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MONITORING WILDLIFE DAMAGE MANAGEMENT PESTICIDES, THE ROLE OF THE CALIFORNIA DEPARTMENT OF FISH AND GAME

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ABSTRACT: The Pesticide Investigations Unit (PIU) of the California Department of Fish and Game is responsible for identifying and mitigating the hazards of pesticides to fish and wildlife. By conducting annual reviews of individual county vertebrate pest control plans, investigating pesticide related fish and wildlife losses and reviewing all pesticides proposed for registration in California, the PIU monitors potential effects of vertebrate toxicants on fish and wildlife. The California Department of Fish and Game is working in conjunction with other state and local agencies, manufacturers and applicators to develop balanced, safe pest control programs which provide maximum protection to California's fish and wildlife.

Proc. 16th Vertebr. Pest Conf. (W.S. Halverson & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. 1994.

The Pesticide Investigations Unit (PIU) of the California Department of Fish and Game (CDFG) which was established in 1964 is responsible for identifying and mitigating the hazards of pesticides to fish and wildlife. One method of protecting fish and wildlife is the monitoring of vertebrate pest control activities throughout the state, particularly the use of vertebrate toxicants. The CDFG employs a three-prong approach to monitoring the effects of vertebrate toxicants: 1) a memorandum of understanding (MOU) with the County Agricultural Commissioners and Sealers Association (CACSA) requires the annual review of county vertebrate pest control plans; 2) all fish and wildlife losses in the state which may be due to pesticide poisoning are investigated, and 3) all registrations of pesticides are reviewed through our membership on the California Department of Pesticide Regulation's Pesticide Registration and Evaluation Committee (PREC).

County Vertebrate Pest Control Plans

The PIU annually reviews proposed individual county vertebrate pest control programs. PIU staff evaluate potential threats to threatened or endangered species which may result from the use of each of the toxicants listed on the control plan. Following this evaluation, each county receives a listing of threatened or endangered species present in the county which could be at risk due to the use of a particular toxicant. Suggestions are also provided to minimize any potential non-target exposure to the toxicants. These suggestions range from recommended use of exclusion devices to a moratorium on the use of a particular toxicant in a specific type of habitat.

In a joint effort with the California Department of Pesticide Regulation (DPR), the PIU is proposing to issue a series of information leaflets to the county agricultural commissioners. Each leaflet would contain information on a specific threatened or endangered species, complete with a generalized locality map (Figure 1 and Figure 2) providing information on occurrences within each county.

Monitoring for Losses

The CDFG investigates fish and wildlife losses in California which appear to be caused by pesticide

poisoning. In the past, the PIU has primarily relied on incident monitoring, receiving reports of fish and wildlife losses from private citizens or field staff of DFG and other state or county agencies. Upon receipt of any samples and/or carcasses, PIU staff determine if pesticides were involved and the mechanism by which the exposure took place. If the loss was due to a spill or an illegal use of a pesticide, the CDFG usually pursues assessment of civil and/or criminal penalties. Once a determination of the cause of a loss has been made, the data is recorded in a master incident file. If the loss resulted from a legal use, the PIU can make recommendations on use changes to the agricultural commissioner or DPR in an effort to prevent the loss from reoccurring. In serious cases of repeated or ongoing fish and wildlife losses, the PIU can request that a specific registered use of a pesticide be formally reevaluated.

The PIU is beginning to establish systematic monitoring programs for various pesticides of concern because of the increased reliance on incident monitoring data by the U.S. Environmental Protection Agency. Carcass surveys are conducted over a period of time following a pesticide application in systematic monitoring. For a material such as zinc phosphide, carcass surveys would continue as long as the treated grain is left on the field. All animal carcasses, both target and non-target, are examined for evidence of exposure to the pesticide, and for the presence of potentially lethal residues. The effectiveness of incident monitoring data can be evaluated by comparison with systematic monitoring data.

Review of Materials Proposed for Registration

The PIU acts as the CDFG representative on the DPR Pesticide Registration and Evaluation Committee. PIU is notified of all materials submitted for registration in California. This includes proposed new uses and label changes for pesticides already registered. PIU staff review these materials and evaluate supporting data in cases where it appears that a potential exists for adverse impacts to fish and wildlife. The PIU may request modifications to the label directions which would lessen the risk to fish and wildlife if the data suggests that a potential for significant adverse impacts to fish and

wildlife exists. In extreme cases where it does not appear that mitigation measures can be effective, the PIU may recommend to DPR that the material not be registered.

The CDFG works closely with other state and local agencies, manufacturers and applicators to develop a

balanced, safe program which provides maximum protection to fish and wildlife while recognizing the importance of vertebrate pest control for agricultural and human health concerns.

California Tiger Salamander
Ambystoma californiense

The California Tiger Salamander (CTS) is a nonaggressive, black salamander with pale, yellow spots. They have a broad, flat head and a rounded nose. The adult CTS can grow up to three to six inches long. The general habitat of the CTS is characterized by hot, dry summers and cool, rainy winters. In the summer months, they will aestivate underground in burrows made by California ground squirrels. This period of aestivation lasts until late autumn (November through January) when they emerge to live above ground. The CTS can mostly be found around temporary rain pools (vernal Pools) in low hills, valleys and grassy areas. They will feed on invertebrates such as beetles, crickets, roaches, grasshoppers and sometimes small fish such as the mosquito fish (*Gambusia affinis*). These salamanders can be found in parts of the central valley and extending to the coastal regions. Urbanization, road development, and housing construction have greatly reduced CTS habitat. Liaison should be maintained with county planners and private land owners to protect potential habitat.

Status: a species of concern



Figure 1. Information Leaflet (front).

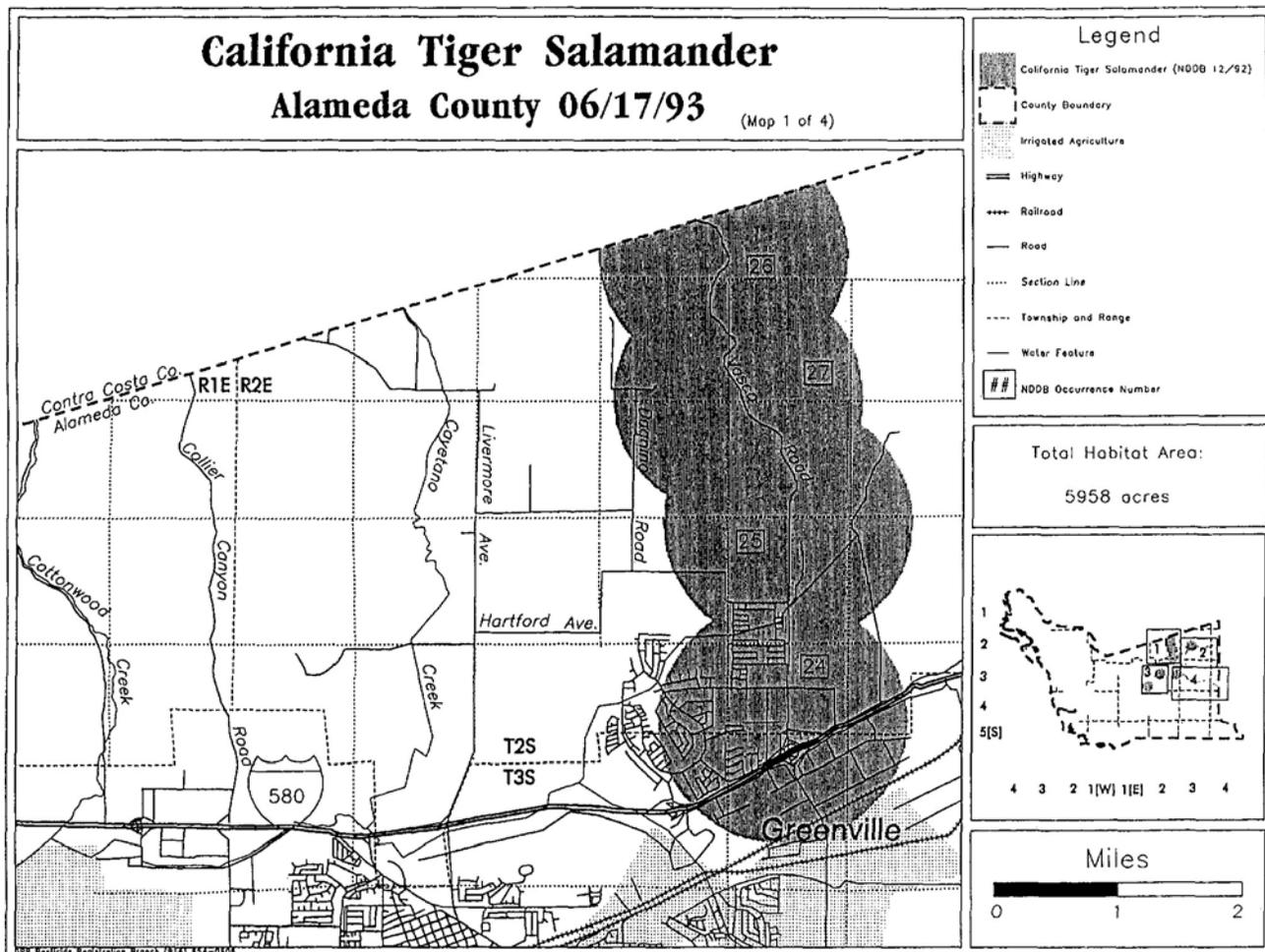


Figure 2. Information Leaflet (back).