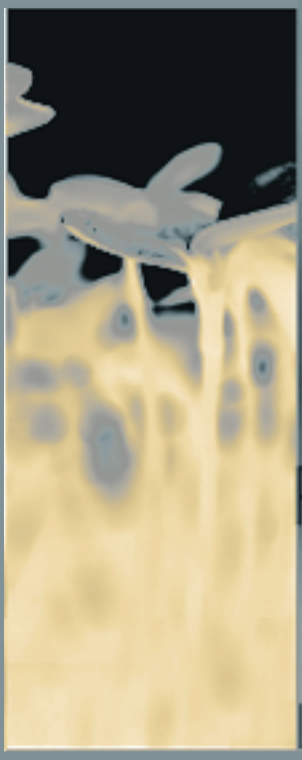
dpr

2004/05 PROGRESS REPORT



DEPARTMENT OF PESTICIDE REGULATION

Agenda for action

The past two years have been marked by dramatic changes for state government, including the Department of Pesticide Regulation. Now we have an opportunity to review and assess these changes as we prepare DPR's future course.

Our budget and business fees have been revamped due to record state deficits. At the Legislature's direction, we undertook a major funding shift to support our regulatory programs with licensing and registration fees. We created a new branch to pursue fair and equitable mill assessments on pesticide makers and sellers. Now we are working with these stakeholders to make sure that everyone pays their fair share. At the same time, we instituted a sophisticated cost-accounting system to make our operations as efficient as possible.

We have also closed the loop on several major, long-standing program initiatives.

In the rulemaking area, we developed a unique approach to ground water protection regulations that are preventive yet offer flexibility for pesticide users. We also completed regulations for the fumigant methyl bromide that included the first subchronic exposure standards in the U.S. to better protect workers and others. Now we will concentrate on other fumigants to ensure that workers and the public are protected.

Turning to enforcement, we put new emphasis on improving oversight of local enforcement and fine-tuning the working relationship with our local partners, the County Agricultural Commissioners. Pesticide drift prevention continues to be a high priority. The commissioners have also received authority to levy higher civil penalties.

On the environmental monitoring front, we undertook a major effort to help develop data for surface water regulatory actions, and we began a formal review of diazinon and chlorpyrifos after these insecticides were identified as surface water contaminants. Meanwhile, we prepare to tackle the clean air challenges posed by volatile organic compounds (VOCs) in pesticide products.

As always, we will base our regulatory decisions on a foundation of sound science. To better focus our resources, we adopted a new policy for prioritizing pesticides for risk assessment. We also refocused our risk assessments to incorporate air, water, and other environmental factors at the same time.

Finally, we understand that California's environmental and economic interests should be complementary rather than conflicting, providing safer, efficacious products to meet the needs of California's farms, businesses and consumers. Therefore, we have undertaken a registration reform initiative to speed new, reduced-risk pesticides to market. This attitude will guide our agenda for action.

Mary-Ann Warmerdam, *Director*

About pesticides, about DPR

Pesticides play a unique role in environmental protection.

Contradicting the usual preventive approach, pesticides are toxic by design and deliberately released into nature. This paradox is explained by the fact that pesticides, when used properly, protect people and their environment from pests – animal, plant or microbial – that threaten human health and the balance of nature. Indeed, nature created the first chemical pesticides, produced by some plants and animals to repel their natural enemies.

Over time, people have observed, adapted, and improved upon natural pest management. Like most human endeavors, the beneficial use of pesticides depends upon information and sound judgment. Scientific knowledge of pesticides continually evolves and improves. California has embraced a scientific approach in developing the foremost and most comprehensive pesticide regulation program in the nation. Our task is to ensure that pesticides are used safely, and we won't compromise our standards and commitment to protect people and the environment.

The California Department of Pesticide Regulation (DPR) is the state's lead authority for pesticides. DPR has received national and international recognition for its work. While all pesticides must legally receive federal approval before use, DPR requires its own review and registration process to meet higher California standards.

Once a pesticide is approved, DPR and the County Agricultural Commissioners enforce the nation's most stringent pesticide laws. Due to the size and diversity of California agriculture, DPR relies on a close working relationship with the commissioners. They serve as local enforcement agents for state pesticide laws and regulations, and they are integrally involved in many DPR programs. For example, the commissioners issue site-specific permits required before many pesticides can be used, and they conduct inspections of pesticide applications. Through this partnership, we strive to achieve equitable and consistent enforcement of pesticide laws.

In addition to supervising these local enforcement programs, DPR monitors pesticides – from the farm field to the grocery shelf – to assure the safety of workers and consumers. As a final step, DPR continuously re-evaluates its programs, emphasizing risk reduction and, whenever possible, encouraging less use of pesticides in favor of more natural pest controls.

Protecting people

Safety is the key to every law we enforce, every program we administer.

Emphasizing enforcement

The intent of pesticide laws and the regulatory policies that implement them is to protect people and the environment from the harmful effects of pesticides. However, without strong enforcement, laws and policies are just paper tigers. Action is what counts. In 2003 and 2004, DPR took steps to ensure strong enforcement at both the state and county levels.

The County Agricultural Commissioners (CACs) are the primary enforcement arm of the pesticide program, overseeing local pesticide use. In 2003, DPR and the counties adopted a new annual work planning and performance review process, including specific measurements that relate to public health, occupational safety, and environmental quality. For example, drift incident reduction and fumigant application inspections were designated high priorities for local enforcement in the 2003-2004 evaluation period.

DPR and county staff do joint inspections to help ensure that compliance and enforcement activities are conducted efficiently and effectively throughout the State. In addition to these oversight inspections, and inspections that county staff perform independently, DPR field staff also inspect hundreds of worksites to assess compliance with worker protection requirements. In 2001, DPR completed an audit of industry compliance in 20 counties to evaluate the performance of growers, applicators, and other pesticide users in meeting worker protection requirements. In counties where industry compliance fell below 80 percent, the CACs developed and implemented work plans to improve oversight. DPR continues to assess industry performance in coordination with the Commissioners, using the information to target improvement efforts statewide.

The Commissioners have long had authority to levy administrative civil penalties for pesticide violations. The Legislature in 2002 increased the maximum penalty from $1,000 to $5,000 for serious violations. In 2004, DPR put into place regulations that provide guidance to Commissioners on when the increased fines should be imposed.

To assist the CACs, DPR developed and distributed several enforcement aids, including a "regulatory toolbox" – a four-page quick reference that gives inspectors the range of enforcement options at their disposal. We packaged it with a summary of laws and regulations that can be cited in enforcement actions.

In December 2003, DPR issued formal guidance to help Commissioners improve investigations of pesticide episodes in which large numbers of people are made ill. The guidelines have already proven their worth in helping local authorities effectively identify potential victims and pursue investigations.

Restricting fumigants

Reducing the impact of fumigants in ambient air has been a major focus of DPR's scientific and regulatory efforts for a number of years. Because they are gaseous, fumigants are more likely to show up in ambient air than other pesticides. A high percentage of drift illnesses are caused by fumigants. Yet fumigants are also critical in controlling soil-borne pests.

Since 1992, DPR has been tightening controls on methyl bromide, prompted by health concerns for workers and others who live or work near application sites. This resulted in the nation's toughest methyl bromide controls, including buffer zones, limitations on worker hours, and limitations on acreage that can be treated in any single application – all designed to protect against short-term (acute) exposures.

DPR then evaluated seasonal exposures from multiple fumigations that occur over several weeks. In 2004, we implemented new regulations that put buffer zone distances and duration in law and require respiratory protection for workers in some circumstances. They also require DPR and County Agricultural Commissioners to use measures designed to ensure that air concentrations outside of buffer zones do not exceed an average of 9 ppb in any month. This may require imposing geographic caps on methyl bromide use or equivalent protective measures. Although methyl bromide applications have declined in California (as a result of DPR's restrictions and an impending international phaseout), some use is expected to continue for several years. Ensuring people are protected is DPR's overriding concern.

Scarcity of the methyl bromide supply has prompted growers to turn to other fumigants, including metam-sodium and chloropicrin. Both fumigants have been implicated in major drift incidents, adding urgency to DPR's efforts to craft restrictions designed to prevent such problems. We are working closely with U.S. EPA on control measures for metam-sodium and chemically related fumigants. U.S. EPA expects new rules in place by 2006. In the interim, many County Agricultural Commissioners have imposed stringent controls in areas where potential problems may occur.

At DPR's request, the State Air Resources Board monitored for chloropicrin and sulfuryl fluoride in 2003 and 2004. Methyl iodide is a proposed replacement for methyl bromide that has not yet been registered in the U.S. or California. We are conducting a methyl iodide risk assessment – before it can be registered in California – we will know what use restrictions are needed to protect workers and others who work or live near treated fields.

In April 2004, DPR began a study to measure air concentrations and estimate emission rates for various fumigants used individually and in combination. Our goals were to determine the effectiveness of current or proposed buffer zones, and

In the 2003-04 fiscal year, the County Agricultural Commissioners issued 35,995 permits (1,121 were denied), completed 36,648 inspections, issued 6,620 compliance actions and 975 penalty actions.

A highlight of the 2004 legislative session was the passage and signing of Senate Bill 391 (Florez). In signing the bill, Governor Schwarzenegger praised the measure for "ensuring the immediate medical treatment and timely payment for individuals injured by the improper application of agricultural pesticides." It squarely places the financial burden to pay for acute medical costs on those businesses that create the harm when they violate pesticide rules. SB 391 also increased the penalty authority for non-occupational incidents imposed at the local level. The provisions went into effect January 1, 2005.

to gather data on relative emission rates between fumigants. If we can establish a consistent relationship in relative emission rates, monitoring data for one fumigant may be used as surrogate data for another. Leveraging data can help DPR detect variations in emissions with soil type, cultural practices, or other factors that are not detectable with current data. This could provide more flexibility and buffer zone adjustment for local conditions than is now possible, allowing fumigant applications to be conducted while protecting workers and others near application sites.

Completing risk assessments

Risk assessment plays a critical role in DPR's evaluation of the potential hazards associated with pesticide exposure. Risk assessment is a process designed to answer questions about how toxic a chemical is, what exposure results from its various uses, what is the likelihood that use will cause harm, and how to characterize that risk. Our scientists do risk assessments under the umbrella of three legislative mandates: the Toxic Air Contaminant Act of 1983 (which focuses on pesticides in air), the Birth Defect Prevention Act of 1984 (which focuses on chronic as well as developmental and reproductive effects), and the Food Safety Act of 1989 (with a dietary focus). Risk assessment is often the driving force behind new regulations and other use restrictions.

Regardless of the impetus for initiating the risk assessment, DPR sets priorities for risk assessments through a single process. Setting priorities is critical to making the best use of staffing and other resources, and to ensure that DPR focuses on chemicals with the greatest potential risk. In 2004, DPR modified its priority-setting process to make it more consistent, understandable and transparent. We posted the draft policy on our Web site for comment and discussed it at an advisory committee meeting before finalizing it in mid-year.

DPR scientists take a comprehensive approach to risk assessment, and assess potential workplace, residential, ambient air, and dietary exposures. In 2003, our scientists revised the criteria they use for evaluating the exposure of pesticides in food. This was to better take advantage of new information from the residue monitoring and food consumption databases. Furthermore, a set of criteria was established for conducting probabilistic acute dietary exposure and risk analysis.

From July 2003 to June 2004, DPR scientists completed seven risk assessments: methyl parathion, methidathion, MITC, metam sodium, hydramethylnon, azinphosmethyl, and tribufos/DEF. In addition, six risk assessments were projected for completion by the end of 2004: chlorothalonil, propargite, endosulfan, propyzamide, sulfuryl fluoride, and methamidophos. By the end of 2004, DPR scientists had completed 123 risk assessments since the Department began conducting comprehensive risk assessments in the mid 1980s.

Scheduled for completion by mid-2005 are eight risk assessments: orthophenylphenol, acephate, imidacloprid, carbofuran, indoxacarb, mancozeb, paraquat, and cyfluthrin.

Finally, five risk assessments were initiated in 2004: carbaryl, chloropicrin, fipronil, methyl iodide, and simazine.

Evaluating toxic air contaminants: The air we breathe should not pose a health risk from pesticides. DPR is committed to using all its wide-ranging authority to prevent hazardous levels of pesticides in air. An important tool is the State's Toxic Air Contaminant (TAC) Program, which sets up a mechanism for DPR to evaluate airborne pesticide residues and, in cooperation with scientific reviewers, determine potential risks. If DPR identifies a pesticide as a TAC, the Department may consider use restrictions, in consultation with air districts and others.

In 2003, DPR completed the evaluation for methyl isothiocyanate (MITC) and designated MITC and other pesticides that generate MITC as TACs. In addition, DPR also administratively listed as TACs these pesticides classified by the U.S. EPA as hazardous air pollutants: oxybisphenoxyarsine, pesticides that generate carbon disulfide, and pesticides that generate phosphine. In 2004, DPR completed a draft risk assessment for sulfuryl fluoride. DPR is revising the evaluation based on public comments and will submit the document to the Scientific Review Panel for its consideration.

Reducing air pollution

Volatile organic compounds (VOCs) and nitrogen oxides react with sunlight to create ozone, a major air pollutant. Many active ingredients as well as inert ingredients in pesticide products are VOCs.

The federal Clean Air Act requires each state to have a plan for achieving and maintaining national standards for airborne pollutants such as ozone. Working with the ARB, DPR is responsible for developing and implementing VOC reduction measures for agricultural and commercially-applied structural pesticides. The goal is to reduce pesticidal VOC emissions in a way that minimizes disruption of management of agricultural and structural pests.

In the San Joaquin Valley, one of several regions in the state that have failed to meet required reduction goals, pesticidal VOCs form a significant percentage of total emissions. The San Joaquin Valley, and possibly other nonattainment areas, will not meet the air quality standard by the specified dates, even if pesticides achieve their reduction targets. In addition, U.S. EPA established a more stringent ozone standard in 2004. These conditions will likely require additional VOC reductions from pesticides.

Working with the ARB, DPR plans several actions to improve its estimate of the pesticide contribution to ozone and reduce pesticidal VOC emissions.

- In early 2005, DPR planned to place emulsifiable concentrate products into reevaluation, requiring manufacturers to reformulate these products to reduce VOC emissions, or face cancellation of registration. New products will not be registered without submittal of VOC emission potential data.
- DPR is assisting the ARB, the U.S. Department of Agriculture, and others in researching methods to reduce VOC emissions from pesticides and obtain more accurate estimates of pesticidal VOC emissions.
- DPR is evaluating regulatory options to reduce VOC emissions from pesticides.

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Justice for all

We pledge to advance environmental justice in all our programs and activities.

Achieving environmental justice

DPR is working with the California Environmental Protection Agency (Cal/EPA) and its other boards, departments and office on a strategic planning process for environmental justice (EJ). Cal/EPA tasked us all with preparing environmental justice work plans with specific and measurable targets, with appropriate consideration of science-based approaches, cost-effectiveness, and programmatic solutions.

To discuss how DPR might better address environmental justice problems, we held informal EJ dialogue sessions in seven cities in mid-2004. The meetings were very productive, and we gained a greater understanding of where we need to focus our regulatory improvement efforts. Working from that input, we developed a community perspective on the gaps in our programs that impede achievement of environmental justice. The gaps community members identified can be grouped around five general areas: public participation, outreach, enforcement, health effects, and precaution/prevention. The analysis is a snapshot in time, but represents a starting point for discussion as we work with stakeholders to develop our EJ operational goals.

DPR also pulled back its draft EJ implementation plan, in response to community comments that it was developed with insufficient community input. We decided to begin anew, working closely with EJ groups and other stakeholders to draft an EJ strategic plan that outlines how we can better incorporate environmental justice principles into DPR programs, policies, and activities.

DPR will also be leading an air monitoring study in a rural, farming community in the Central Valley. It is one of four pilot projects being conducted under Cal/EPA's Environmental Justice Action Plan, which focuses on environmental risk factors that impact children's health. Cal/EPA and DPR solicited stakeholder input on study goals, how to determine the community to study, and which pesticides to monitor. After a community is selected in spring 2005, a local advisory group will be formed to guide DPR in conducting the study, scheduled to begin later in the year.

In 2005, DPR will also publish a community guide to pesticide regulation. Developed in cooperation with the County Agricultural Commissioners and with input from community groups and other stakeholders, the guide features easy-to-understand information about how pesticides are regulated in California, what people need to know to get help in emergencies, and how to resolve pesticide use complaints and concerns. English and Spanish versions will be distributed throughout California and posted on our Web site (www.cdpr.ca.gov).

Worker right-to-know

Protecting workers has long been a cornerstone of the pesticide regulatory program. Because of their jobs, agricultural workers are exposed to higher levels of pesticides than the average Californian. Our pioneering worker safety program was initiated in the 1970s and served as a model for the U.S. Environmental Protection Agency when it developed the national Worker Protection Standard in the 1990s. Nonetheless, we continue to evaluate and refine our program to improve protection for workers and others.

In 2003, we finished an analysis of nine years of illness data and found problems with workers being sent into fields too soon after a pesticide application. In two-thirds of these cases, workers didn't even know the fields had been treated. (A specified period must pass between pesticide application and worker entry. The interval varies with the pesticide and may be a few hours to a week or more. Depending on the interval, warning signs are required on some fields to tell workers when it is safe to re-enter.) Our evaluation indicated that application information is difficult for workers to obtain. We realized it was time to tweak the system to ensure the right information gets to the people that need it.

Our Worker Health and Safety Branch met with growers, worker advocates, and County Agricultural Commissioners to get input on changing rules on field warning signs and hazard communication requirements. (Hazard communication, often called "right-to-know," is a critical part of any worker safety program.) Working with these stakeholders, DPR developed draft rules that focus on keeping workers better informed when pesticides are used in their vicinity. Regulations to be proposed early in 2005 will require application information to be more accessible to workers. It will also require prompt communication between applicators and growers to reduce risk that workers may enter an area too soon, and we expect this to significantly reduce the likelihood of worker illness.

Improving Physician Reporting

California has what is acknowledged as the nation's best system for reporting and investigating pesticide illnesses, and we want to make it better. One key to reducing pesticide-related illnesses is making sure more illnesses are reported and investigated, so we can better know what measures to take to prevent them. A substantial number of pesticide illnesses are not reported, often because physicians are not aware of their legal requirement to report these illnesses, or do not recognize the illness they are treating to be related to pesticides. DPR is collaborating with Cal/EPA's Office of Environmental Health Hazard Assessment in a project (funded by a $750,000 federal grant) to improve the timeliness, quality, and completeness of illness reporting and follow-up investigations by:

- Training physicians to better recognize, manage, and report pesticide illnesses, and develop Web-based physician training materials.
- Enhancing reporting by including pesticide illnesses in a system already used by physicians for reporting communicable diseases, and making that system Web-based.
- Re-establishing participation of the California Poison Control System in reporting pesticide illnesses. A similar project in 2001-2002 – which resulted in increased reporting – was suspended because of State budget cuts.
- Providing Internet feedback to reporting physicians on the results of investigations into illnesses they report.
- Establishing a Web-based system for pesticide incident investigation, in cooperation with the County Agricultural Commissioners.

California-Mexico Border Program

DPR works with several state and federal agencies and Mexican authorities to foster effective enforcement of pesticide laws in the border area (a zone extending 100 miles north and south of the border).

The first major program, the Pesticide Episode Response Plan, began in 1995 in the wake of drift incidents in the Calexico/Mexicali area. It provides a framework for local, state, and federal agencies in California and Mexico to communicate and coordinate responses to pesticide emergencies.

The U.S./Mexico Pesticide Information Exchange sponsors conferences between health and regulatory officials of the Mexican and U.S. governments, and the Border States. The last conference in June 2003 focused on how to prevent illegal importation and exportation of pesticides across the border.

Many Mexican workers cross the border daily to work on farms in California border communities. In 2004, DPR helped train more than 70 trainers in two classes in Mexicali and Ensenada. These new trainers, in turn, will teach farmworkers, pesticide handlers, and their families about the risks of pesticides. More courses in this federally funded program are scheduled for 2005.

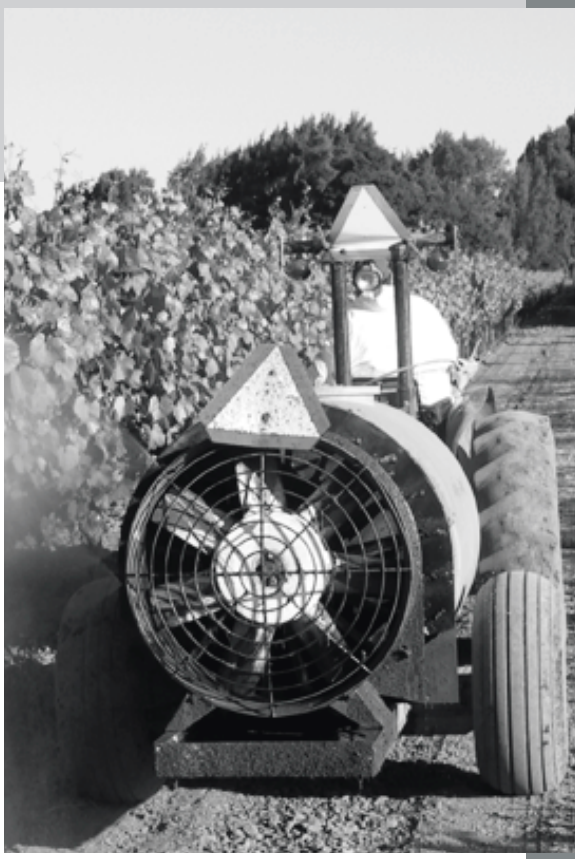
In another project, DPR and Mexican officials are exploring the feasibility of a coordinated, bi-national system for reporting pesticide illnesses. DPR's illness reporting system is considered the most comprehensive in the country. We use the data to improve protective measures and reduce illnesses in workers and others. Our technical specialists are working with their Mexican counterparts to demonstrate how California's reporting system works, and how we might coordinate the collecting and analysis of illness data.

DPR has also created a tracking system which provides information to Mexican authorities to enhance their enforcement response when illegal residues are found in fresh produce shipped from Mexico to California.

Reaching out in other languages

To be effective, pesticide safety training of field workers and pesticide handlers must be done in a language that workers understand. DPR has long produced worker safety outreach materials in Spanish. However, while the majority of workers on California farms speak English or Spanish, many speak neither language well (or at all).

DPR's worker handouts, the Pesticide Safety Information Series, are targeted at improving safety for farmworkers handling pesticides or working in fields that have been treated with pesticides. Available in English and Spanish, they must be distributed to workers as part of required safety training. However, the handouts were not easy to read or understand – in other words, they looked like they were written by bureaucrats. We redesigned and revised them to trim



unnecessary information and make sure they were to the point – how you can protect yourself from pesticide exposure, how to recognize you have been overexposed, and what to do about it. The 20 full-color handouts, published in November 2003, are available on our Web site (www.cdpr.ca.gov) and from County Agricultural Commissioners.

Working with the State Employment Development Department, the handouts are being distributed in EDD's One-Stop Career Centers in agricultural communities throughout the state. We also plan to survey workers in 2005 to ask them what type of information they want on pesticides, how it should be delivered, and what type of training is most effective.

Moving beyond English and Spanish, in 2004 we surveyed County Agricultural Commissioners to find out into which other languages the handouts should be translated. We found out there are more than 10,000 farm workers in California whose primary language is Punjabi; the Punjabi versions of the handouts will be available in 2005.

There are also hundreds of Hmong farmers and workers in the Central Valley. Pesticide Enforcement Branch, in cooperation with the Fresno County Agricultural Commissioner's office, in 2003 produced a series of training videos in English, Spanish and Hmong. The five videos are: ***The Law, Pesticides and You; Pesticide Handler Safety; Operation, Maintenance, Transportation, Storage and Disposal; Field Worker Safety***; and ***Mixing and Application***. We sent a set of videos to each of the 58 Commissioner offices in the State, and employers and other pesticide safety trainers can purchase them from DPR. (See our Web site for details.)

Another project (funded by a $50,000 federal grant) targeted the approximately 20,000 Mixtecs working on Fresno County farms (and others in neighboring counties).

Indigenous to the Mexican state of Oaxaca, Mixtecs have no written language, speak Mixteco and usually do not speak Spanish. To provide them with pesticide safety training, DPR and the Fresno County Commissioner's office developed five Mixteco training videos. The videos follow a worker and his family through a day of work.

The first segment, at the beginning of the workday, focused on employee rights, how to file complaints, and how to find out what applications may have been made to fields. The second episode addressed where and how workers might encounter pesticides in the workplace, how to tell if there was a recent application, and about field posting and the required intervals that must pass between pesticide application and entry into fields.

The third concentrated on how bodies are exposed to pesticides and typical symptoms of overexposure. Also discussed was the need to wear clean work clothing and to wash frequently.

"What to do if pesticide exposure makes you sick" was the subject of the fourth video. It explained a worker's right to see a doctor and the importance of medical treatment. In the final episode, the worker goes home, with a lesson on how to protect the family from exposure to residues on clothes. Also discussed was the importance of not taking chemicals off the farm to use at home.

Each five- to ten-minute video was aired on a Fresno television station, followed by a live panel discussion that included a physician and a biologist from the Fresno County Agricultural Commissioner's Office. They responded to call-in questions and their answers were simultaneously translated into Mixteco. First broadcast in August 2004 and rebroadcast in September, the videos are now available to county staff for training use. In early 2005, copies will also be available for purchase by pesticide safety trainers and others via DPR's Web site.

Less reliance on pesticides

We support least-toxic pest management on the farm, and in schools and neighborhoods.

Celebrating 11 years of Innovators

Since 1994, DPR has given out more than 80 IPM Innovator Awards to honor private and public organizations that emphasize pest prevention, favor least-hazardous pest control, and share their successful strategies with others. (IPM – integrated pest management – works with nature to encourage beneficial plants and animals while making it difficult for pests to survive.)

For many recipients the award comes as a long-overdue acknowledgement of work conducted with little financial reward and against many technical and logistical obstacles. It serves as notice that it pays to do the right thing, for the right reasons. As Ganna Walska Lotusland Foundation, a Santa Barbara botanical garden that won a 2001 award, said, "DPR's recognition of our determination to pursue new systems of pest control and our efforts to share our experience with others is truly gratifying."

The Sonoma County Grape Growers Association, recipient of a 2000 IPM Innovator award, appreciated how the award validated what the group had accomplished in providing growers with information and educational opportunities to promote sustainable grape production. The association added that "grower support had been tremendous." In turn, Bob Hopkins, a Russian River Valley grape grower, praised the association's work, saying that "one real accomplishment was getting growers together talking about pesticide reduction...letting people know it is doable and desirable."

At the 2004 awards ceremony, representatives of IPM Innovator Fetzer Vineyards of Mendocino County summed up the company's philosophy: "We don't do it because it's trendy or to make a political statement. We do it because we believe that it results in better-tasting wines and that it's simply the right thing to do."

Building on Alliances and Grants

Since 1995, DPR's Pest Management Grants and Alliances have helped build grassroots support of IPM, encouraging an array of experimentation and demonstration projects with one goal: identify workable, least-hazardous pest management solutions.

We have good news and bad. From 1995 to 2002, DPR awarded about $8 million for 154 grants and 44 alliances in 38 counties, with emphasis on protecting surface and ground water, finding alternatives to high-toxicity pesticides, and reducing worker exposure. In agriculture, DPR-funded projects have demonstrated IPM practices in almonds, wine grapes, walnuts, prunes, peaches, plums, citrus, and other commodities – crops that are now planted on hundreds of thousands of acres in Cali-

fornia. In the urban environment, DPR projects have helped schools, museums, and communities demonstrate model IPM programs. On the downside, the State budget crisis forced a suspension of Grant and Alliance funding in 2002. However, we will be looking at creative solutions to build on these successes in light of budget realities.

There are many success stories. A notable one – because it led directly to greater IPM adoption on a commodity-wide basis – is the Almond Pest Management Alliance, formed in 1998 with pesticide use reduction as a priority. The consortium of growers, researchers, and pest control advisors received funds from DPR for five years. The money established an industry program that continues to find pest management solutions that reduce use of problematic pesticides. Almond growers used 14.5 million pounds of pesticide in 1997 – the year before the Alliance – but 10.1 million pounds in 2002. The decline coincided with a rise in planted acres and production.

Almond growers point to diazinon as an example of the effort. Their use of the insecticide fell from 115,000 pounds in 1997 to 63,000 pounds in 2001, a 45 percent drop. Diazinon is often sprayed in the dormant season, where winter rain can cause runoff into rivers, lakes, and streams. Growers now use orchard sanitation to remove certain over-wintering pests, applications of dormant oil alone with no insecticide, or in-season applications of reduced-risk insecticides. Pheromone monitoring traps are used to track pest and beneficial insect levels. This monitoring information is used for making in-season pest management decisions. Growers also plant cover crops to attract beneficial insects and improve water infiltration in the orchard.

In 2003, U.S. EPA awarded a $40,000 grant to DPR to continue its assistance to the almond growers. One especially noteworthy product was the *Seasonal Guide to Environmentally Responsible Pest Management Practices in Almonds*. Published in October 2004, it is a colorful, easy-to-follow "cookbook" guide to a reduced-risk system of almond production.

Encouraging school IPM

Working with school districts to make IPM the preferred way to manage pests is paying off. More school district personnel are being trained in IPM and schools are finding that the least-toxic approach works well.

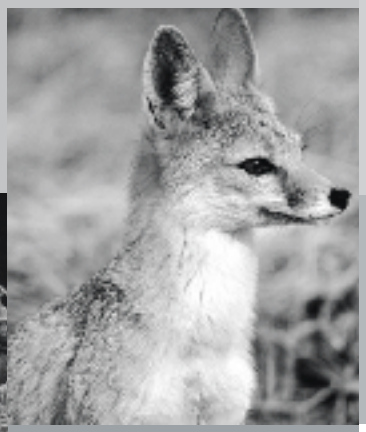
They are being helped by the revised School IPM Guidebook DPR published in 2003. In 2004, we developed and distributed pest-specific school IPM fact sheets on ants and cockroaches. (In development are handouts on yellowjackets, gophers and weeds.)

All our published school IPM information – and there is a lot if it – is posted on our dedicated Web site (www.schoolipm.info). For example, we feature new curricula on yellowjackets, burrowing rodents, landscape weeds and turf weeds we developed for the IPM training sessions we hold regularly for district staff.

In 2003 and 2004, DPR staff conducted nine regional training workshops, attended by 288 staff from 226 school districts. (There are 998 districts in California, about a third of which have requested training.) We plan to conduct four more workshops in 2005.

We will also be working with UC's Statewide IPM Program on an interactive training module for school IPM. It will supplement the workshops by providing school IPM coordinators with an additional tool to use for their localized district training efforts.

In late 2004, our school IPM program started quarterly updates to district IPM coordinators, and a biannual newsletter starts in spring of 2005. In summer of 2005, we will publish our survey of school IPM practices, comparing the results to two previous surveys.



Protecting our environment

Creative thinking and cooperative efforts help us work with nature, soften pesticide impact.

New prescription for endangered species

In January 2005, DPR rolled out a new online tool that gives pesticide users and County Agricultural Commissioners customized information to protect California's nearly 300 endangered and threatened species. The online system is dubbed "PRESCRIBE," for Pesticide Regulation Endangered Species Custom Real-time Internet Bulletin Engine.

Until PRESCRIBE went online, Agricultural Commissioners and pesticide users had to extract information from DPR's printed county endangered species bulletins. An average of 44 pages for each county (more than 2,500 pages in all), they are a good reference manual but are so detailed and comprehensive, it is difficult to figure out if an endangered species is in your specific area, and if the pesticide you want to apply is a problem for it. PRESCRIBE, on the other hand, generates a one-or two-page report that is customized to the needs of each pesticide user. That is, it covers only the locations and pesticides that are relevant to a particular user. And users don't need to know the name of the active ingredient in the product they are using – they can look up it up by any of 30,000 trade names.

PRESCRIBE's use limitations are the same as those that appear in the paper bulletins but are delivered in a highly distilled form, providing the user with only the instructions that are relevant to the locations where the pesticide will be used – and only for the pesticide that will actually be used. These custom instructions are brief enough to be attached to restricted material permits, written recommendations, sales receipts, and work orders. The ease of use and reliability of these custom reports will greatly simplify and thereby enhance regulatory compliance while saving time and distribution costs.

Protecting surface water

The federal Clean Water Act requires states to develop total maximum daily loads (TMDLs) for water bodies that do not meet water quality standards. In California, this is the responsibility of the State Water Resources Control Board and the nine Regional Water Quality Control Boards. The Boards have listed 148 water bodies (ranging from bays and large rivers to small creeks) as impaired by currently registered pesticides from both agricultural and urban sources.

DPR works cooperatively with the Regional Water Boards as they develop TMDLs for pesticides and associated plans to reduce contamination. These collaborative efforts are aimed at producing TMDL plans which harmonize DPR and Regional Board programs so that water quality goals can be met while using public resources as efficiently as possible.

Two organophosphate pesticides – chlorpyrifos and diazinon – have been especially problematic. They are detected at potentially harmful levels in water bodies throughout the state, in particular in Central Valley rivers and streams where agricultural uses are the principal source of the residues. DPR in 2003 and 2004 placed both pesticides in reevaluation. With this action, makers of the two pesticides must submit data identifying how the pesticides get into water bodies at problematic levels and develop measures to reduce or eliminate the problem.

DPR also continues to fund University of California research to quantify how vegetated buffer strips may reduce diazinon runoff into surface waters. In 2003 and 2004, we also conducted our own studies of runoff after summer irrigation and after winter rains (many tree crops are treated in the dormant season).

As DPR imposes restrictions on diazinon and chlorpyrifos, growers are turning to other dormant-season insecticides, which may in turn cause problems. DPR is working on rules to reduce problems from runoff and from drift that may be caused by any dormant spray. Regulations we plan to propose in 2005 would prohibit application of these pesticides within 100 feet of an irrigation ditch, drainage canal, or water body that drains into a river or tributary.

Protecting ground water

In 2004, advancing an environmental initiative that began nearly 20 years ago, DPR adopted new regulations that changed its approach from an after-the-fact response to pesticide finds in ground water to proactively requiring preventive practices in areas of potential contamination.

Under the former approach, once pesticides were detected in ground water, their use would be prohibited unless future contamination could be controlled. The regulatory program was based on limited mitigation measures and applied only to the one-square-mile "pesticide management zones" around contaminated wells. Those zones included about 313,000 acres statewide.

The new regulations designate about 2.4 million acres across the state where soil conditions make shallow ground water most vulnerable to pesticide contamination from leaching and runoff. The regulations prescribe actions designed to prevent pesticides from reaching ground water in these "ground water protection areas" before contamination occurs.

DPR scientists made new rules possible when they developed computer modeling that identified vulnerable areas of the state. The model was constructed using almost 20 years of well monitoring data compiled by DPR, combining it with soil data and climate information from other sources. DPR's computer modeling can relate factors – including farming practices and soil conditions – to the use of soil-applied herbicides that most often threaten ground water.

While developing the new regulations, DPR worked with industry to raise awareness of ground water concerns and prevention methods. For example, since the fall of 2001, DPR has held 81 training sessions in 28 counties as part of a "chemigation road show" to help the agricultural industry prevent ground water contamination. Chemigation is an effective way to apply pesticides and fertilizers through irrigation systems, but safeguards are needed to prevent treated irrigation water from flowing back into wells.

Taking care of business

We develop efficient and effective new solutions to fiscal challenges.

Doing our business better

The past few years have been a fiscal challenge for California government, and DPR was no exception. An unprecedented budget shortfall meant the loss of more than a quarter of DPR's workforce (from about 460 to 350 employees). Several programs were severely impacted, most notably the Alliance and Grants programs (which were suspended) and surface water and air monitoring programs (which were substantially curtailed). DPR's priority was to preserve enforcement capabilities and programs that protect workers.

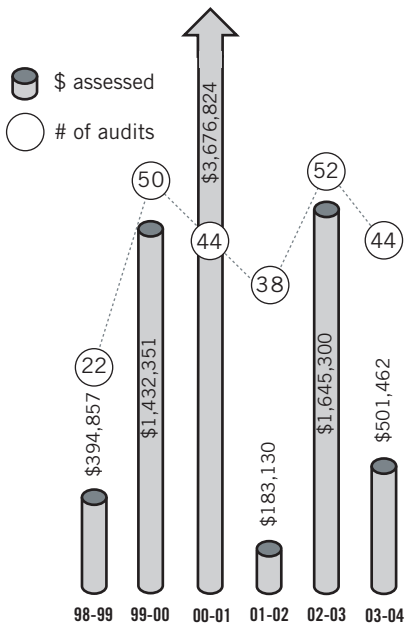
Budgetary restrictions provided additional impetus to ongoing efforts to become more efficient and effective. The pesticide registration process is one of DPR's major business functions and we have focused intensive effort on it. Our goal is to maximize the use of resources, coordinating closely with similar work done at the national level by U.S. EPA. We want to leverage our expertise on areas important to California farmers and consumers while protecting public health and safety.

To that end, DPR embarked on a "Registration Reform Initiative" in 2003, getting input from stakeholders on areas they think need improvement. An early outcome was a series of successful workshops about the registration process, in part designed to reduce delays caused by erroneous or incomplete applications. The next workshop, in 2005, will focus on how U.S. EPA and DPR can improve the process for Section 18s (selective exemptions from registration for pest emergencies) and Section 24(c)s, (registrations to address special local needs).

At the request of pesticide registrants, DPR in 2004 began accepting data evaluation reports (DERs) generated by U.S. EPA as part of the federal registration process. With DERs in hand, we will only review the underlying data on an as-needed basis. DER submittal can reduce evaluation time by DPR. However, U.S. EPA produces these formal reviews for only a portion of the products it registers.

In 2004, DPR also changed outdated policies and no longer requires submission of residue data with applications for registration (although we can still request it on an as-needed basis). To improve the tolerance-setting process, DPR is also working with U.S. EPA, Health Canada and the European Union to develop a standardized statistical method for establishing tolerances using residue data.

COLLECTING MILL FEES



Mill assessments – fees on pesticide sales – support DPR regulatory programs. Our Mill Assessment Branch checks to see that products are legally registered and mill fees are paid. Audits and assessments have trended upward in recent years. In addition, auditors and other inspectors found 326 unregistered products in 2002/03, and 463 in 2003/04, an increase largely attributable to the creation of the highly focused Mill Assessment Branch. The new branch brought together functions that had been spread throughout the Department.

In 2005, DPR plans to amend regulations to no longer routinely require efficacy data for every pesticide product. We would retain authority to do so, and we would continue to review efficacy data before registering products containing a new active ingredient, or before approving additional uses of a product against significant new pests. Staff that now conducts efficacy reviews will be able to take on other duties.

In late 2004, DPR started an email notification system that sends email to a registrant when a transaction is generated on a registration application, giving registrants better and timelier information. It will also reduce the time DPR staff now spends answering status queries from registrants, freeing staff for other duties.

One key to making the best use of our resources is the collaborative relationship we have with our counterparts at U.S. EPA. Together, we are working on assessing the risk of exposure to six fumigant pesticides and developing measures to reduce that risk.

We are also working closely on sharing the workload involved in registering pesticide products. This "worksharing" involves exchanging information and data reviews, each agency emphasizing its areas of focus and expertise. The biggest project involves development of tolerances for specialty crops – the fruit, nut and vegetable commodities for which California is known. DPR scientists conduct residue chemistry reviews for selected crops, helping U.S. EPA set tolerances and reducing the timeframe for federal registration, which in turn speeds a pesticide to the California market. In the 2002-03 federal fiscal year, DPR's workshare on residue review accounted for 16 percent of all new pesticide uses U.S. EPA completed, and 45 percent of the specialty crop uses. We are also doing dietary risk evaluations for U.S. EPA as well.

Fee restructuring and fiscal accountability

Like other integrated regulatory programs, most of DPR's functions cut across Department branch lines. This can make it difficult to assign programmatic costs to functional activities. In 2004, DPR entered a new era of organizational accountability with the inauguration of a revamped activity-based accounting system to track costs of DPR's 11 major business functions. In the future, we will link these costs with our operational plans and performance measures. The information generated will allow DPR to refine its budget and fee structure to accurately recover costs associated with its activities.

This is especially important with the Legislature's decision that, beginning in the 2004-05 fiscal year, DPR would be funded entirely by regulatory fees. (DPR funding had been a combination of regulatory fees and the General Fund.) DPR's largest revenue source is the mill assessment, a fee levied on pesticide sales, imposed at the point of first sale into California. In 2004, it was at the statutory maximum of 2.1 percent. To fully recover the costs of its registration and licensing programs, DPR increased these fees in January 2004. We held two workshops in spring 2004 to get input on how to set these fees in the future. We heard that when we adjust fees to accommodate the changing cost of the registration and licensing programs, we should give ample notice and make adjustments no more often than every three years.

DPR also consolidated mill assessment activities that had been spread among several branches into a new Mill Assessment Branch. The branch is responsible for mill assessment collection and disbursement, auditing pesticide sales records to ensure the appropriate mill fee is paid, and managing product compliance activities, including inspections, to ensure pesticide products are registered and product labeling conforms with applicable laws and regulations. In 2004, DPR launched an effort to track unregistered products and uncollected mill fees from sales of home-and-garden and other consumer products at chain stores, home centers, warehouse clubs, and similar "big box" retail outlets.

Best science guides us

Our health and safety scientists conduct pioneering studies that help improve safety for workers and the public.

For nearly three decades, our scientists have conducted unique studies, designed to increase our knowledge of how workers and others are exposed to pesticides and, in doing so, improve protective measures.

Kids play on lawns a lot, whether at home, school, or in parks. Turf is often treated with pesticides to control weeds and other pests. If residues remain on the grass, how much gets on clothing or skin? There are several methods for estimating this, but how do they relate to one another, and which is the most accurate? Knowing this is critical for assessing potential human exposure and, in turn, for developing rules to protect people – especially children – from harmful exposures.

To get answers, DPR's Worker Health and Safety Branch scientists in September 2004 went to a Yolo County sod farm to "roll in the grass." Actually, they used two types of rollers pushed across cloth-covered grass to transfer residue from turf to cloth.

DPR staff had first applied a pesticide to the turf, in both granular and liquid form, at various application rates. After covering sections of treated grass with pieces of cloth, they used two kinds of "California rollers." The test simulates human exposure to pesticide residue. The rollers are of a known weight, pushed over a known area, a specific number of times.

(DPR has long been an innovator in exposure assessment methods. The rollers are modified versions of a device originally developed by a DPR scientist in the early 1990s to measure surface residues and is now a standard industry method for this kind of residue sampling.)

The pieces of cloth were then carefully picked up and sent to the chemistry laboratory for analysis. Statistical analyses will be done to determine whether the sensitivity of the two California roller methods differs, and whether the difference is affected by formulation or application rate.

Exposure data submitted to DPR by industry uses both kinds of modified California rollers, and DPR needed a way to compare the two methods. We also needed to know how standard tests done on liquid formulations compare to results for a granular formulation of the same pesticide. Our evaluation and analysis will be completed in 2005.

DPR balance sheet

Pesticide regulatory program funding

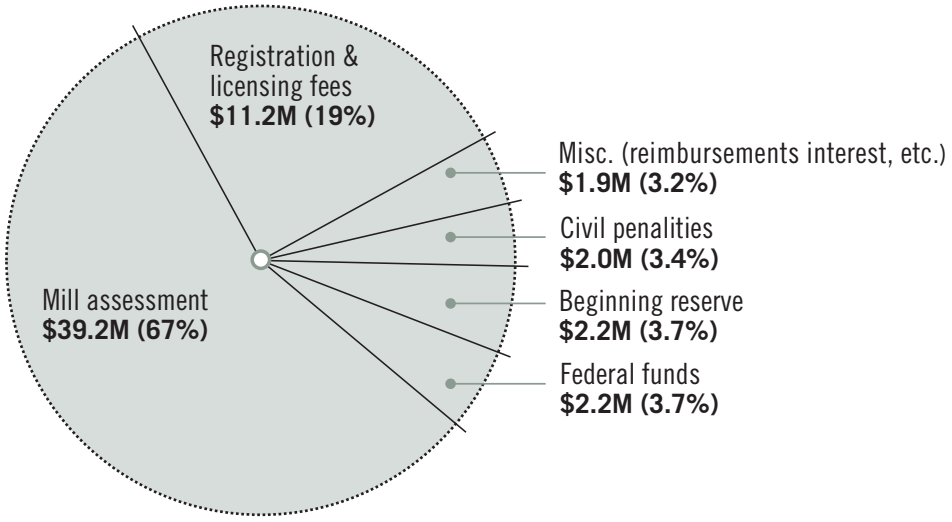
In 2004-05, the Department of Pesticide Regulation (DPR) was budgeted to expend $56.6 million and employ approximately 352 employees. Beginning in 2004-05, DPR was funded entirely by regulatory fees. (DPR funding had been a combination of regulatory fees and the General Fund.) DPR's largest revenue source is the mill assessment, a fee levied on pesticide sales. In 2004, it was at the statutory maximum of 2.1 percent. (One mill is equivalent to 1/10th of one cent.) An additional, three-fourths mill is assessed on agricultural products and dual-use products to support pesticide consultation activities of the California Department of Food and Agriculture.

Other sources of revenue are annual certificates of product registration, pesticide-related business licenses, civil penalties, miscellaneous fees, and various reimbursements. Additional funds from the U.S. Environmental Protection Agency, U.S. Food and Drug Administration, and the U.S. Department of Agriculture support DPR activities performed with or on behalf of these federal agencies.

DPR Organization and functions

A pesticide must be registered (licensed) with DPR before it can be used, possessed, or offered for sale in California. The Registration Branch coordinates the required evaluation process for registration decisions. Branch scientists share data review responsibilities with staff scientists in other branches. The Branch oversees call-ins of data, and maintains product label files and the pesticide data library.

AVAILABLE RESOURCES 2004-05



DPR requires a registrant to submit data on a product's potential health effects. The Medical Toxicology Branch reviews toxicology studies and prepares risk assessments: scientific estimates of the likelihood that an adverse health effect will result from exposure to a particular amount (dose) of a pesticide or pesticides.

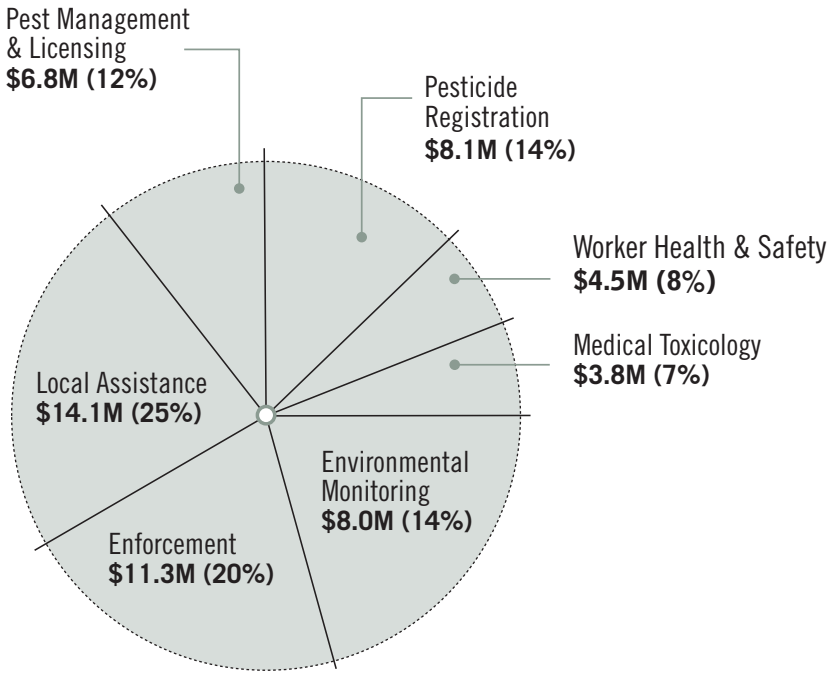
The Worker Health and Safety Branch characterizes human exposure, assesses safety, designs and conducts field studies to better evaluate exposure to pesticides, and develops risk reduction mechanisms when needed. Branch scientists analyze county investigations of pesticide-related illnesses and investigate unsafe conditions in workplaces where pesticides are used.

The Enforcement Branch enforces pesticide laws and regulations, administers the nation's largest state produce residue monitoring program, does outreach, and conducts compliance assessment and assistance activities. Field use enforcement activities are largely carried out by county agricultural commissioners and their staffs (more than 350 biologists). Enforcement Branch staff provide training, coordination, supervision, and technical support. (DPR supports local activities with specified funds, including the revenue from 7.6 mills from the DPR Fund. See Local Assistance in the pie chart below.)

The Environmental Monitoring Branch monitors the environment to determine the fate of pesticides, protecting the public and the environment from pesticide contamination through analyzing hazards and developing pollution prevention strategies.

The Pest Management and Licensing Branch evaluates pesticide and pest management problems and provides information to develop new strategies that reduce adverse environmental impacts and hazards from pesticide use; oversees licensing and certification of dealers, pesticide brokers, agricultural pest control advisers, pest control businesses, and applicators; manages the Endangered Species Program, which includes mitigation development and outreach; and collects, reviews, analyzes and publishes pesticide use reporting data.

BUDGETED EXPENDITURES 2004-05



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Page 6 (right), Monterey County Agricultural Commissioner's Office

Page 7, Angelica Welsh, DPR

Page 9, John Cooledge, Napa County Agricultural Commissioner's Office

Page 12 (right), U.S. Fish and Wildlife Service

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January 2005

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