



### **Science Team Contacts** (Cite report as “Gabriel et al. 2013, unpublished data”)

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## **Intentional Poisoning of a Fisher (*Martes pennanti*) with a Carbamate Insecticide Laced Bait at an Illegal Marijuana Trespass Cultivation Site**

### **Executive Summary**

A male fisher was found dead in an illegal marijuana cultivation site on public lands on July 31, 2013. The fisher was part of a population that has been monitored since 2005 and warranted for listing under the Endangered Species Act. The cultivation site had several pesticides present as well as hot dogs strung on large fishing treble hooks and line. Necropsy and toxicology screening determined that the fisher died of acute carbamate insecticide (methomyl) poisoning associated with contaminated bait. The fisher was also exposed to a 2<sup>nd</sup> generation anticoagulant rodenticide. This is the first confirmed intentional poisoning of a fisher with a carbamate insecticide associated with a marijuana cultivation site.

### **Background**

A young adult male fisher (*Martes pennanti*) aged 1.5 to 2.5 years old was found at a trespass marijuana cultivation site on the morning of July 31<sup>st</sup>, 2013 on public lands adjacent to tribal lands in Humboldt County, California U.S.A.. Law enforcement officials discovered the fisher approximately 10 meters from the edge of a marijuana cultivation site (Figure 1). The site had soluble fertilizer, restricted use insecticides, and other pesticides present. In addition, large fishing treble hooks attached to high strength line were strung from several trees surrounding the perimeter of the cultivation site (Figure 2). On each treble hook, hot dogs were attached and available for consumption. The fisher was transferred to researchers who have been monitoring fishers within the vicinity since 2005 and investigating the impacts of trespass cultivation sites in California [1]. This fisher was suspected to be killed by toxicants associated with marijuana cultivation as seen in other California fishers [2,3].

A full necropsy was performed on Monday, August 5<sup>th</sup>, 2013, by a board-certified veterinary pathologist specializing in wildlife at the California Animal Health and Food Safety Laboratory (CAHFS) at the University of California, Davis. A panel of ancillary testing including histology and molecular investigations complemented gross necropsy findings. A panel of toxicological testing was conducted under the direction of a board-certified veterinary toxicologist also at CAHFS. These toxicology tests included screening for organophosphorus insecticides, carbamate insecticides, and anticoagulant rodenticides.

### **Results**

Necropsy results confirmed that this male fisher died of acute toxicosis due to carbamate insecticide poisoning, specifically methomyl. The stomach and esophageal contents had amorphous material with

minute fragments of bone, protein and cartilage, closely resembling commercially processed meat product, such as hotdogs. Methomyl was positively identified in both stomach and esophageal contents. Undigested amorphous material resembling hot dog present in the esophagus suggests that an acute death occurred before the contents could enter the stomach. The fisher also tested positive for brodifacoum, a 2<sup>nd</sup> generation anticoagulant rodenticide, but this was not clinically significant. The fisher also had large amounts of saliva throughout its muzzle area suggesting excessive salivation, a common result of convulsions, muscle tremors and respiratory distress associated with carbamate insecticide toxicoses (Figure 3) [4,5].

### **Methomyl**

Methomyl is a classified Restricted Use Pesticide (RUP) and is highly acutely toxic with the United States Environmental Protection Agency ranking it as 1 of 4 (highest ranking)[6,7].

**Figure 1:**



**Figure 2:**



**Figure 3:**



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