Risks of Maneb Use to Federally Threatened California Tiger Salamander (*Ambystoma californiense*), Central California Distinct Population Segment and Federally Endangered California Tiger Salamander, Sonoma County and Santa Barbara County Distinct Population Segments

Pesticide Effects Determinations

PC Codes: 014505
CAS Numbers: 12427-38-2

Environmental Fate and Effects Division
Office of Pesticide Programs
United States Environmental Protection Agency
Washington, D.C. 20460

22 June 2011

Primary Authors:
Mohammed Ruhman, Ph.D., Agronomist
Valerie Woodard, Ph.D., Biologist
Justin Housenger, Biologist

Secondary Review:
Keith Sappington, Senior Biologist/Science Advisor
José L. Meléndez, Chemist

Branch Chief, Environmental Risk Branch V
Mah T. Shamim, Ph.D.

Assessment Purpose and Scope

The purpose of this assessment is to evaluate potential direct and indirect effects of maneb (PC code: 014505) and the principle degradate ethylenethiourea (ETU) (PC code: 600016) on the California tiger salamander (*Ambystoma californiense)* (referred to hereafter as CTS) in its terrestrial and aquatic habitats arising from FIFRA regulatory actions regarding use of maneb. In addition, this assessment evaluates whether these actions can be expected to result in modification of designated critical habitat for CTS. This assessment was completed in accordance with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) *Endangered Species Consultation Handbook* (USFWS/NMFS, 1998), procedures outlined in the Agency's Overview Document (USEPA, 2004), and consistent with a stipulated injunction ordered by the Federal District Court for the Northern District of California in the case *Center for Biological Diversity (CBD) vs. EPA et al*. (Case No. 07-2794-JCS).

There are currently three CTS Distinct Population Segments (DPSs): the Sonoma County (SC) DPS, the Santa Barbara (SB) DPS, and the Central California (CC) DPS. Each DPS is considered separately in this risk assessment as they occupy different geographic areas. The CTS-SB and CTS-SC were downlisted from endangered to threatened in 2004 by the USFWS; however, the downlisting was vacated by the U.S. District Court. Therefore, the SC and SB DPSs are currently listed as endangered while the CC DPS is listed as threatened. The CTS utilizes vernal pools, semi-permanent ponds, and permanent ponds, and the terrestrial environment in California. The aquatic environment is essential for breeding and reproduction and mammal burrows are also important habitat for aestivation.

Maneb is a member of the ethylene-bis-dithio-carbamate group of fungicides (EBDCs). It is a non-systemic preventive fungicide. Maneb, along with other EBDCs, produce a common degradate ethylenethiourea (ETU), classified as a probable human carcinogen. ETU is a human health concern and a focus of regulatory decisions concerning use of the EBDCs. Because ETU is a common degradate for all EBDCs, a maximum seasonal or yearly rate was set by EPA for EBDC pesticides application.

As discussed below, maneb is currently undergoing the process of voluntary cancellation. Although all maneb uses have been cancelled, existing maneb stocks are expected to be depleted by December 31, 2012. Therefore, this document provides an abbreviated risk assessment of potential direct and indirect effects and potential habitat modification on the CTS (all three DPSs) arising from FIFRA regulatory actions regarding all registered uses of maneb (PC code: 014505). A standard (detailed) risk assessment was not considered necessary because implementation of any foreseeable regulatory action as a result of this pesticide effects determination would almost certainly extend beyond the last date for maneb uses (Dec. 31, 2012).

Regulatory Status of Maneb

Since the last assessment was completed, the U.S. Environmental Protection Agency (EPA) received requests from the registrants to voluntarily cancel all registered uses of maneb. In 2008, the EPA received a request from one of the registrants, United Phosphorous, Inc, a maneb registrant, for voluntary cancelation of all maneb technical and manufacturing use products as well as all end-use pesticides containing maneb. A Notice of Receipt for voluntary cancelation request was published September 12, 2008, by EPA, in the Federal Register (73 FR 53007) (FRL-8380-7). The cancelation order to be effective August 26, 2009 for all United Phosphorous Inc. products was announced in the federal register (74 FR 43124) (FRL-8429-6), effective August 26, 2009. The federal notice allows persons other than the registrants to use existing stocks until exhausted.

Following a January 6, 2010 Notice of Receipt (75 FR 860) (FRL-8806-3), a cancelation order for technical grade maneb registered by Drexel Chemical Company was published in the Federal Register on February 24, 2010 (75 FR 8340) (FRL-8813-9). According to this cancelation order, technical maneb could be sold or distributed until February 26, 2010 under the order. Terms of this cancelation order also allowed registrants to formulate end-use products containing maneb until March 10, 2010. The federal notice allows persons other than the registrants to use end-use products/existing stocks until exhausted.

Another Federal Register notice published the receipt of a cancelation request for the last maneb registrations by Drexel Chemical Company on January 6, 2010 (75 FR 869) (FRL-8806-2). A notice to cancel technical grade maneb products was published in the Federal Register on February 26, 2010 (75 FR 8942) (FRL-8813-6), effective February 26, 2010. According to this cancelation order, maneb products could be sold or distributed until February 26, 2010 under the order. The federal notice allows persons other than the registrants to use existing stocks of maneb products until exhausted.

The Agency published notice of a request to cancel the maneb product registration for DuPont Crop Protection on March 4, 2010 (75 FR 9896) (FRL-8813-5). EPA approved cancelation of the last maneb product for use in the United States effective April 16, 2010 (75 FR 19967) (FRL-8822-2). According to this cancelation order, the maneb product could be sold or distributed until supplies are exhausted. The federal notice allows persons other than the registrants to use end-use products/existing stocks until exhausted.

Although all maneb uses have been cancelled, EPA anticipates that all stocks will be depleted by December 31, 2012 based on information indicating a negligible supply of existing maneb stocks in 2009 and 2010 (personal communication, Christina Scheltema, June 7, 2011).

In addition to the pesticide cancellations, EPA is proposing to revoke all residues of maneb tolerances for food uses no longer registered under FIFRA. EPA's proposed revocation of all maneb tolerances in the Federal Register on May 26, 2010 (75 FR 29475), is to be effective on the date of the final maneb tolerance rule. EPA is currently planning to publish a final tolerance rule for maneb in 2011 listing an expiration date of

December 31, 2012 for all maneb tolerances. The tolerance expiration date will essentially be the final use date for maneb on food or feed commodities.

Maneb Use Characterization

The use characterization of maneb is based on the most recent maneb ecological risk assessment conducted by EFED for the federally listed California red-legged frog (CRLF), *Rana aurora draytonii* (USEPA, 2007). Based on that assessment, the following maneb uses in California are considered for the CTS: almonds, apples, beans (dried), brassica, Brussels sprouts, "loose head" Chinese cabbage, corn (sweet and pop), cucurbits (cucumber, cantaloupe, honeydew, casaba melon, crenshaw melon, watermelon, winter squash, and pumpkin), eggplant, endive (escarole), fig, garlic (dried), grapes, kale, lettuce (leaf and head), onion (dried and green), ornamentals (nursery includes shade trees, ground cover plants, herbaceous plants, non-flowering plants and woody shrubs and vines, pachysandra, residential turf), papayas, pepper, potatoes, sod farms, sugar beets, tomatoes and turf (commercial/industrial/recreational area, golf courses, ornamental, sod farm) (Table 1). Seed and dip treatments include barley, corn, cotton, oats, rice, rye, safflower, sorghum, tomatoes and wheat (Table 2).

Maneb applications for peanuts, cranberry, tobacco, banana, pineapple, plantains and flax use patterns were excluded from this assessment because, peanuts and cranberries are grown in very limited acreage in California and the other crops are not grown in California.

The CRLF assessment relied on the application rates and management practices allowed on maneb labels in 2007 for its effects determinations relative to the CRLF, but also explored several risk mitigation measures that were being implemented at the time of the assessment.

Table 1 Maneb use patterns in California (*MSR*= maximum single rate (lb a.i./acre), *MNA*= maximum number of applications, *MTR*= maximum total rate (lb a.i./acre/crop cycle or year), and *MAI*= minimum re-application intervals in days).

Crop Use Pattern	***MSR***	***MNA***	***MTR*[1]**	***MAI***
Almonds	6.4	4	25.6	7
Apples	4.8	4	19.2	7
Beans (dried)	1.6	6	9.6	5
Brassica [2]	1.6	6	9.6	7
Brussels sprouts	1.6	6	9.6	7
Corn (sweet/pop)	1.2	5	6	3
Chinese Cabbage "loose head"	1.2	6	7.2	7
Cucurbits [3]	1.6	8	12.8	7
Eggplant	1.6	7	11.2	7
Figs	One application of 2.4 lb a.i/acre/season			
Garlic & Onion: dried	2.4	10	24	7
Grapes	2	3	6	7
Kale	1.6	2	3.2	7
Lettuce (leaf & head) and Endive (Escarole)	1.6	6	9.6	7
Onion: green	2.4	7	16.8	7
Ornamentals (pachysandra)	13.9	4	55.7	10
Ornamentals (others) [4]	1.2	3	3.6	7
Papayas	2	14	28	14
Pepper	1.6	6	9.6	7
Potatoes	1.6	7	11.2	5
Sugar Beet	1.6	7	11.2	7
Tomatoes	1.6	4	6.4	7
Turf [5]	17.4	4	69.7	7

[1] MTR= maximum total rate in lb a.i./acre/year is for apples only otherwise this rate is in lb a.i./acre/crop cycle.

[2] Brassica: broccoli, Brussels sprouts, cabbage, Chinese cabbage (tight head), cauliflower, and kohlrabi.

[3] Cucurbits: cucumber, cantaloupe, honeydew, casaba melon, crenshaw melon, watermelon, winter squash, and pumpkin.

[4] Ornamentals (others) include: shade trees, ground cover plants, herbaceous plants, non-flowering plants & woody shrubs and vines.

[5] Turf includes: commercial/industrial/recreational area lawns, golf course turf, ornamental sod farm turf, and ornamental lawns & turf (residential).

Table 2 Additional maneb use patterns in California: dip and pre-plant seed treatments (maximum application rate; all are single rates).

I. Dip Treatment (as specified below): Rates in lbs/Acre

Use Pattern	*Rate (lb a.i./Acre)*
Potatoes: pre-plant seed/seed pieces dip tank @ 0.08 cwt [1]	**2.72** (seedling rate of 3,400 lbs/Acre)[2]

II. Pre-plant Seed Treatment (Mist, Slurry and Planter/Drill boxes)

Use Pattern	***Application Rate (cwt [1])***	***Seeding Rate (lb/Acre)***	***Application Rate (lb a.i./Acre)***
Barley[3]	0.2094	100	0.2094
Corn[4]	0.2688	18.3	0.0492
Cotton[4]	0.3	10	0.0300
Oats[6]	0.3125	100	0.3125
Rice[4]	0.20	150	0.3000
Rye[5]	0.1781	90	0.1603
Safflower[5]	0.1	25	0.0250
Sorghum[5]	0.225	12	0.0270
Tomatoes[7]	0.4	0.5	0.0020
Wheat[4]	0.1625	89	0.1446

[1] cwt= hundred weight (i.e., lbs/100 lbs of seeds).
[2] Potatoes: http://gardenguide.montana.edu/additional%20info%20pages/Vegetable%20Charts.htm
http://www.hort.purdue.edu/newcrop/duke_energy/Avena_sativa.html#Cultivation
3 Barley: http://www.ag.ndsu.edu/procrop/bar/baseed04.htm
[4] Corn, cotton, rice and wheat: http://www.hort.purdue.edu/newcrop/duke_energy/
[5] Rye, safflower sorghum: http://www.hort.purdue.edu/newcrop/afcm/flax.html
[6] Oats: http://extension.oregonstate.edu/catalog/html/em/em8692/
[7] Tomatoes: http://aggie-horticulture.tamu.edu/extension/vegetable/cropguides/tomato.html

Table 3 Risk mitigation measures included in the maneb RED

Use Pattern	***RED Risk Mitigation Measure***
Maneb Use Patterns	
Sweet corn, grapes, apples, and kadota figs	Use cancellation
Rice and peanuts	Seed treatment use cancellation
Almonds	Reduce the maximum rate to 19.2 lb a.i./A/year (from 25.6 lb a.i./A/year) with no change in the single rate of 6.4 lb a.i./A (three applications)
Turf: sod farm	Reduce single rate to 8.7 lb a.i./A with a maximum of 4 applications or 34.8 lb a.i./A/year (from 69.6 lb a.i./year)
Oats seed treatment	Reduce this single application rate to 0.21/cwt (0.21 lb a.i./A)

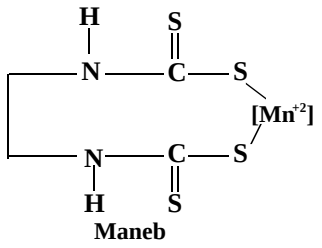
Maneb labeled use data can be summarized into three types of applications: 1) foliar, 2) dip and 3) seed treatments. Equipment that can be used include: aerial equipment,

ground-boom, chemigation, high- and low-pressure handheld equipment, and backpack sprayers.

Environmental Fate Characterization

The chemical identity and abiotic fate characteristics for maneb is summarized in **Table 4**.

Table 4 Chemical identity and laboratory measured physicochemical and abiotic fate properties for maneb.

Parameters	***Maneb***
CAS name	[[1,2-Ethanediylbis [carbamodithioato]] - (2-)] manganese
CAS registry number	12427-38-2
PC code	014505
Molecular weight	265
Vapor pressure (torr)	7.577×10^{-8}
Water solubility*	150 ppm
Chemical structure	 **Maneb**
Hydrolysis	t ½ at pH 7= <0.1 day (3 hours)
Aqueous & soil photolysis	Stable

* Note that when maneb is dissolved in water up to 150 ppm of the polymeric maneb completely hydrolyze into the EBDC complex.

Based on laboratory fate studies, the complete polymeric chains of parent maneb (the active ingredient "a.i." in maneb) are expected to be non-persistent in most natural environments (hydrolysis t ½= <1 day). Hydrolytic decomposition appears to be a complex process as it involves breakdown of the polymers into an EBDC complex consisting of variable/low molecular weight polymeric chains (i.e. polymer fragments), monomeric species, transient species, and EBDC ligand in association with metal ions other than Mn^{+2}. Aging of the complex results in enrichment with ETU and ETU degradates. The rate of hydrolytic degradation appears to increase with particle size reduction of the applied parent, availability of moisture, oxygen, and high acidic and neutral conditions. The product of hydrolytic decomposition of maneb is a multi-chemical species complex hereinafter referred to as the "maneb complex" or the "EBDC complex".

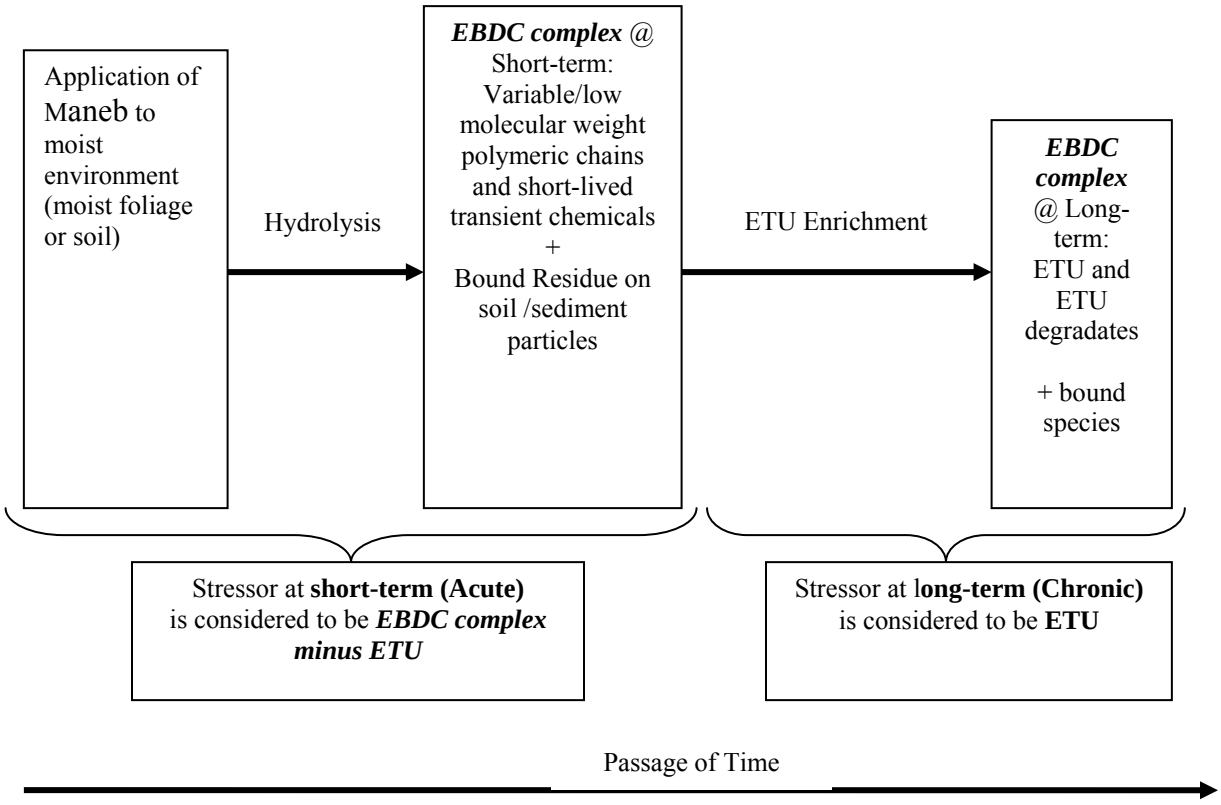
Furthermore, the environmental fate properties of maneb indicates that spray drift and run-off represent potential transport mechanisms of parent (by drift) and resultant EBDC complex (by run-off) into the aquatic and terrestrial habitats of the CTS. In this assessment, transport of parent maneb from initial application sites through spray drift and runoff are considered in deriving quantitative estimates of exposure to the CTS, its prey and its habitats

In an agricultural setting, maneb parent is expected to be applied under moist conditions (rain and/or irrigation-fed growing plants). Under such conditions, the parent reaching the soil system is expected to be short lived due to its hydrolytic instability (hydrolysis half-life in hours).

Environmental exposure will result from chemical species produced by hydrolysis of maneb, which is termed the "maneb complex". The term maneb complex is used to refer to a complex of multi-chemicals that result from hydrolysis of maneb. This maneb complex forms from maneb and based on fate studies and media of formation, the suite of chemicals includes the following two categories: (1) chemicals associated with the short-term acute exposure potential which include variable/low molecular weight polymeric chains and short-lived transient chemicals; and (2) chemicals associated with the long-term chronic exposure potential which include ETU and ETU degradates. In the presence of soil or sediment particles part of the chemical species partitions into the solid phase and are referred to as bound species.

A total toxic residues approach was implemented to estimate the maneb complex acute and chronic exposure that can be closely related to submitted measures of acute and chronic effects from available toxicity data. The process is detailed in the CRLF assessment (USEPA, 2007). The process is based on estimations of acute and chronic exposure to the chemicals present in the maneb complex in the short-term for the potential acute exposure and for chemicals present in the maneb complex in the long-term for the potential chronic exposure (**Figure 1).**

Figure 1. A flow diagram for degradation of maneb showing the multiple and temporally separated degradation products that constitutes the total toxic residue, the stressor of concern.



Ecological Effects Characterization

The ecological effects assessment for maneb is identical to that described for the CRLF effects determination (USEPA, 2007). Toxicity data are available for fish, aquatic invertebrates and aquatic nonvascular plants. A Rainbow trout (*oncorhynchus mykiss*) toxicity study resulted in a 96h LC_{50}=42 µg/L (MRID 4076001). A daphnid (*Daphnia magna*) toxicity study resulted in a 48 h EC_{50}=120 µg/L (MRID 40749402). A green algae (*Pseudokirchneriella subcapitata*) toxicity study resulted in a120 h EC50=13.4 µg/L (MRID 43664701). Although categories for aquatic plants have not been defined, maneb is classified as very highly toxic to fish and very toxic to aquatic invertebrates on an acute exposure basis.

Toxicity data are also available for birds, mammals and terrestrial invertebrates, An acute oral toxicity study using the Northern bobwhite quail (*Colinus virginianus*) resulted in a 14 day LD_{50}=2,150 mga.i./kg (MRID 0657001). A dietary toxicity study using the mallard duck (*Anas platyrhynchos*) resulted in an 8 day LC_{50}>5,000 ppm (MRID 40657002). A chronic toxicity study using the mallard duck *Anas platyrhynchos*) resulted in a reproductive 18 week NOAEC=20ppm (MRID 435650). A toxicity study using the rat (*Rattus norvegicus*) resulted in a 96 hLC50>5,000 mg/kg (MRID 41975601). A chronic toxicity study using the rat (*Rattus norvegicus)* resulted in a 90 day NOAEC=75 ppm (MRID 42049401). A terrestrial invertebrate toxicity study using the honey bee (*Apis mellifra*) resulted in an LD50>12.09 ppm. No terrestrial plant toxicity studies were submitted for the CRLF assessment. Although categories for terrestrial plants have not been defined, maneb is classified as practically non-toxic to birds and mammals on an acute exposure basis.

CTS Effects Determination

Given that all registered uses of maneb will be terminated as of December 31, 2012, only an abbreviated environmental fate and ecological risk assessment was conducted to support the CTS effects determination of currently registered uses of maneb. This assessment considers those registered uses of maneb for which supplies of the formulated products are allowed to be used until they are exhausted, which EPA anticipates to be December 31, 2012. It relies on the most recent ecological risk assessment published for maneb which was conducted on the federally-listed California red-legged frog (CRLF) (*Rana aurora draytonii*) (USEPA, 2007).

The same effects determination made for the CRLF applies to the CTS. Therefore, this assessment concludes that the uses of existing stocks of maneb are LAA for direct and indirect effects to the CTS. Also, the uses of existing stocks of maneb could potentially result in habitat modification of the designated critical habitat of the CTS.

The CRLF is an adequate surrogate for the CTS as the same uses are evaluated and both species are found in California. The EECS should be the same based on the same California use patterns. Due to the overlapping life histories, the aquatic-phase and terrestrial–phase RQs for the CRLF are relevant to the CTS.

In the CRLF assessment, RQs exceeded the Agency's Level of Concern (LOC) for fish (acute RQ range = 0.01-2.64), aquatic invertebrates (acute RQ range <0.01-0.93), aquatic nonvascular plants (RQ range = 0.35-8.29), birds (chronic RQ range = 4.86-396.68) mammals (chronic RQ range = 0.42-637.73) and terrestrial invertebrates (Acute RQ range 0.46-37.62).

In the CRLF assessment, no RQs for maneb were calculated for seed or dip treatment uses. EPA assumes a low exposure to terrestrial species based on fate and transport characteristics for seed and dip treatments. In addition, maneb toxicity to birds on an acute oral exposure basis (Bobwhite quail LD_{50} > 2,150 mg/kg) is practically nontoxic to birds. As is the case with terrestrial risk, potential aquatic risks are considered minimal based on negligible aquatic exposure resulting from seed treatment.

For the CRLF, the effects determination was may affect and likely to adversely affect (LAA) based on uses of maneb (excluding seed and dip treatment uses). The assessment also concluded that uses of maneb (excluding seed or dip treatments) would potentially result in modification of the designated critical habitat of the CRLF. The LAA determination was based on direct effects using the fish as a surrogate for the aquatic-phase CRLF and direct effects using the bird as a surrogate for the terrestrial-phase CRLF. The LAA determination was also based on indirect effects via potential adverse effects on prey organisms (i.e**.,** aquatic invertebrates and aquatic plants) as well as habitat modification based on effects to aquatic plants. For terrestrial prey, the potential for indirect effects to the CRLF was identified based on risks to birds as surrogates for amphibians, mammals and terrestrial invertebrates. Furthermore, the potential for indirect effects on the CRLF was identified via habitat modification effects due to the absence of data for terrestrial plants for ETU and for a reduction in mammal burrows used for shelter. There was a "No Effect" determination for all seed treatment and dip uses.

No Effect (NE) and No Habitat Modification are determined for the CTS following December 31, 2012. This is due to the fact that notices indicating that all maneb registered uses are cancelled (74 FR 43124, 75 FR 8340 and 75 FR 19967). The EPA assumes that all use stocks will be depleted by December 31, 2012 based on information indicating a negligible supply of maneb stocks existing for uses in 2009 and 2010.

EPA is proposing to revoke all tolerance for residues of the fungicide maneb because the Agency has approved registrants' requests to voluntarily cancel all registered food/feed uses in the United States (75 FR 29475). It is EPA's general practice to propose revocation of those tolerances for residues of pesticide active ingredients on crop uses for which there are no active registrations under FIFRA. In addition a notice will be published in 2011 indicating the tolerance will be revoked for maneb use in the United States effective December 21, 2012 (i.e., maneb residues on feed/food uses will no longer be allowed on and after that date).

To explore the potential for overlap of potential maneb use sites with the CTS' range and critical habitat, a map was created using California Gap Analysis Program (GAP) data

layers for all use patterns that represent potential use sites along with layers that represents species and critical habitat locations (**Figure 2**). This map indicates that there is an overlap of one or more potential maneb use sites with the range of the CTS (all three populations). Additionally, there is an overlap of potential use sites with the designated critical habitat of the CTS (Figure 2, areas filled in black color in the map).

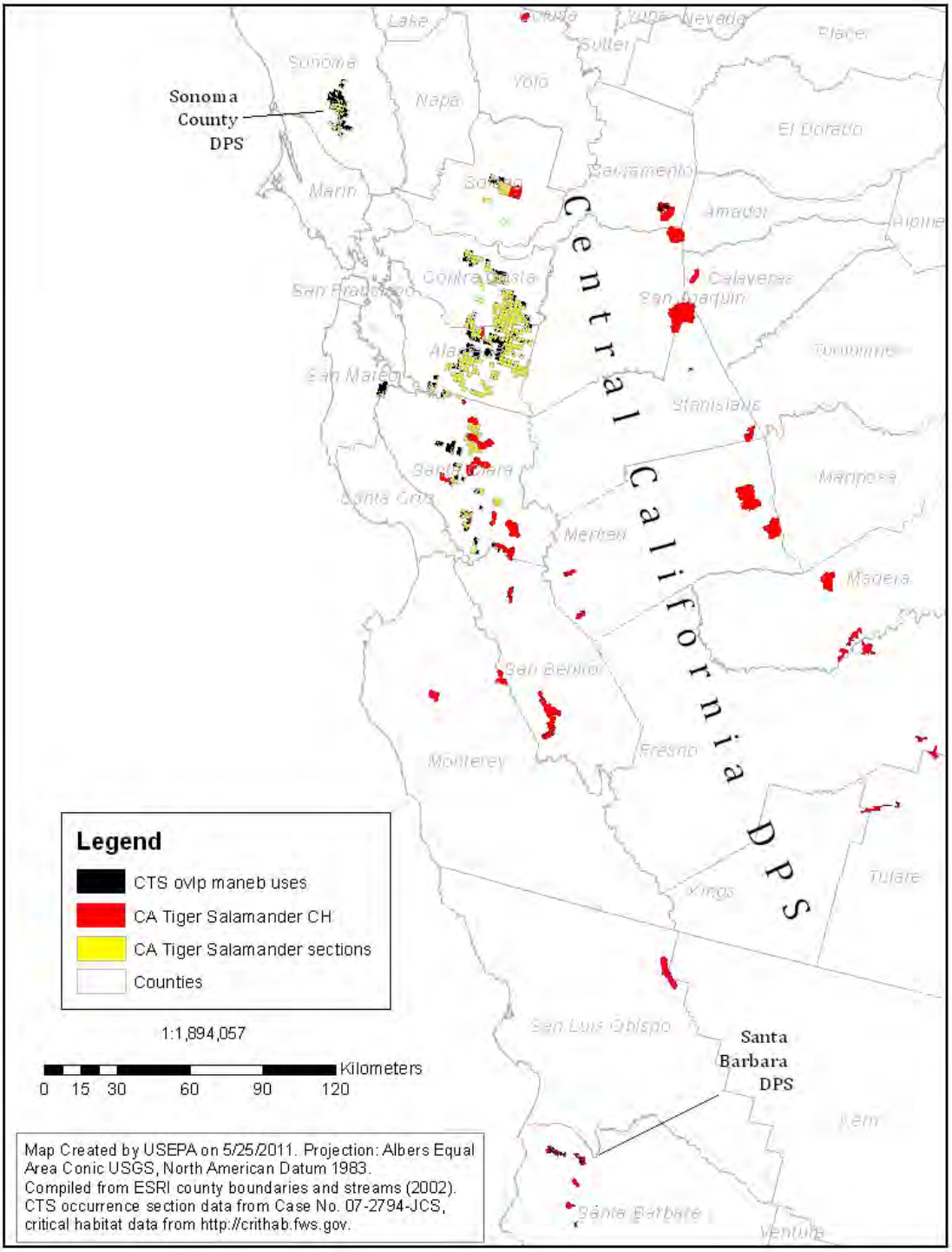


Figure 2 Overlap of Maneb Use and CTS

Attachments:

Verification Memorandum for Maneb for San Francisco Bay (March 28, 2011)

References:

USEPA (2004) Environmental Fate and Ecological Risk Assessment for Maneb, Section 4 Re-registration for Control of Fungal Diseases on Numerous Crops, Ornamental Plantings, and Turf**.** Office of Pesticide Programs, United States Environmental Protection Agency. Washington D.C.

USEPA (2007). Risks of Mancozeb and Maneb Use to the Federally Listed California Red Legged Frog (*Rana aurora draytonii*). Environmental Fate and Effects Division, Office of Pesticide Programs, United States Environmental Protection Agency. Washington, DC. October 18, 2007.

ATTACHMENT 1:

US Environmental Protection Agency
Office of Pesticide Programs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

DATE: **February 9, 2011**

SUBJECT: **Cancellation of All Maneb Products (PC Code 014601)**

FROM: Christina Scheltema, Chemical Review Manager
Risk Management Implementation Branch 3
Pesticide Re-evaluation Division (7508P)
and
Mary Waller, Product Manager
Fungicide Branch, Registration Division (7505P)

THRU: Tracy Perry, Team Leader
and
Michael Goodis, Chief
Risk Management Implementation Branch 3
Pesticide Re-evaluation Division (7508P)

TO: Valerie Woodard and Mohammed Ruhman
Environmental Risk Branch 5
Environmental Fate and Effects Division (7507P)

This memo is a response to your request for details on the cancellation of maneb, including it's degradate, Ethylene Thiourea (ETU). All pesticide products for the active ingredient maneb have been cancelled. This memo serves as confirmation from PRD and RD that this active ingredient has been canceled. Therefore, a San Fransico Bay endangered species risk assessment will not need to be conducted for maneb. However, ETU, which is also a degradate of mancozeb and metiram, should be considered in the risk assessment.

Date and Scope of the RED

The Reregistration Eligibility Decision (RED) for maneb was completed in 2005 in conjunction with the REDs for mancozeb and metiram. These three ethylenebisdithiocarbamate (EBDC) fungicides all produce the common metabolite and degradate ethylene thiourea (ETU), which causes most of the toxicity associated with the EBDCs. Each of the EBDC REDs considered exposure and risk from both the parent fungicide and aggregate exposure and risk from the ETU metabolite/degradate.

The maneb RED found products containing maneb eligible for reregistration, provided that data needs were addressed, risk mitigation (including some use deletions) measures were adopted, and product labels were amended accordingly. Generic and product-specific data call-ins (DCIs) were issued for maneb in July 1987. However, the maneb registrants decided to voluntarily cancel all maneb products rather than develop the required data.

Maneb Voluntary Cancellation and Tolerance Revocation

In 2008 and 2009, each of the maneb registrants submitted a request for voluntary cancellation of all maneb technical and manufacturing use products as well as all end-use pesticide products containing maneb. The Environmental Protection Agency (EPA or the Agency) published a Notice of Receipt for each voluntary cancellation request in the Federal Register. Because no comments were received on the Notices of Receipt for voluntary cancellation of all maneb products, EPA published a final cancellation orders for maneb in the Federal Register. These orders corresponded to each Notice of Receipt.

The last cancellation order for technical maneb was published in the Federal Register on February 24, 2010 (75 FR 29475). The cancellation order for the last maneb products registered in the United States was published on April 16, 2010 (75 FR 19967). Under the maneb cancellation orders, registrants are allowed to sell and distribute supplies of the canceled maneb products until supplies are exhausted.

After the publication of the last cancellation order for maneb, EPA received information from registrants that significant levels of existing stocks of the canceled maneb products were unlikely. Therefore, EPA proposed revocation of all maneb tolerances in the Federal Register on May 26, 2010 (75 FR 29475). After receiving numerous comments on the proposed tolerance revocation, the Agency decided not to revoke tolerances in 2010. EPA is currently planning to publish a final tolerance rule for maneb that will list an expiration date of December 31, 2012 for all maneb tolerances. This final rule is expected to be published in 2011. The tolerance expiration date will be the final use date for maneb on food or feed commodities.