related. A set of criteria has been developed to classify each case as to causality (Appendix II).

Member agencies submit final case investigation reports to the PARC coordinator. These reports include any violations and/or enforcement actions and are routinely shared among agencies and with the PARC Board when cases are classified.

The data developed from incidents and case investigations are analyzed and presented to the Oregon Legislature. Information collected by PARC is used to:

- 1) Identify the appropriate agencies to gain assistance during crisis.
- 2) Conduct training of other agencies to assure that critical information collection is accomplished.
- 3) Develop educational materials aimed at reducing exposures.
- 4) Make recommendations to state and federal agencies regarding products and application practices with the aim of reducing acute pesticide poisonings.

Education of the public and other agencies is identified as key to collecting and substantiating exposure scenarios. Reporting delay inhibits the ability of PARC and individual agencies to gather adequate information, identify rule violations, and evaluate the relationship between reported exposures or environmental impacts.

Information collected by the PARC program is available and provided to the public, other agencies, and business interests. Information is also provided to the U. S. Environmental Protection Agency and the U. S. Fish and Wildlife Service when appropriate. These federal agencies combine PARC data with information from other states to identify possible national trends regarding pesticide products or uses. Upon request, pesticide product manufacturers, industry organizations, and public interest groups are also provided the information developed by PARC agencies and any conclusions that PARC has drawn from that information.

Information is disseminated to targeted groups through presentations at training seminars and meetings and through pesticide safety literature. The PARC program anticipates expanding public and professional educational efforts as the program moves forward.

Data Analysis

INCIDENT REPORTS

Incidents are reported to PARC in a variety of ways. These include reporting through PARC member agencies, as well as other federal, state, and local agencies. Other sources for reporting incidents include persons who think they have been affected by pesticides, the general public, and the news media. PARC follows up on any allegations to confirm which agency should take the lead in the investigation and which agencies should be involved or notified.

During fiscal year 2007-2008, PARC recorded and investigated eighty-four incidents that involved possible human health, pet or wildlife illnesses, or environmental damage by pesticides.

Incident reports represent urban (indoor and outdoor) situations, agricultural and forestry pesticide applications, pesticide spills, accidents, odor complaints, homeowner applications, and neighbor complaints. Included are incidents that cannot be substantiated, anonymous calls, and odor concerns that may or may not have been associated with pesticides.

Investigation into these eighty-four incidents determined which ones met the PARC criteria as a case. Generally, case criteria involve identifying one or more pesticide product(s) as the cause of concern, and observed or documented symptoms associated with those products. An exception to this criterion is when an exposure is known to have occurred but no symptoms develop.

CASE REPORTS

Fifty-one of the eighty-four incidents (61%) were issued case numbers.

- Forty-two cases involved people. Of these, four cases could not be classified due to lack of information.
- Seven cases involved animals; three cases involved wildlife and four cases involved pets or domesticated animals.
- Two cases involved the environment.

Human Cases

Forty-two cases (82%) were reported as human illnesses. Fifty-six people were the focus of these forty-one cases. Sixteen cases (53%) were occupational, with thirty-six people involved or affected. Fourteen cases (47%) were non-occupational, with forty-six people involved or affected.

Three cases involved evacuations of adults from areas where pesticides might have affected them. One case was the fogging of a warehouse where employees were allowed reentry prior to the warehouse being adequately ventilated. The employees and emergency responders responding to the incident exhibited symptoms. The second was suspected drift to the inside of an office building when a roofing company was treating a roof with pesticides. The third incident involved a company that was evaluated after the spill of a technical grade growth hormone product.

Four cases could not be classified due to insufficient information regarding symptoms. These cases involved five people and all were non-occupational.

Environmental Cases

Two cases (4%) involving environmental incidents met the PARC criteria to become a case. One case involved a spill and another case involved spraying of an endangered species.

Domestic Animal Cases

Four cases (5%) involved domestic animals, three cats and eight dogs. Of these cases, five were intentional poisonings illegally using lethal doses of insecticides in bait.

Wildlife Animal Cases

Three cases (4%) involved the death of Canada geese. Of these cases, all involved the poisoning of the geese by zinc phosphide applications. All the poisonings were confirmed by laboratory results.

ANNUAL REPORT

This annual report covers the period from July 1, 2007 to June 30, 2008. This annual report was prepared in November 2010. Some of the cases during this period were not classified until November, 2010. This delay was caused by a number of factors.

- There was a change in the PARC coordinator position within ODA. This change caused a delay of cases being forwarded to the appropriate agency for investigation and forwarding case information to PARC's toxicologists for case classification.
- There were resource issues at OPHD. PARC funding to OPHD provides for one staff person to work part-time. This affects OPHD ability to investigate PARC cases in a timely fashion and obtain medical human health information from individuals who sought medical care. Because of the lack of resources, PARC cases were delayed being delivered to the toxicologist for classification.
- Medical information from individuals exposed to pesticides was not flowing from OPHD to PARC's medical toxicologists. OPHD had concern regarding the handling of medical records by PARC's consultants and the safeguard of such information as required by HIPAA. A new memorandum of agreement was written to address these issues to protect health related information. These agreements were written and signed in 2009 and 2010 by the individual agencies involved.
 - PARC/OSU Interagency Agreement Amendment #4 signed 11/2009
written 10/2009
 - PARC/OHSU Interagency Agreement signed 01/2010
written 01/2010
 - PARC/OPHD Interagency Agreement Amendment #4 signed 11/2009
written 10/2009
- The schedule of PARC meetings makes the board availability to classify cases limited. The PARC board meets every other month to address PARC related issues and to classify PARC cases. Because of the backlog of PARC cases, this meeting schedule adversely affects PARC's ability to stay current.

CASE CLASSIFICATION

Case classification is a conclusion based upon investigation by authorized agencies and toxicological determinations of the correlation between known pesticides and symptoms exhibited by people or domestic animals or the wildlife/environmental effects. Classification includes two parameters:

- **Certainty index:** The certainty index is a gauge used to measure how closely symptoms and exposure scenario match the expected symptoms or effects of exposure to the known pesticide symptoms.
- **Severity index:** The severity index is a gauge for measurement of the severity reported illness or environmental effects.

Appendix II contains the incident and case criteria upon which the following classifications are based.

Cases were classified in four categories. These were occupational, non-occupational, environmental, and pets/wildlife. There were fourteen occupational cases, twenty-eight non-occupational cases, two environmental cases, and seven cases where pets and/or wildlife were involved (Fig.1).

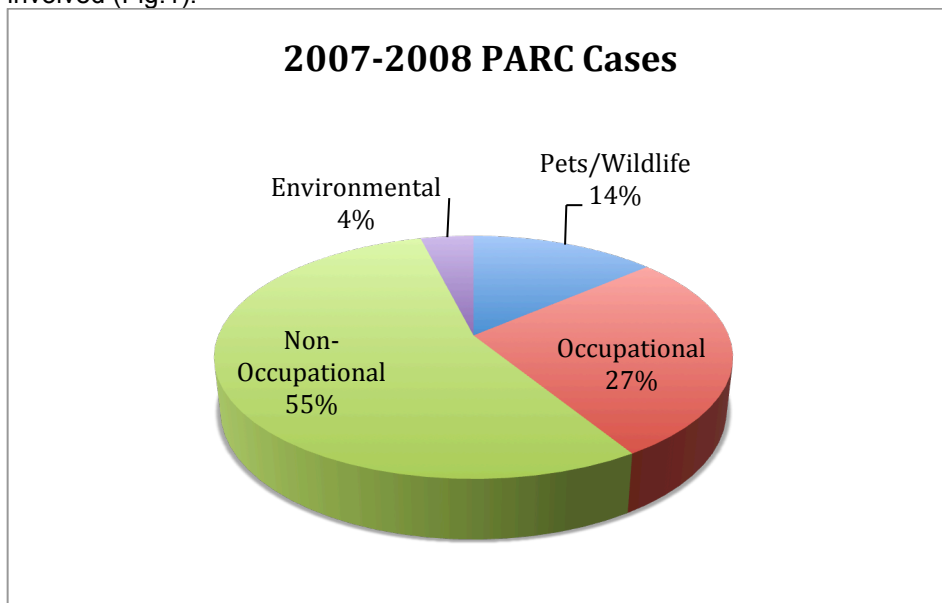


Figure 1: All Cases

CERTAINTY INDEX -All PARC Cases

There was insufficient information to classify the certainty of four (8%) of the fifty-one cases. Four (8%) were classified with a definite certainty of pesticide exposure. These four cases involved geese that were adversely affected by the misapplication of rodenticides. One environmental case was classified as moderate and involved a pesticide spill in Hermiston.

Seventeen cases (33%) were classified with a probable certainty of pesticide exposure leading to specific effects. Sixteen cases (31%) were classified as having a possible certainty of pesticide exposure leading to specific effects. Nine cases (18%) were classified with a certainty of unlikely to have been caused by pesticides (Fig. 2).

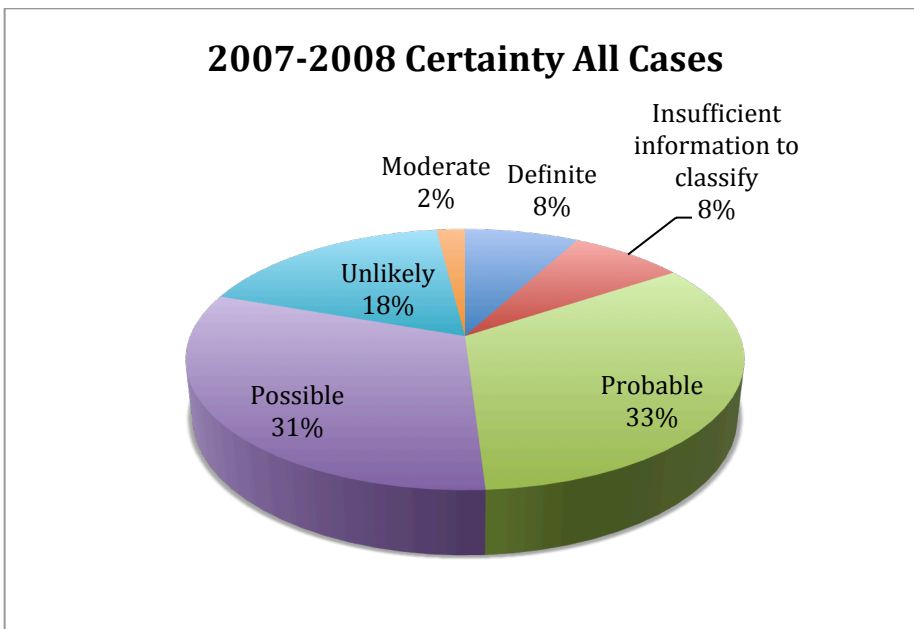


Figure 2: All Cases – Certainty Index

CERTAINTY INDEX - Human PARC Cases

There were no human cases in 2007-2008 where the certainty could be assigned as definite. Sixteen cases (42%) were classified as probable. Fifteen cases (39%) were classified as possible. Seven cases (18%) were classified as unlikely (Fig. 3).

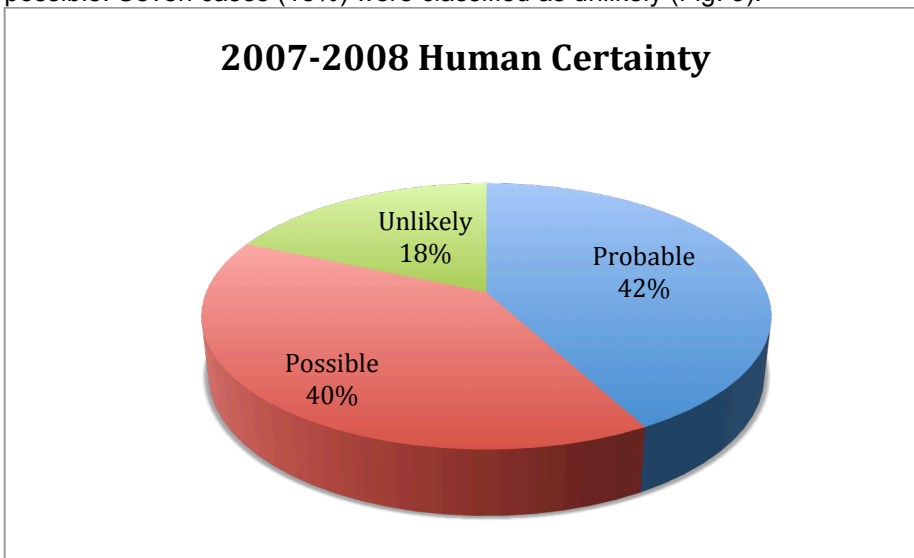


Figure 3: Human Cases – Certainty Index

SEVERITY INDEX – All PARC Cases

Six cases (12%) involved the death of animals, wildlife or domestic animals relating to pesticide applications, one case was classified as high severity and involved a pet dog. Twelve cases (24%) were considered to be of moderate severity, twenty-seven cases (54%) were of low severity and no cases were classified as no symptoms exhibited. Four cases (8%) were not classified due to insufficient information (Fig. 4).

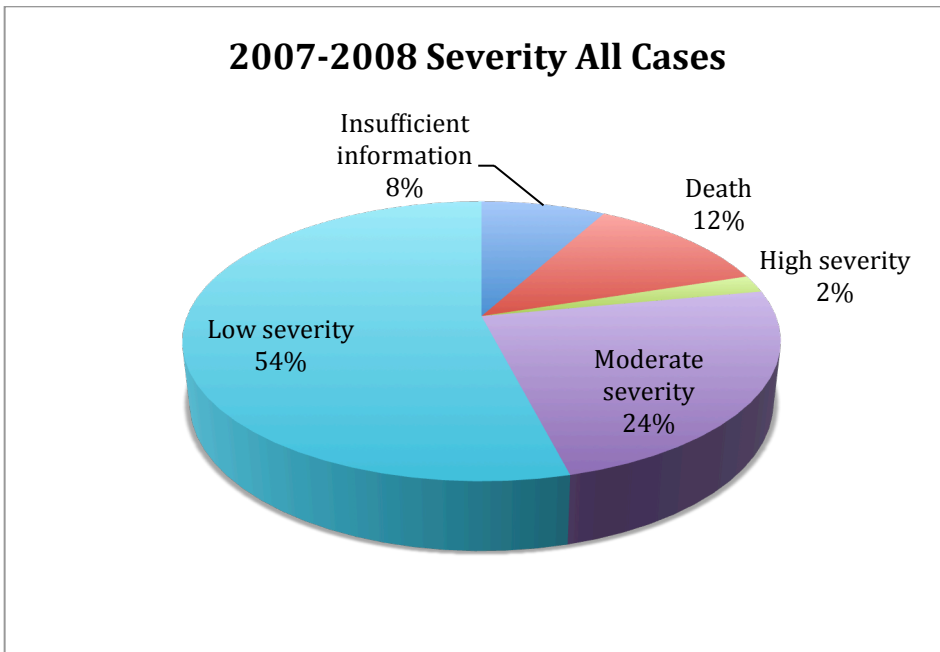


Figure 4: All Cases – Severity Index

SEVERITY INDEX – Human PARC Cases

No cases involved the death of an individual, no cases were classified as high severity illnesses. Twelve cases (28%) were considered to be of moderate severity; twenty-seven cases (63%) were of low severity and no cases were any symptoms exhibited. Four human cases (9%) were not classified due to insufficient information. It is important to note that the severity classification is not tied to the certainty classification; the severity is specifically based upon the illness symptoms exhibited. For example, in a case where a person clearly exhibited moderately severe symptoms, the certainty of the symptoms being caused by a pesticide exposure might be “unlikely” if it appeared that the symptoms had some other cause (Fig. 4).

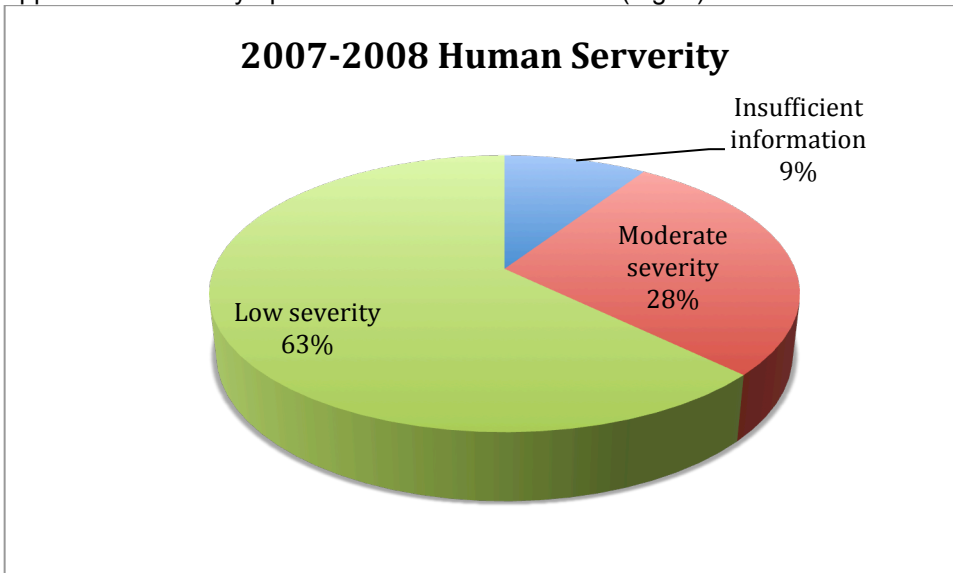


Figure 5: Human Cases – Severity Index

COMPARISON WITH PREVIOUS YEARS

The table below compares the pesticide-related incidents reported in the previous six PARC reporting periods with the 2007-2008 data. There are some areas where it is not possible to make direct comparisons between data sets. The central issue is that two different case criteria to define acute pesticide illness were applied to the human illnesses reported. From 1998 through 2001, nationally-used pesticide case classification criteria from National Institute of Occupational and Safety and Health (NIOSH) pesticide program was applied to individual human illnesses reported to PARC.

The new PARC criteria, initially used in 2005-2006, requires investigation or medical records to confirm pesticide applications, type of pesticide and symptoms. In addition, some incidents are not evaluated by PARC because of lack of staffing resources at PARC agencies, the individuals involved did not consent to being referred to PARC where the incident might be investigated, and because some incidents were found not to be pesticide-related.

Table 1. Pesticide-Related Incidents Reported to PARC

Calls	1998	1999	2000	2001	2002- June 05	July 05 – July 06	July 06 – July 07	July 07 – July 08
Total suspected incidents reported		118	200	213	PARC activities not funded	230	240	170
Incidents reviewed	60	46	95	73		84	89	84
Cases	60	46	95	73		35	36	51
No. people involved	93	110	172	128		62	35	67
Children (< 18)				23			19	18
Animals	1	3	11	2		6	11	7
Environment	3	4				2	0	2

Table 2 is an account of reported incidents where pesticide-related human illness or effects on animals or the environment were alleged. The decline in health care provider reports was discussed in the December 15, 2009 edition of CD Summary, an Oregon Public Health Division publication [See Vol. 58, No. 25].

The difference in the number of phone calls during the period of 1998-2001 from 2002-2008 can be attributed to the difference in methodology for reporting during the first period from the later. One factor for the difference could be attributed to the law stating it is the responsibility of the physician to report symptomatic pesticide exposures, which was not well followed. OPC began to report their cases to PARC as a courtesy, understanding that health care providers weren't reporting these numbers to assist in getting more accurate numbers.

Table 2. Pesticide-Related Incidents by Reporting Source

Agency	1998	1999	2000	2001	2002- June 05	July 05 – June 06	July 06 – June 07	July 07 – June 08
OPC	16	12	39	25	PARC activities not funded	152	136	89
PARC	6	6	12	21		9	5	16
ODA	11	8	24	11		40	80	42
OERS	3	2	7	4		3	3	1
Worker's comp.		2	3	3				2
ODF				2		1	3	1
ODFW						1		
Local health dept.	2	2	1	2				3
Health care provider	9	9	5	2				
OR-OSHA	3		2	1		4	5	5
DEQ	1	2	1			3	2	1
Medical examiner								
NPIC	3							
WA state health								
OPHD						6	2	4
USFWS						8	3	4
State police						1		
Other	6	3	1	2		2	1	2
Total	60	46	95	73		230	240	170

Some differences in data collection between years are apparent in Tables 1 and 2. However, the data is essentially the same for incident reporting by agencies. Starting in 2005, all claims are reviewed to identify whether there was enough information to evaluate them based on PARC criterion.

Table 3 documents the information captured during reporting years. The information collected in 2005-06 did not regularly include the type of health care obtained. For the reporting year 07-08 the amount of individuals seeking medical care was about equivalent to the number who did not seek out medical care.

Table 3. Type of Medical Care Sought

Type	1998	1999	2000	2001	2002 – June 05	July 05 – June 06	July 06 – June 07	July 07 – June 08
None	11	52	41	54	PARC not funded	11	8	19
Consult	2	1	12	12			9	0
Office	44	25	13	29		7	10	18
ER	31	15	16	29			17	3
Hospital		3	6	4		1	6	2
Onsite care		1	8			4	4	0
Unknown	1	3	4			8	2	0
Other	4							2

Table 4 shows for the reporting period 2007-2008 that far more occupational cases occurred with individual conducting routine work not related to the application than with individuals conducting work related to application of pesticides.

Table 4. Occupational by Activity/Number of Individuals

Activity	1999-00	2001	2002 – June 05	July 05 – June 06	July 06 – June 07	July 07 – June 08
Individuals not associated with application	77 (78%)	19 (68%)	PARC not funded	44 (98%)	11(48%)	18(72%)
Applicators	18 (18%)	9 (32%)			12(52%)	7 (28%)
Emergency response	3 (3%)					
Other				1 (2%)		
TOTAL	98	28		45	23	25

For 2007-2008, two individuals were reported to be affected conducting business that was not associated with the actual pesticide application. Six individuals were reported to be at an agricultural/nursery site. Unlike the reported cases in 2006-2007, where there was an even split between exposure of individuals who were at a place of business and investigations at the farm/nursery sites, more incidents occurred within agricultural sites. The second highest number of individuals reporting being affected by pesticides was about equal for businesses (regular work activities not associated with applying pesticides), right-of-way sites, and industrial sites.

Table 5. Occupational by Site/Number of Individuals

Site	1999-00	2001	2002 – June 05	July 05 – June 06	July 06 – June 07	July 07 – June 08
Place of Business	49 (51%)	7 (25%)	PARC not funded	3(7%)	7(30%)	2 (8%)
School	8 (8%)	4 (14%)		1 (2%)	2(9%)	
Construction	15 (15%)	4 (14%)			3(13%)	
Road (Right-of-Way)	6 (6%)	3 (11%)				5(20%)
Golf Course		1 (4%)				
Farm/nursery	18 (18%)	9 (32%)		30 (67%)	7(30%)	9(36%)
Institution	2 (2%)			6 (13%)	1(4.5%)	1(4%)
Industrial				2 (4%)	1(4.5%)	8(32%)
Forestry						
Other				3 (7%)	2(9%)	
TOTAL	98	28		45	23	25

Table 6 shows the number of individuals affected by activity in non-occupational locations. For the reporting 2007-2008 the greatest number of people affected by a single incident was reported by a family picking blackberries. The family was walking back to their car when a neighboring application to a Christmas tree plantation drifted onto them.

The second highest number of people is associated with several cases reported as having to do with the application of pesticides and indoor applications. Another case involving a number of individuals involved the fogging of a warehouse not properly ventilated where a number of individuals were affected including first responders.

Table 6. Non-Occupational by Activity/Number of Individuals

Activity	1999-00	2001	2002 – June 05	July 05 – June 06	July 06 – June 07	July 07 – June 08
Intentional	2 (1%)	1 (1%)	PARC not funded	1 (1%)		0 (0%)
Application	24 (13%)	10 (10%)			9(28%)	6 (14%)
Outdoors	68 (37%)	24 (24%)		12 (70%)	5(15%)	33 (79%)
Indoor	86 (47%)	64 (64%)		4 (23%)	6(18%)	2 (5%)
Spill/dispose	4 (2%)	1 (1%)		1 (6%)	13(39%)	1 (2%)
TOTAL	184	100		18	33	42

Table 7 shows that in this period the largest number of persons reported being affected in non-occupational cases. The largest number of individual's affected during the reporting period 2007-2008 were in the residential setting. One incident did not report the number of individuals affected.

Table 7. Non-Occupational by Site/Number of Individuals

Sites	1999-00	2001	2002 – June 05	2005-06	2006-2007	2007-2008
Residence	128 (70%)	84 (84%)	PARC not funded	15 (88%)	9(28%)	20(48%)
Road/trail	13 (7%)	6 (6%)		1 (6%)		
School	28 (15%)	2 (2%)		1 (6%)	6(18%)	1 (2%)
Service		2 (2%)				
Farm	2 (1%)	1 (1%)			5(15%)	10 (24%)
Forest	2 (1%)	1 (1%)				8 (19%)
Institution						
Hotel/motel					13(39%)	1 (2%)
Other	11 (6%)	4 (4%)				2 (5%)
TOTAL	184	100		17	33	42

Table 8 shows that Marion, Multnomah, and Lane counties reported the largest number of cases in 2007 – 2008. Douglas and Clackamas counties tied at five cases each for this reporting period.

Table 8. Counties Where Cases Originated

County	2007-2008	Total
Multnomah	9	18%
Marion	7	14%
Lane	6	12%
Washington	5	10%
Douglas	5	10%
Clackamas	4	8%
Yamhill	3	6%
Linn	3	6%
Umatilla	2	4%
Jackson	2	4%
Klamath	2	4%
Curry	2	4%
Benton	1	2%
Deschutes	1	2%
Total cases	51	

It is difficult to draw direct comparisons between years, because criteria have been added or deleted that may not have been tracked. However, some generalizations can be made based upon the available data.

- Occupational exposures often occur to employees that are affected **indirectly** by a pesticide application. An example of this is an office where an application was made and the office workers smell an odor or exhibit symptoms they feel are associated with a pesticide application in their vicinity.
- Non-occupational exposures most often occur in or near the residence of a person, and reportedly result from an application on other property(ies) such as agricultural or forestry operations.
- Animal exposures were due to ingestion of rodenticide illegally applied. Of the seven animal cases three cases were poisoning of Canada geese. The remaining cases were due to “chemical trespass” to a neighboring property; one case the exposure and deaths were due to intentional baiting.

Accomplishments

1. PARC sent a letter to Lane County Regional Air Pollution outlining the role of PARC in the state as well as outlining a summary of official complaints, from the last ten years, by Lane county residents who live along the Highway 36 corridor. This letter summarized all PARC complaints received by member agencies and their individual involvement in the complaints.
2. PARC members worked to develop a strategy to effectively communicate and document the public's concerns. A strategy was also discussed in ways to disseminate the actual roles of each member agency to the public.
3. PARC developed and implemented a database to better track incident and case information. The database will allow PARC to search cases and incidents to better track trends and patterns of problems within the state.
4. PARC continued to develop and maintain the PARC website.
5. PARC noticed a trend of a number of cases involving minimum risk pesticides, called 25(b) products. Because of this OPHD sent out a memo to other states to identify whether they were seeing similar trends. This resulted in a response from EPA headquarters.

Issues and Recommendations

The PARC Board requested that the coordinator continue to follow issues developed during incidents and case review. These include problems related to pesticide uses and changes or concerns that have a potential to cause issues in the future. Additionally, PARC may make recommendations or propose policy changes to Board member agencies.

1. Issue: *Workgroup on Pesticide Use in Oregon Schools*

A workgroup was created in response to concerns voiced during the 2007 legislative session that surrounded proposed legislation to limit use of pesticides. The workgroup, chaired by Representative Bonamicci consisted of legislators, public agencies, and the public.

Recommendation: The Board members requested a letter be sent to one of the principals in the meeting who is associated with the "Pitchfork Rebellion". In addition, the Board asked that the PARC coordinator develop an informational letter to send to concerned or affected parties regarding what PARC does, how the regulatory agencies respond to complaints, and to explain what they must do to get involved in the complaint process.

2. Issue: *Community Member Vacancy / Appointment*

There has been a community member vacancy for a while within the PARC board. According to the legislature, there is a requirement to appoint a citizen from the public at large.

Recommendation: PARC will develop a process to identify an outreach process, to implement that process, and appoint a person before March, 2008.

3. Issue: *Interagency communication and training.*

Interagency communication and training was brought up to the board. Specifically discussed was the failure of incidents being reported to PARC. PARC offers the ability to refer incidents to the most appropriate agency who offer the most expertise.

Recommendation: PARC will continue to focus on training agency staff about PARC and PARC duties.

Appendices

APPENDIX I - WHAT IS A PESTICIDE?

A pesticide is any substance or mixture of substances intended for

- preventing
- destroying
- repelling, or
- mitigating any pest.

Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests.

Under United States law, a pesticide is also any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant (from US EPA definition found online).

Table 9. Types of Pesticides

Algaecides	Control algae in lakes, canals, swimming pools, water tanks, and other sites
Antifouling agents	Kill or repel organisms that attach to underwater surfaces, such as boat bottoms
Antimicrobials	Kill microorganisms (such as bacteria and viruses)
Attractants	Attract pests for example, to lure an insect or rodent to a trap; food is not considered a pesticide when used as an attractant
Biopesticides	Derived from natural materials such as animals, plants, bacteria, and certain minerals
Biocides	Kill microorganisms
Disinfectants/sanitizers	Kill or inactivate disease-producing microorganisms on inanimate objects
Fungicides	Kill fungi (including blights, mildews, molds, and rusts)
Fumigants	Produce gas or vapor intended to destroy pests in buildings or soil
Herbicides	Kill weeds and other plants that grow where they are not wanted
Insecticides	Kill insects and other arthropods
Miticides	Kill mites that feed on plants and animals
Molluscicides	Kill snails and slugs
Nematicides	Kill nematodes
Ovicides	Kill eggs of insects and mites
Pheromones	Biochemicals used to disrupt the mating behavior of insects
Repellents	Repel pests, including insects (such as mosquitoes) and birds
Rodenticides	Control mice and other rodents
Defoliants	Cause leaves or other foliage to drop from a plant, usually to facilitate harvest
Desiccants	Promote drying of living tissues, such as unwanted plant tops
Insect growth regulators	Disrupt the molting and maturity from pupal stage to adult, or other life processes of insects
Plant growth regulators	Alter the expected growth, flowering, or reproduction rate of plants (excludes fertilizers or other plant nutrients)

For more information regarding pesticides please contact the National Pesticide Information Center (NPIC). NPIC offers objective science-based chemical, health, or environmental information about pesticides from “user-friendly” scientists who will help you make informed decisions.

Available 7:30 A.M. – 3:30 P.M. PST - 5 days a week.

Phone number 1-800-585-7378 or [Email NPIC](mailto:npic@ace.orst.edu) or npic@ace.orst.edu

APPENDIX II - INCIDENT AND CASE CRITERIA

In order for PARC to coordinate the investigation of a pesticide related incident, it must meet one of the following criteria and sufficient information for coordination of investigations must be available:

Human Health Complaint:

- 1) A suspected or confirmed pesticide poisoning reported by a health care provider
- OR
- 2) An illness related to a recent pesticide exposure reported by an individual, where sufficient information is provided to suspect pesticides as a possible cause.

Animal Health Complaint (Includes companion animals and wildlife):

- 1) A suspected or confirmed pesticide poisoning reported by a health care provider
- OR
- 2) A recent pesticide exposure event reported by an individual, where veterinary assistance was sought and sufficient information is supplied to suspect pesticides as a possible cause
- OR
- 3) Multiple animal deaths where pesticides are a suspected cause.

Environmental Contamination:

- 1) Documented or potential environmental damage from a pesticide fire, spill, or incident, of sufficient magnitude to cause animal effects, or potential public health impacts.

When PARC is not provided with sufficient information to coordinate an investigation, the information is tracked as an incident report. Incidents are tracked if any allegations are made that a pesticide may be involved in the illness of a human or pet, causing harm to the environment, or spilled or released into the environment. This includes odor complaints, concerns about the environment in general, container issues or any time it is initially felt that pesticides are causing harm.

Additionally, when PARC acts as a consultant for public agencies or the public, the call may be tracked as an incident. This is done when, in the opinion of the PARC Coordinator, it may be an issue the Board might want to consider.

Each pesticide related incident that meets the criteria for investigation coordination is assigned an incident number AND a case number.

A case number may be issued to an incident that, upon further investigation, does not meet case criteria. These cases may be classified with the designation "Insufficient information to classify".

The PARC Coordinator and appropriate state department(s) investigate all incidents to determine if they meet PARC Case criteria. When an incident does not meet case criteria, the findings are logged and the incident closed. Important incident findings are tracked and reviewed for valuable information on trends or patterns of problems associated with pesticide use.

Case Classification Criteria

Every case is subject to review and classification by the PARC Board. Two indices are used during this classification review: Certainty and Severity.

Certainty Index (CI): A human or domestic animal case requires a reported pesticide active ingredient and a reported exposure or possible exposure. The facts of the case must answer the question "Were the reported impacts caused by the reported exposure to pesticides?"

Definitions of the certainty indices for **humans and domestic animals** (companion animals, pets) are below.

CI = 1 Definite: Measured concentration(s), with a highly plausible exposure pathway and specific health effects that are consistent with exposure to the active ingredient(s).

CI = 2 Probable: A clearly documented and highly plausible exposure pathway with health effects that are consistent with exposure to the active ingredient(s). A single, non-specific symptom (headache, nausea) is generally insufficient to classify with this certainty index.

CI = 3 Possible: There is uncertainty with respect to the likelihood of exposure, the circumstances surrounding the exposure, or the consistency of the reported symptoms based upon the reported active ingredient(s). Inconsistent symptoms with the known toxicology of the active ingredient are sufficient to move a classification to CI 4.

CI = 4 Unlikely: The primary complaint or the majority of the reported symptom(s) are not consistent with the toxicology of the active ingredient(s) or the time between exposure and onset or duration of symptoms is not consistent with the toxicology of the active ingredient(s) or there is no plausible exposure pathway.

CI = 5 Unrelated: Not pesticide related – requires corroboration of “Unrelated” classification from a qualified health care professional involved in the case.

CI = 0 Exposure, No symptoms: There is verifiable exposure, but no symptoms.

An environmental PARC Case requires reported active ingredients and reported exposure or possible exposure. Definitions of the certainty indices for **wildlife and other non-target organisms** (bees, fish, invertebrates, etc) are below.

CI = 1 Definite: Pesticide was confirmed as the cause through residue analysis or other reliable evidence, or the circumstances of the incident along with knowledge of the pesticide’s toxicity or history of previous incidents give strong indication that this pesticide was the cause.

CI = 2 Probable: Circumstances of the incident and properties of the pesticide indicate that this pesticide was the cause, but confirming evidence is lacking.

CI = 3 Possible: The pesticide possibly could have caused the incident, but there are possible explanations that are at least as plausible. Often used when organisms may have been exposed to more than one pesticide.

CI = 4 Unlikely: Evidence exists that a stressor other than exposure to a pesticide caused the incident, but that evidence is not conclusive.

CI = 5 Unrelated: Conclusive evidence exists that a stressor other than exposure to a pesticide caused the incident.

CI = 0 Exposure, no symptoms: A potentially significant exposure was documented, though no symptoms were reported due to mitigating circumstances, efficient clean up, or rescue.

Detection indices for **groundwater, surface water, and drinking water** are below.

CI = Major: A pesticide is detected at levels greater than the maximum contaminant level (MCL), health advisory level (HAL), or another applicable criterion for ambient water quality.

CI = Moderate: A pesticide is detected at levels greater than 10 percent but does not exceed the MCL, HAL, or another established criterion for ambient water quality.

CI = Minor: A pesticide is detected at levels less than 10 percent of the MCL, HAL, or another established criterion OR a pesticide is detected but there is no established level of concern.

Severity Index (SI): The severity index was designed only for humans, though PARC applies this index to domestic animals and wildlife as well. For domestic animals and wildlife the symptoms indicated in the definitions guide the selection of the severity index for each case.

This index provides standardized criteria to ensure uniformity, with the recognition that it cannot address all situations. It is a flexible standard needing the user to employ judgment and experience when assigning severity.

SI = 1 Death: This category describes a human fatality resulting from exposure to one or more pesticides.

SI = 2 High severity illness or injury: The illness or injury is severe enough to be considered life threatening and typically requires treatment. This level of effect commonly involves hospitalization to prevent death. Signs and symptoms include, but are not limited to, coma, cardiac arrest, renal failure and/or respiratory depression. The individual sustains substantial loss of time (greater than five days) from regular work or normal activities. This level of severity may include the need for continued health care following the exposure event, prolonged time off of work, and the limitations or modification of work or normal activities.

SI = 3 Moderate severity illness or injury: This category includes cases of less severe illness or injury often involving systemic manifestations. Generally, treatment is provided. The individual is unable to return to normal functioning without any residual disability. Usually, less time is lost from work or normal activities (greater than three and less than five days). Effects may persist but no residual impairment is present.

SI = 4 Low severity illness or injury: This is the category of lowest severity. It is often manifested by skin, eye or upper respiratory irritation. It may also include fever, headache, fatigue or dizziness. Typically the illness or injury resolves without treatment. There is minimal lost time (less than three days) from work or normal activities.

SI = 5 No symptoms reported: This category is used for cases that the PARC Board or staff chooses to designate as a case for tracking purposes. They may highlight a risk or potential risk for future review.

In 2006-2007, the PARC Classification criteria were in transition. Having been approved but unused during 2006, incidents were evaluated to identify whether they fit the criteria. Incidents that fit the case criteria were assigned a case number and researched to collect all investigative findings. These investigative findings were then used to assign a set of indices for each case, or to determine that there was insufficient illness information to classify it.

APPENDIX III - CASE SUMMARIES BY COUNTY

Classification of the Certainty Index and the Severity Index are completed as separate evaluations. The evaluations are based on medical records, if available, personal communication with affected parties, symptoms, investigative findings, application records, and technical information on the pesticides applied. All verifiable information is used to come to a sustainable conclusion for each classification index.

Benton County

Case # 080028

Environmental – Endangered Species

Certainty Index: 2 (Probable)

Pesticide Type: Herbicide

Pesticide: Glyphosate, Sulfometuron Methyl and Chlorsulfuron

Benton County Public Works called ODA regarding a concern to some endangered Nelson's Checker Mallow plants showing symptoms of having been sprayed recently. The investigation found that the checker mallow had been sprayed and killed with a pesticide.

Case # 080036

Occupational

Four adults

Type of Care: None

Certainty Index: 2 (Probable)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Fungicide and other

Pesticide: Triexapac-ethyl, Azoxystrobin and Propiconazole

ODOT contacted ODA concerning a possible pesticide drift onto four ODOT workers. The workers were cutting trees along a right-of-way and flagging traffic when they were allegedly drifted on by an application to a nearby grass field.

Clackamas County

Case # 070032

Non-Occupational

One adult and two children

Type of Care: Emergency medical care

Certainty Index: 2 (Probable)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Insecticide

Pesticide: Chlorpyrifos

Two mothers and nine children were walking to their vehicles when they felt they had been affected by the aerial application of chlorpyrifos to a Christmas tree plantation, adjacent to a U-pick blueberry farm where they were picking blueberries. Medical records documented the symptoms of several of the people involved.

Case #080024**Animal – Livestock****Certainty Index:** 4 (Unlikely)**Severity Index:** 1 (Death)**Pesticide Type:** Herbicide**Pesticide:** Hexazinone and Sulfometuron methyl

A caller to PARC was concerned that an application of an herbicide to the neighbor's Christmas trees had "trespassed" onto her property. Some time after the application a calf was stillborn on her property and she was concerned that the herbicide had caused the death of the fetus.

Curry County**Case # 070047****Non-Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 3 (Possible)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Herbicides**Pesticide:** Glyphosate, 2,4-D, Trichlopyr, Metsulfuron-methyl

ODF received a call stating an aerial spray operation took place near the caller's home. He was concerned the spray application had oversprayed onto his property and was worried for his family's health. The ODF investigation stated the recorded weather conditions were within application requirements and the application rates were within specifications. The complainant's residence is located approximately 1140 feet from the operation boundary. There was no visual indication of overspray on or near the residence.

Deschutes County**Case # 080041****Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 1st incident: 2 (Probable)/ 2nd incident: 4 (unlikely)**Severity Index:** 2 (Low Severity illness or injury) for both incidents**Pesticide Type:** Insecticide and Herbicide**Pesticide:** D-Trans Allethrin, Lambda-cyhalothrin and Chlorothalonil

An employee reported two instances of broken containers and possible exposure to the pesticides. In one instance she was sprayed in the face with a container of Ace Foaming Wasp spray. The second incident she was cleaning up a spilled pesticide on the shelf. She cleaned up the spill with paper towels and later reported having symptoms and sought medical treatment.

Douglas County

Case # 070034

Occupational

One person

Type of Care: Health care provider (doctor's office)

Certainty Index: 3 (Possible)

Severity Index: 3 (Moderate severity)

Pesticide Type: Other

Pesticide: CCA-C Concentrate 60%

A wood products worker, who was responsible for applying chromate copper arsenate to wood, felt he had symptoms due to exposure to the pesticide at work. This investigation included DEQ, ODA and OR-OSHA staff. ODA found no application or labeling violations but found that there were violations of licensing requirements at the plant. DEQ found that the company was generating more waste than it had claimed, a violation, and also documented soil contamination issues. OR-OSHA did not find violations of worker protection that could be documented.

Case # 070043

Non-Occupational

One person

Type of Care: Health care provider (doctor's office)

Certainty Index: 2 (Probable)

Severity Index: 3 (Moderate severity)

Pesticide Type: Herbicide

Pesticide: Glyphosate, 2,4-D

A hunter was driving near Roseburg on Seneca Jones Timber Company property. He stopped to speak with an employee of Seneca Jones, who were preparing to make an application. The complainant parked near the spray truck that was being prepared. When the spray truck was started, the contents of the spray line, containing the previous days spray solution, discharged onto the complainant and into his pickup. The complainant dried himself and the inside of his truck and then drove home (only a few minutes away), showered, and changed his clothes.

Case #080020

Non-Occupational

Type of Care: None

Certainty Index: 3 (Possible)

Severity Index: 4 (Low severity)

Pesticide Type: Herbicide

Pesticide: Hexazinone and Sulfometuron

A caller to ODA reported a spray application to forest land near his property. A helicopter applied a pesticide to the cut unit and the complainant felt the application caused him to exhibit the following symptoms: headache, nausea, stinging on eyelids, and general malaise. He did not go to a doctor.

Case #080037

Animal – Dog

Certainty Index: 3 (Possible)

Severity Index: 2 (High Severity Illness and Injury)

Pesticide Type: Insecticide

Pesticide: Permethrin

A veterinarian had concern about a poisoned dog. The condo grounds were sprayed with Bonide Termite and Carpenter Ant Killer before the dog was walked in area. The dog was in vet's office for several hours with persistent seizures.

Jackson County

Case # 080031

Non-Occupational

One person

Type of Care: Physician

Certainty Index: 2 (Probable)

Severity Index: 4 (Low severity)

Pesticide Type: Insecticide

Pesticide: Azinphos-methyl, Abamectin, Thiamethoxam, Zinc demethyldithiocarbamate and Petroleum oil

A woman was riding a bicycle along a county road when she felt she was exposed to pesticides being applied with an air-blast sprayer next to the road. She smelled an odor and felt moisture on her face. She experienced a headache and runny nose and began sneezing an hour after the exposure.

Case # 080033

Non-Occupational

One person

Type of Care: None

Certainty Index: 4 (Unlikely)

Severity Index: 4 (Low severity)

Pesticide Type: Herbicide

Pesticide: 2, 4-D and Triclopyr

A tenant of an apartment complex called an ODA investigator to complain of becoming sick from an application of herbicides to blackberries near his apartment. He stated that he had headaches, coughing and sinus trouble, which he was being treated for before this application, but he believes his symptoms have become worse since the spray.

Klamath County

Case # 070031

Non-Occupational

One person

Type of Care: Health care provider (doctor's office)

Certainty Index: 3 (Possible)

Severity Index: 3 (Moderate severity)

Pesticide Type: Insecticide

Pesticide: Malathion

A man complained that he felt that vector control applications had resulted in his ongoing health symptoms. He felt that one application had drifted onto him while he was in his yard watching the airplane treat the neighboring cattle pasture. During the second application, he was in the pasture with the cattle and the airplane passed directly overhead.

Case # 070033**Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty index:** 3 (Possible)**Severity index:** 3 (Moderate)**Pesticide Type:** Fungicide**Pesticide:** Fludioxonil, Cyprodinil, Captan

A farm worker was working at a strawberry nursery disbudding and deflowering strawberries when he began to exhibit symptoms. Fungicides had been applied to several of the fields prior to the work being done by the field workers. After investigation, OR-OSHA cited the farm for several serious training and notification violations.

Lane County**Case # 070040****Non-Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 4 (Unlikely)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Herbicide**Pesticide:** Glyphosate, Imazapyr, Metsulfuron-methyl

A caller to ODA reported that she was exposed to an aerial application of forestry herbicides near her home. Two ODF foresters were conducting an observation on site during the application. Evaluation of records found several of the reported symptoms to be atypical for the herbicide applied and, in view of the distance from the application and low likelihood of spray drift, not likely to be pesticide related.

Case # 070041**Non-Occupational****Two Adults****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 4 (Unlikely)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Herbicide**Pesticide:** Glyphosate, Metsulfuron-methyl

A caller to ODA reported that he and his wife were exposed to an aerial application of forestry herbicides near their home. The documentation provided information that the application was made in a legal manner with no drift of the herbicide observed. Evaluation of records found several of the reported symptoms to be atypical for the herbicide applied and, in view of the wind direction, distance from the application, and low likelihood of spray drift, not likely to be pesticide related.

Case # 080002**Occupational- Spill****Three Adults****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 2 (Probable)**Severity Index:** 3 (Moderate severity)**Pesticide Type:** Other**Pesticide:** Pentachlorophenol

A product-testing laboratory, conducting product testing, spilled pentachlorophenol onto and around testing equipment. The laboratory area did not have a barrier between it and the surrounding businesses. Approximately 30-gallons of product was spilled. An adjacent business was affected as well.

Case # 080018

Non-Occupational

One person

Type of Care: None
Certainty Index: 3 (Possible)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Herbicides
Pesticide: Hexazinone

A caller to ODA was outside in her garden working when she saw a helicopter flying over her garden and house to treat a forestry track. She said that the application started right over her house/garden/river prior to the helicopter getting to the target area. She noted there had been a lot of wind.

Case # 080021

Non-Occupational

One person

Type of Care: Emergency Room
Certainty Index: 3 (Possible)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Herbicides
Pesticide: Gyphosate

A man felt he was affected by an herbicide application to nearby landscape plants while he was walking from his car to his place of employment. The complainant felt the application caused him symptoms of respiratory distress, burning throat, headache and coughing.

Case # 080029

Non-Occupational

One person

Type of Care: Physician
Certainty Index: 4 (Unlikely)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Herbicides
Pesticide: Hexazinone

Callers to ODA reported that their daughter was exposed to an early morning aerial application of forestry herbicides near their home. The daughter heard a helicopter when she got out of bed and saw a helicopter flying overhead. An ODA investigator was on the application site during the application conducting an observation of the application. The documentation provided information that the application was made in a legal manner with no drift of the herbicide observed. Maps of the area show that the application site was approximately three-fourths of a mile from the home of the complainant.

Linn County

Case #070042

Non-Occupational

One person

Type of Care: None
Certainty Index: 2 (Probable)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Herbicide
Pesticide: Triclopyr, Glyphosate

A caller to ODA reported the use of Crossbow at an unspecified Linn County high school. The caller stated that students had made pesticide applications without personal protective equipment (PPE), and that some of them had been using a PTO-driven tractor-mounted sprayer. After spraying, they would go to class without taking any cleanup measures. The caller's son had been exposed to the spray and developed a rash. It had initially been confused with poison oak but later appeared to be a result of exposure to the spray.

Case #080032

Non-Occupational

Three Adults and one Child

Type of Care: None
Certainty Index: 3 (Possible)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Fungicide and other
Pesticide: Trinexapac-ethyl, Azoxystrobin and Propiconazole

A caller to ODA alleges an application to a neighboring grass field made his daughter sick along with two of his employees. He noticed that his daughter was especially "fussy" (irritated) and had "red eyes" for no apparent reason. These apparently dissipated within two hours. At the exact same time, he experienced sudden onset of a headache that lasted two hours.

Marion County

Case #070035

Occupational

One person

Type of Care: Health care provider (doctor's office)
Certainty Index: Insufficient Information to Classify
Severity Index: n/a
Pesticide Type: Herbicide
Pesticide: Triclopyr, 2,4-D, Sulfometuron-methyl, Clopyralid

A pesticide applicator and mixer/loader for a commercial applicator called with various symptoms that he thought were from the herbicides he was applying on a daily basis. OR-OSHA found various serious worker protection violations when conducting an investigation. There were no medical records received for this person. The information available on the symptoms for this particular worker, who no longer worked for the company, was insufficient to lead to a classification by PARC.

Case #070038**Non-Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty Index:** Insufficient Information to Classify**Severity Index:** n/a**Pesticide Type:** Herbicide**Pesticide:** Various herbicides

A caller felt that his 16-year-old son had been exposed to and affected by pesticides while visiting his mother at her place of work, a commercial operator. He stated that the boy had been mixing and loading pesticides while there and had come home with illness symptoms. The boy was not employed by this company to conduct any work activities.

During investigation, OR-OSHA found no evidence that the boy had been mixing and loading or conducting any other work activities that included pesticides. Additionally, no specific pesticide could be named as a possible precursor to illness symptoms.

Case # 080004**Animal – Pets and Wildlife****Certainty Index:** 1 (Definite)**Severity Index:** 1 (Death)**Pesticide Type:** Insecticide and Rodenticide**Pesticide:** Strychnine and Aldicarb

Person or persons unknown have poisoned dogs with strychnine, in Terrabonne, Oregon. The media has documented at least five dogs and one deer that have been killed. The dogs are running loose so a specific source has not been documented. Several more dogs were poisoned during January, including a Yorkshire terrier and a Golden Retriever. A dead deer was found in the area. The deer was poisoned with strychnine and scavenged by dogs. A direct correlation was never found between the dead dogs and the deer, but no more dogs have been killed since the deer was picked up. Strychnine has been confirmed as the causative agent by two separate laboratories.

Case # 080013**Non-Occupational****Three Adults and 5 Children****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 4 (Unlikely)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Herbicide**Pesticide:** Bromoxynil, MCPA, Thifensulfuron, Pinoxaden and Clopyralid

ODA received a phone call from an individual regarding an aerial application to a neighboring wheat field that she alleges lead her and her family to exhibit symptoms.

Case # 080022**Animal – Wildlife****65 Geese****Certainty Index:** 1 (Definite)**Severity Index:** 1 (Death)**Pesticide Type:** Rodenticide**Pesticide:** Zinc Phosphide

A call to PARC alerted investigators that geese had died at Staats Lake in large numbers. USFWS, ODFW, and ODA all began investigating the deaths. Geese were found positive for zinc phosphide at two different laboratories.

Case # 080025

**Occupational
Multiple Individuals**

Type of Care: Health care provider (doctor's office)
Certainty Index: 2 (Probable)
Severity Index: 3 (Moderate severity) One individual on heart medication
4 (Low severity illness or injury) Rest of employees and emergency responders
Pesticide Type: Insecticide
Pesticide: Pyriproxifen and Pyrethrins

A fogger application was made to a WinCo warehouse. The pest control business ventilated the building with fans for approximately one hour before allowing employees to enter. Several employees were apparently affected and exhibited symptoms. One employee, who was on cardiac medications, experienced exacerbated symptoms.

Case # 080040

**Occupational
Four Adults**

Type of Care: None
Certainty Index: 3 (Possible)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Fungicide
Pesticide: Azoxystrobin and Propiconazole

Four employees of the ODA, Commodity Inspection Division, Salem felt they had been affected by an application of a pesticide to a grass field adjacent to their work area while at a nursery. The individuals affected experienced metallic taste, headaches, sore throat, thirst, and hypertension.

Multnomah County

Case #070030

**Non-Occupational
One person**

Type of Care: Health care provider (doctor's office)
Certainty Index: 2 (Probable)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Herbicide
Pesticide: 2,4-D

A man working in his backyard inadvertently drank Crossbow from a commercial food container, which he used to store the herbicide.

Case #070036

**Non-Occupational
One person**

Type of Care: Health care provider (doctor's office)
Certainty Index: 3 (Possible)
Severity Index: 3 (Moderate severity)
Pesticide Type: Insecticides
Pesticide: Permethrin, Pyriproxyfen, Pyrethrins, Methoprene

A man living in an apartment used flea pump sprays and foggers for three weeks to try to rid his apartment and dogs of a flea infestation. He began having skin and respiratory problems and moved out of his apartment. He used three flea foggers in his 1100 sq. ft. apartment on two separate occasions approximately one week apart. He also used a pump flea product on his furniture and dogs for the same three weeks.

Case #070037

Non-Occupational

One person

Type of Care: None

Certainty Index: 4 (Unlikely)

Severity Index: 3 (Moderate severity)

Pesticide Type: Insecticides

Pesticide: Permethrin, Bifenthrin, Pyrethrins

A woman felt that the application of gel bait insecticides and a highly dilute product to the foundation of her home by a commercial applicator had affected her health. ODA found no applications inconsistent with labeling and no route of contact between the woman and the pesticides. She stated that there was an unpleasant odor around the perimeter of her home; however, the investigator could not confirm this during his visit to the home.

Case #070039

Non-Occupational

One person

Type of Care: None

Certainty Index: Insufficient Information to Classify

Severity Index: n/a

Pesticide Type: Insecticides

Pesticide: Imidacloprid and Cyfluthrin

ODA received a phone call reporting a person experienced a rash or skin irritation for about four weeks about the beginning of the time she saw posting about some pesticide applications near her home. An ODA investigator inquired about Japanese Beetle applications in the area. Japanese Beetle applications occurred in area on July 24, 25 and August 6, 2007. This incident was never forwarded to the OPHD and as such medical records were not obtained. Because of the lack of medical records the toxicologists were unable to make a determination as to certainty or severity.

Case #070044

Non-Occupational

Two Adults and two children

Type of Care: None

Certainty Index: 2 (Probable)

Severity Index: 3 (Moderate severity)

Pesticide Type: Fogger

Pesticide: Cypermethrin

A husband and wife were at their son's home with their grandchildren (seven and eight years old), who accidentally set off a can of Raid Concentrated Deep Reach Fogger. The husband called OPC and was advised to leave immediately.

Case #070045

Non-Occupational

One Person

Type of Care: Emergency Room

Certainty Index: 3 (Possible)

Severity Index: 3 (Moderate severity)

Pesticide Type: Insecticide

Pesticide: Deltamethrin, Pyrethrins, Piperonyl Butoxide, Pyriproxyfen, Acephate

ODA received a call from a person complaining of an application that had been made to his apartment for cockroaches.

Case #080009**Non-Occupational****One person****Type of Care:** Health care provider (doctor's office)**Certainty Index:** 2 (Probable)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Insecticide**Pesticide:** Deltamethrin

ODA received a complaint from a woman who lives in an apartment complex that was treated by a pest control company to control beetles. After the application, she saw pesticide product on the floor and was told to vacuum it up. The deltamethrin was vacuumed up with a regular vacuum cleaner, but the vacuum bag was not attached.

Case #080035**Occupational****Six Adults****Type of Care:** None**Certainty Index:** 2 (Probable)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Mossicide**Pesticide:** Copper Naphthenate

OPHD contacted an individual who alleges he was exposed to a pesticide. Office building workers were exposed after a pesticide application by a roofing company. The roofing company was power spraying the roof of their building when the smell from the application became overpowering inside the offices. Other individuals did not want to be identified due to fear of repercussions from their employer. The complainant stated she experienced red, burning eyes, a headache, and nausea.

Case #080048**Non-Occupational****One person****Type of Care:** None**Certainty Index:** 2 (Probable)**Severity Index:** 4 (Low severity illness or injury)**Pesticide Type:** Insecticide**Pesticide:** Permethrin

ODA contacted an individual about a news report of pesticide containers exploding. She said some containers of Black Flag foggers had been in her daughter's car for some time but could not remember exactly when she had given them to her daughter. She claims three cans of Black Flag Indoor Foggers exploded inside the car. One of the cans punctured the windshield of the car, the other two bounced off and ended up on the dashboard. The car was parked and no one was in the vehicle at the time of the explosions. The daughter claims having headaches about the same time the cans exploded inside the car.

Umatilla County

Case #080007

Occupational

One person

Type of Care: Health care provider (doctor's office)

Certainty Index: 2 (Probable)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Herbicide

Pesticide: Glyphosate

The Hermiston Community Health Center called to report a Spanish-speaking worker who had been applying pesticides had felt ill and had been fired. OR-OSHA found various problems with pesticide training when conducting an investigation.

Case #080026

Environmental – Spill

Certainty Index: 2 (Moderate)

Pesticide Type: Herbicide

Pesticide: EPTC

A caller to ODA reported a spill of the herbicide Eptam from a bulk container during filling operations. Over 1,000 gallons spilled into containment areas. DEQ is lead on this clean-up and it is unknown how much contamination occurred. No employees were contaminated or became ill according to current information.

Case #080038

Occupational

One person

Type of Care: Hospital

Certainty Index: 3 (Possible)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Herbicide

Pesticide: Glyphosate and 2, 4-D

OR-OSHA received notification from an employer that one of their employees had been hospitalized with what was believed to be pesticide poisoning. He had been applying Weedar 64 and Glystar Original wearing coveralls, boots, gloves and eye protection for multiple days. The day prior the temperature was 90-degrees, the day of hospitalization was 79 degrees. Upon reaching the hospital he was experiencing shaking, vomiting, dizziness, chills, really bad headache, was disoriented, could not walk straight, and had a fever. He was in the hospital (including intensive care) for multiple days.

Washington County

Case #070046

Non-Occupational

One person

Type of Care: None

Certainty Index: 3 (Possible)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Insecticides

Pesticide: Chlorpyrifos

ODA received a call from a person complaining of an application that had been made to a neighboring filbert orchard. The caller stated the mist from the orchard sprayer had drifted into her home. ODA took samples and found the product had moved off site onto the caller's property.

Case #070050**Non-Occupational****One adult and two children**

Type of Care: None
Certainty Index: 2 (Probable)
Severity Index: 4 (Low severity illness or injury)
Pesticide Type: Fungicide
Pesticide: Chlorothalonil, Copper Hydroxide

ODA received notice from Washington County Environmental Health that an individual was exposed to a pesticide application. The family rents a house on a 60-acre working farm. The landlord notified them that they would be spraying the orchard adjacent to their residence and "not to worry" about the application. The complainant and her children were playing outside the day the orchard was sprayed. ODA took samples and found the product had moved off site onto the complainant's property.

Case #070076**Non-Occupational****One person**

Type of Care: Health care provider (doctor's office)
Certainty Index: 3 (Possible)
Severity Index: 3 (Moderate severity)
Pesticide Type: Insecticides
Pesticide: Boron sodium oxide

ODA received a Report of Loss form with an attached addendum describing a pesticide application. A commercial pesticide operator applied Tim-Bor insecticide to portions of the complainant's home and window areas indoors. The complainant followed behind the applicator as he applied, cleaning up the product on her wood surfaces. ODA conducted an investigation and found the company and applicator had violated label instructions stating not to apply the product to painted, varnished, or treated wood surfaces.

Case #080008**Animal – Geese**

Certainty Index: 1 (Definite)
Severity Index: 1 (Death)
Pesticide Type: Rodenticide
Pesticide: Zinc Phosphide

Canada geese were found dead at the Portland-Hillsboro Airport Pond. The geese stomach contents were analyzed for zinc phosphide and came back positive. No information on where the zinc phosphide was applied could be found.

Case #080015**Non-Occupational****One person**

Type of Care: None
Certainty Index: Insufficient Information to classify
Severity Index: n/a
Pesticide Type: Insecticides
Pesticide: Chlorpyrifos

OPHD received a call from a retired medical toxicologist, stating an incident had occurred to him when the man across the street collapsed on his front lawn and the complainant dashed across the street to assist him. While rolling around on the ground to recover his neighbor, he felt he got "herbicides all over me."

Case #080039

Occupational

One person

Type of Care: None

Certainty Index: 2 (Probable)

Severity Index: 4 (Low Severity)

Pesticide Type: Insecticides and Fungicide

Pesticide: Malathion and Azoxystrobin

An employee at a nursery contacted OPHD after being exposed to a pesticide application. An individual was tagging trees for sale in a nursery when she noticed a "weird" smell and felt her "nose burning". She ran to her van and drove away. She experienced nausea, headache and her face started burning.

Yamhill County

Case #070075

Animal - Wildlife

10 Geese

Certainty Index: 1 (Definite)

Severity Index: 1 (Death)

Pesticide Type: Rodenticide

Pesticide: Zinc Phosphide

Dead geese were found in the Willamette River in Yamhill County were confirmed as phosphide poisoning by the USFWS in October. The geese were picked up in September.

Case #080001

Occupational

Multiple individuals

Type of Care: None

Certainty Index: 3 (Possible)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Growth Hormone

Pesticide: Indole-3-Butyric Acid

OR-OSHA contacted PARC regarding the use of a technical product as a growth hormone for rooting cuttings of various plants. The company managers and the employees were complaining because the employees were experiencing ill effects from being in close proximity to the product when using it. The product was technical grade product, which developed a very strong odor without ventilation. After investigation, OR-OSHA, cited the firm for several serious training and personal protective equipment violations.

Case #080019

Animal - Pet

Certainty Index: 4 (Unlikely)

Severity Index: 1 (Death)

Pesticide Type: Herbicide

Pesticide: Triclopyr

A caller stated that after her neighbor sprayed his property with herbicides her duck died. She felt that he had drifted onto her property and killed the duck.

Case #080023

Occupational

One Person

Type of Care: Physician

Certainty Index: 4 (Unlikely)

Severity Index: 4 (Low severity illness or injury)

Pesticide Type: Insecticide

Pesticide: Imidacloprid and Bifenthrin

An employee of a rehabilitation center called to report that after an application at his place of work he had become ill. The complainant reported diarrhea after the application, but no other symptoms. The complainant stated that a previous application had occurred in 2007 and he had experienced more symptoms relating to that application.

APPENDIX IV - MEMBER AGENCIES AND CONSULTANT JURISDICTIONS

Pesticide Analytical & Response Center (PARC)

Resources/Programs: By referral and coordination, PARC requests investigations or resources from each of its member agencies.

Oregon Department of Agriculture (ODA) -*PESTICIDES DIVISION*

Resources/Programs: ODA has field staff positioned around the state with experience in pesticide application technology and regulation. As part of an investigation, ODA has access to laboratory services. ODA maintains a label for each pesticide registered in Oregon and a database of information about those products. ODA also maintains a database of information about pesticide-related licenses and licensees.

Oregon Health Authority, Public Health Division, (OPHD) *Office of Environmental Public Health, Research & Education Services, Pesticide Exposure Safety & Tracking (PEST) Program*

Resources/Program: The expertise within OEPH is diverse, and there are epidemiologists and occupational/environmental public health specialists, as well as environmental health specialists, environmental engineers, health physicists, research analysts.

Additional potential resources at the Office of Environmental Public Health include Drinking Water Program, Research & Education, Radiation Protection Services and Food, Pools and Lodging.

Oregon Department of Fish & Wildlife (ODFW)

Resources/Programs: ODFW district biologists handle issues with pesticide poisoning or spills that affect fish and wildlife. ODFW biologists assist to identify potential fish and wildlife receptors and resources that are at risk; assess extent of damage to the resource(s); collect samples for analysis and to identify laboratories for analysis.

Oregon Department of Forestry (ODF)

Resources/Programs: ODF has field offices across the state. ODF field foresters administer forest practice pesticide rules, which deal with natural resource protection. ODF investigates incidents that may involve violations of the forest practices rules. ODF maintains a database of information on planned forest pesticide applications.

Oregon Department of Environmental Quality (DEQ)

Resources/Programs: DEQ has field staff available in district offices and a dedicated laboratory facility. DEQ regulates water quality, air quality, and environmental quality.

Oregon Occupational Safety & Health Administration (OR-OSHA)

Resources/Programs: OR-OSHA has field staff available to investigate occupational incidents, and a library of educational materials relevant to pesticide handling, storage, and application in agriculture.

Office of the State Fire Marshal (OSFM)

Resources/Programs: The OSFM offers information about hazardous materials that are stored at facilities around the state. This can include pesticide storage, location, quantities, and hazard type. Expertise is also available regarding application of the Oregon fire code to pesticide storage.

Oregon Poison Center (OPC)

Resources/Programs: OPC staff is available for emergency consultation and advice regarding clinical toxicology issues 24 hours a day.

Center for Research on Occupational & Environmental Toxicology (CROET)

Resources/Programs: The Toxicology Information Center houses a special-use library with access to a variety of occupational safety and health and environmental information resources, including those related to the use of pesticides. CROET also has on staff a toxicologist, epidemiologist, and industrial hygienist who are prepared to answer questions related to the use of chemicals (including pesticides) in the home and workplace. Additionally, CROET can address animal-poisoning issues.

Oregon State University - ENVIRONMENTAL & MOLECULAR TOXICOLOGY DEPARTMENT (OSU)

Resources/Programs: OSU medical and environmental toxicologists evaluate case information using investigations and reports from member agencies, illness symptoms, and pesticides identified during investigations. The Board uses these evaluations to classify the likelihood of pesticide effects using the PARC Classification Criteria.

APPENDIX V - MEMORANDA OF UNDERSTANDING AND CONSULTANT CONTRACTS

These documents are available in hard copy or electronic form from the Oregon Department of Agriculture at parc@oda.state.or.us or 503-986-6470. Each document specifies the duties and responsibilities of each contractor.