Department of Pesticide Regulation

Mary-Ann Warmerdam
Director

MEMORANDUM

Arnold Schwarzenegger
Governor

TO: Tobi L. Jones, Ph.D., Assistant Director
Division of Registration and Health Evaluation

FROM: Bruce Johnson, Ph.D., Research Scientist III
Environmental Monitoring Branch
(916) 324-4106

Original signed by

DATE: March 29, 2007

SUBJECT: SIMULATION OF CONCENTRATIONS AND EXPOSURE ASSOCIATED WITH DOW AGROSCIENCES-PROPOSED TOWNSHIP CAPS FOR MERCED COUNTY FOR 1,3-DICHLOROPROPENE

Summary

The Dow AgroSciences (DAS) proposed a configuration of township caps in a 5x5 township area of high 1,3-dichloropropene (1,3-d) use in Merced. Four of the inner 9 townships were given 1.5X (135,375 pounds/year adjusted use) caps. The other 21 townships were lower than 1X (90,250 lbs/year adjusted use), with 12 townships at less than 0.1X (9025 lbs/year adjusted use). The purpose of this current memorandum was to evaluate the DAS proposal. The DAS Soil Fumigant Exposure Assessment (SOFEA) modeling tool was utilized to estimate air concentrations associated with this proposal. The resulting air concentration distributions were then used as input to High End Exposure Version 5 Crystal Ball (HEE5CB), a WHS exposure model, to estimate exposure. Input to the SOFEA model was based on Merced-specific use from 2003-2005 and five years of meteorological data from Merced. HEE5CB was used to simulate two mobility scenarios: Low Mobility (person spends entire life within the highest township), Intermediate Mobility (person's home in highest township, but travels around throughout the other 3x3 township area). For Low Mobility the lower and upper bound 95th percentile risk straddled the $1.0x10^{-5}$ reference level for males and females. The upper bounds were 9% and 7% higher than the reference level, respectively. For Intermediate Mobility the upper and lower bounds were uniformly less than the $1.0x10^{-5}$ 95th percentile reference level for males and females. The upper bounds were 3-4% lower than the reference level.

Background

DAS proposed a set of township caps for the use of 1,3-d in Merced (Wesenbeeck 2005). The exposure associated with the proposal was evaluated by DAS. First they used their modeling tool, SOFEA (SOFEA – Cryer 2004, 2005; Wesenbeeck and Cryer 2004), to produce concentration distributions associated with their proposal. Then they employed a risk model, based on the concepts in the exposure assessment portion (Sanborn and Powell 1994, Appendix B of Department of Pesticide Regulation [DPR] 1997) of DPR risk assessment of 1,3-d (DPR 1997). In the intervening time, the modeling tool, SOFEA, has undergone modifications and review (Johnson 2005ab, Johnson 2006). Consequently, it is desirable to recalculate the exposures associated with the proposed township cap levels. A key theme to this calculation is that the computer simulation is based upon Merced-specific use and meteorological data, in contrast to other simulation work (Johnson and Powell 2005, Johnson 2006) which was based on statewide use information and combined meteorological data from Merced and Ventura.

For more extended description and explanations, this memorandum will rely on a companion memorandum (Johnson 2007), which details the analogous analysis for Ventura County. This current memorandum will include primarily the differences between the Merced analysis and the Ventura analysis. Generally, the procedures in both cases are identical. Where they differ is (1) the proposed caps (Wesenbeeck 2005), (2) the use-based crop definitions and associated distributions, and (3) the meteorological data. Thus this memorandum will describe the differences, but omit the details that can be found in the companion memorandum.

Table 1. Crop translation table for use with Merced 1,3-d application

ALDER,EUROPEAN	TV	COTTON	FC	PEACHES	TV
ALFALFA	FC	CUCUMBERS	FC	PEARS	TV
ALMONDS	TV	EGGPLANT	FC	PEPPERS (BELL)	SB
APPLES	TV	FALLOW GROUND	FC	PEPPERS, CHILE	SB
APRICOTS	TV	FIGS	TV	PEPPERS-NO BEL	SB
ARTICHOKES	FC	FLOWERS	SB	PLUMS	TV
ASPARAGUS	FC	GRAPES (FRESH)	TV	POTATOES	PP
AVOCADOS	TV	GRAPES (RAISN)	TV	PRUNES	TV
BASIL	FC	GRAPES (WINE)	TV	PUMPKINS	FC
BEANS (DRY)	FC	HONEYDEW MELON	SB	RADISHES	PP
BEANS (LIMA DR	FC	LEMONS	TV	RASPBERRIES	TV
BEDDING PLANTS	FC	LETTUCE (HEAD)	FC	RED BEETS	FC
BEETS (TABLE)	PP	LETTUCE (LEAF)	FC	ROSES	FC
BEETS (TOP)	PP	LETTUCE,ROMAIN	FC	RYEGRASS	FC
BITTER MELON	FC	LILY	FC	SPINACH	FC
BLACKBERRIES	TV	MAHALEB CHERRY	TV	SQUASH (SUMMR)	FC
BROCCOFLOWER	FC	MANDARIN/ORANG	TV	STRAWBERRIES	SB
BROCCOLI	FC	MELONS	FC	STRAWBERRY,BCH	SB
BRUSSELS SPRTS	SB	MUSTARD	FC	SUGAR BEETS	PP
CABBAGE	FC	NAPA CABBAGE	FC	SWEET POTATOES	PP
CANTALOUPE	FC	NECTARINES	TV	TOMATO SEEDED	FC
CARROTS	PP	NON CROP AREAS	PP	TOMATO TRSPLT	FC
CAULIFLOWER	FC	NURSERIES	FC	TOMATOES FRESH	FC
CELERY	FC	NURSERY STOCK	FC	TURFGRASS	FC
CHERRIES, SAND	TV	ONIONS (DRY)	FC	Unknown	FC
CHERRIES-SWEET	TV	ONIONS (SEED)	FC	WALNUT (ORN)	TV
CHERRY,BLACK	TV	ONIONS,SPANISH	FC	WALNUTS (BLCK)	TV
CITRUS HYBRIDS	TV	ORANGES (NAVEL	TV	WALNUTS (ENGL)	TV
CITRUS(NURSERY	TV	ORANGES(SWEET)	TV	WATERMELONS	FC
CITRUS-ORN	TV	ORANGES(VALEN)	TV	YAMS	PP
CONIFER NURSRY	TV	ORNAMENTALS	FC		
CORN/SWEET	FC	PARSLEY	FC		

Objectives

1. Utilize Merced use information to create probability distributions of field size, application rate, application date and related variables for use in SOFEA.
2. Use SOFEA to estimate upper and lower bound concentration distributions reflecting low-mobility and intermediate-mobility assumptions using Merced meteorology.
3. Utilize the appropriate concentration distributions with High End Exposure Version 5 Crystal Ball (HEE5CB, Powell 2006) to provide exposure estimates for male and female lifetime exposure for the four cases resulting from upper/lower bounds and low- and intermediate-mobility and to compare these estimates to the reference level of 1.0E-5 ($=1.0\times10^{-5}$) at the 95th percentile.

Methods

The crop code lookup table was the same as used in Johnson and Powell (2005) with the following three exceptions: (1) almonds were coded to TV (they were NC in Johnson and Powell 2005 due to Crystal Ball size constraints, Decisioneering 2001), (2) figs were added as TV, and (3) watermelons were coded as FC (they were coded as SB in Johnson and Powell 2005). Coding the Merced use into FC, NC, PP, SB, and TV, resulted in only three crop categories: FC, PP, and TV. There were no treated acres in Merced for NC or SB categories. FC was mostly melons. Almost all of the PP consisted of sweet potatoes. Most of TV was almonds with some miscellaneous fruit trees. About 77% of the acreage over three years was from PP (sweet potatoes), while the remainder was roughly split between FC and TV.

Acreage. Based on the analysis 1,3-d use in Merced, the percentage by acreage of crops was 10%, 77%, and 14% for FC, PP, and TV, respectively. These governing percentages were entered into SOFEA for this Merced run. SOFEA strives to create a synthetic database of applications whose acreages should reflect these governing percentages. The average crop acreages from the five runs (J1306-J1310) were 1%, 82% and 17%. While FC was lower than the governing percentage, TV was reasonably close. It is more important to get TV reasonably close because the application rates are higher.

Probability Distributions. The three main probability distributions for each crop are shown in Appendix 1.

Percent Drip Applications. There were 0% drip applications.

Depth of Application. Most applications in Merced were at a depth of 18 inches or deeper (as opposed to 12 inches). The frequencies for deep applications of all of the shank applications were 88%, 99.6%, and 100% for FC, PP, and TV, respectively.

Township Cap Weights. The township cap weights for Merced, as proposed by Wesenbeeck (2005) are shown in Table 2. This township block consists of 05S09E in the upper left to 09S13E in the lower right. In the DAS proposal township cap of 1.5x was assigned to four of the nine townships in the center, shaded area. Historical levels of use along the southern two rows of townships have been low.

Section Weights. Powell (2002) determined annual and perennial section weights for 6 townships in Merced. These townships were #4-#9. The subscripts in Table 2 indicate the township numbers used by SOFEA. The bottom row of center townships had insufficient use to determine section weights. I assigned weights to #1 from #4, to #2 from #5 and to #3 from #6. Section weights are listed in Appendix 2.

Procedures to Analyze the Results. These procedures were identical to those in Johnson (2007). The highest exposure township in Merced of the four townships at the 1.5x cap level was township #6. The 95th percentile upper bound risks associated with each of these four townships (in sequence as #5, #6, #8, and #9) were respectively (male): 0.98e-5, 1.1e-5, 0.89e-5 and 0.97e-5 and (female): 0.96e-5, 1.07e-5, 0.88e-5, and 0.96e-5. In this case, the highest exposure township was not the township at the center of the 3x3 set of townships.

Table 2. Township cap weights proposed by DAS for Merced (Wesenbeeck 2005). Subscripts indicate township number in center 3x3 township area.

0.18	0.72	0.41	0.24	0.09
0.09	0.36_7	1.5_8	1.5_9	0.23
0.39	0.33_4	1.5_5	1.5_6	0.03
0.09	0_1	0_2	0_3	0.00
0.00	0.00	0.00	0.00	0.00

Results

The resulting risk estimate bounds straddled the reference level of 1.0E-5 (Gosselin 2001) for the low mobility scenario. Male risk estimates at the 95th percentile were between 0.98E-5 and 1.09E-5 while female risk was between 0.96E-5 and 1.07E-5. For the intermediate mobility, the evaluation produced somewhat lower estimates with the upper and lower bounds both lying below 1.0E-5. In the case of males, intermediate mobility assumption resulted in 0.85E-5 to 0.96E-5 and for females resulted in 0.85E-5 to 0.97E-5.

Summary

DAS proposed a configuration of township caps in a 5x5 township area of high 1,3-d use in Merced. Four of the inner 9 townships were given 1.5x (135,375 pounds/year adjusted use) caps. The other 21 townships were lower than 1x (90,250 lbs/year adjusted use), with 12 townships at less than 0.1x (9025 lbs/year adjusted use). The DAS SOFEA model was utilized to

Table 3. Bounded risk estimates for Merced township cap proposal (Wesenbeeck 2005) showing upper and lower bound with low and intermediate mobility scenarios.

	Male		Female	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Low	0.98E-05	1.09E-05	0.96E-05	1.07E-05
Intermediate	0.85E-05	0.96E-05	0.85E-05	0.97E-05

evaluate this proposal. Input to the SOFEA model was based on Merced-specific use from 2003-2005 and five years of meteorological data from Merced. Two mobility scenarios were simulated: Low Mobility (person spends entire life within the highest township), Intermediate Mobility (person's home in highest township, but travels around throughout the other 3x3 township area). For Low Mobility the lower and upper bound 95th tile risk straddled the 1E-5 reference level for males and females. The upper bounds were 9% and 7% higher than the reference level, respectively. For Intermediate Mobility the upper and lower bounds were uniformly less than the 1.E-5 95th percentile reference level for males and females. The upper bounds were 3-4% lower than the reference level.

cc: Randy Segawa, Agriculture Program Supervisor IV
Terrell Barry, Ph.D., Research Scientist III
Ian Reeve, Ph.D., Associate Toxicologist
Joseph P. Frank, Ph.D., Senior Toxicologist

References

Cryer, Steven A. 2004. SOFEA Programmer's Guide. August 2004. Docket Number EPA-HQ-OPP-2004-0242-0005.

Cryer, Steven A. 2005. Predicting soil fumigant air concentrations under regional and diverse agronomic conditions. Journal Environmental Quality 34:2197-2207.

Decisioneering, Inc. 2001. Crystal Ball 2000 Professional Edition (V5.2). 151 Arapahoe Street, Suite 1311, Denver, Colorado 80202.

DPR. 1997. Risk Assessment of 1,3-d. DPR California Environmental Protection Agency. January 10, 1997.

Gosselin, Paul. 2001. Memorandum to Tobi L. Jones, Ph.D., Ron Oshima, and Douglas Y. Okumura on Managing 1,3-d (Telone) chronic risks dated April 9, 2001.

Johnson, Bruce, Ph.D. 2005a. Memorandum to Tobi L. Jones, Ph.D., dated July 5, 2005, on Problems with DAS meteorological data.

Johnson, Bruce, Ph.D. 2005b. Memorandum to Tobi L. Jones, Ph.D., on Review of DAS computer simulation for Merced scenario dated June 6, 2005.

Johnson, Bruce, Ph.D. 2006. Memorandum to Tobi L. Jones, Ph.D., on buffer zone function in soil fumigant exposure assessment tool dated February 2, 2006.

Johnson, Bruce, Ph.D. 2007. Memorandum to Tobi L. Jones, Ph.D., on Simulation of concentrations and exposure associated with DAS-proposed township caps for Ventura County for 1,3-d dated March 27, 2007.

Johnson, Bruce, Ph.D., and Sally Powell. 2005. Memorandum to Tobi L. Jones, Ph.D., on Interim Statewide Caps Analysis for 1,3-d dated December 28, 2005.

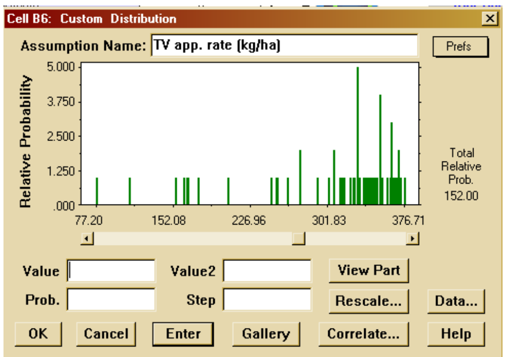
Powell, Sally. 2002. Determining the proportional distribution of acreage by section within townships–Merced County townships (February 2002). Permanent and annual crops.

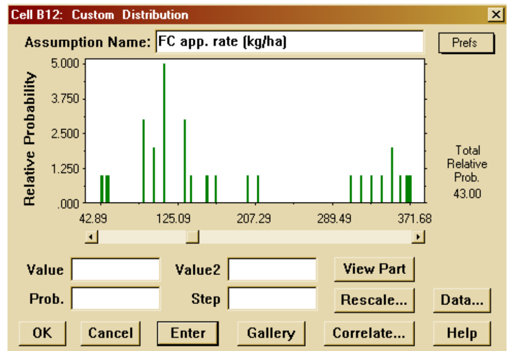
Sanborn, James R. and Sally Powell. 1994. Human exposure assessment for 1,3-d. HS 1634. May 26, 1989 Revised July 20, 1994. California Environmental Protection Agency, DPR, Worker Health and Safety Branch. 1020 N Street, Sacramento California 95814.

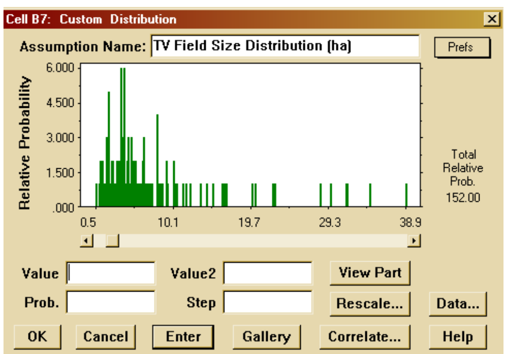
Wesenbeeck, Ian J. van and Steven A. Cryer. 2004. SOFEA User's Guide. August 2004. DAS 9330 Zionsville Road, Indianapolis, Indiana 46268. Docket Number EPA-HQ-OPP-2004-0242-0004.

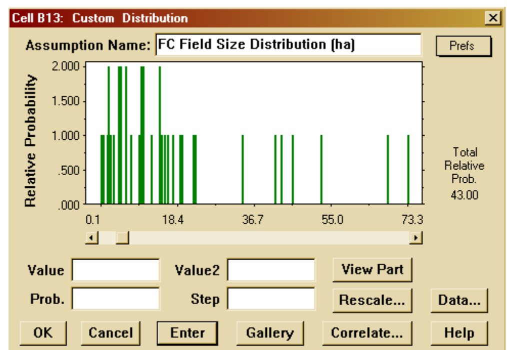
Wesenbeeck, Ian van. 2005. Letter to Bruce Johnson, Ph.D., dated January 17, 2005 RE: Results of township cap simulations in 25 (5x5) continguous [sic] Merced and Ventura townships.

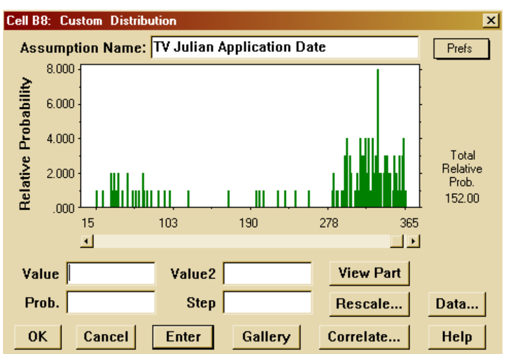
Appendix 1. Key probability distributions used for Merced SOFEA simulation

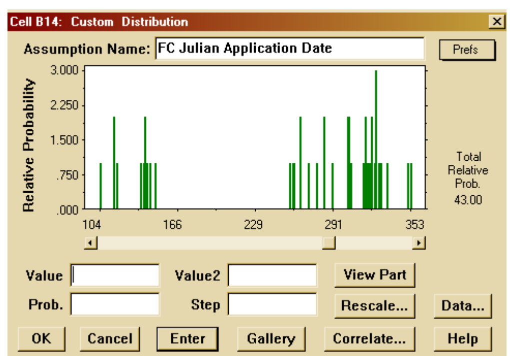


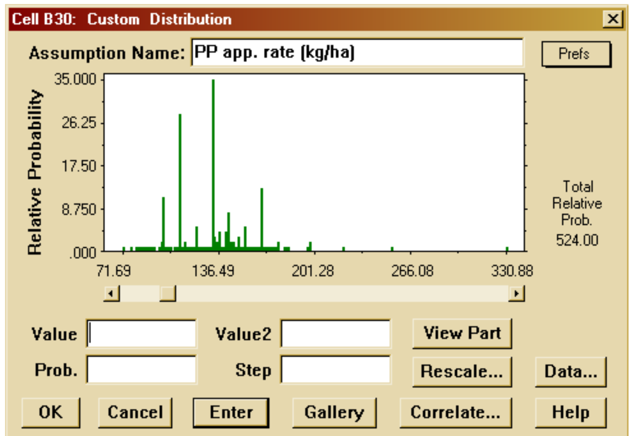


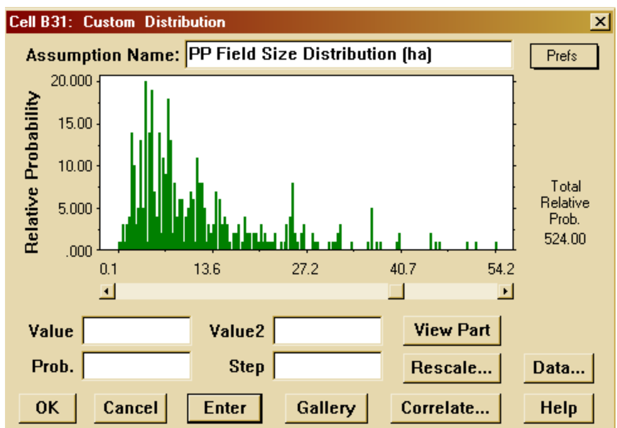


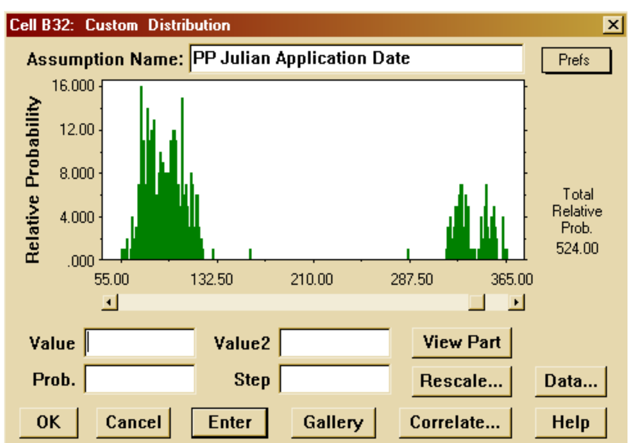







Cell B30: Custom Distribution
Assumption Name: PP app. rate (kg/ha)
Prefs
Relative Probability
35.000
26.25
17.50
8.750
.000
71.69
136.49
201.28
266.08
330.88
Total Relative Prob. 524.00
Value
Value2
View Part
Prob.
Step
Rescale...
Data...
OK
Cancel
Enter
Gallery
Correlate...
Help


Cell B31: Custom Distribution
Assumption Name: PP Field Size Distribution (ha)
Prefs
Relative Probability
20.000
15.00
10.00
5.000
.000
0.1
13.6
27.2
40.7
54.2
Total Relative Prob. 524.00
Value
Value2
View Part
Prob.
Step
Rescale...
Data...
OK
Cancel
Enter
Gallery
Correlate...
Help


Cell B32: Custom Distribution
Assumption Name: PP Julian Application Date
Prefs
Relative Probability
16.000
12.00
8.000
4.000
.000
55.00
132.50
210.00
287.50
365.00
Total Relative Prob. 524.00
Value
Value2
View Part
Prob.
Step
Rescale...
Data...
OK
Cancel
Enter
Gallery
Correlate...
Help

Appendix 2. Section Weights for Merced Simulation

0.000	0.000	0.000	0.110	0.020	0.030	0.000	0.100	0.020	0.020	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000
0.000	0.000	0.130	0.000	0.000	0.180	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
0.000	0.000	0.000	0.000	0.310	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.120	0.150	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.000	0.000	0.060	0.040	0.020	0.190	0.000	0.050	0.080	0.000
0.000	0.000	0.030	0.000	0.030	0.000	0.000	0.060	0.010	0.060	0.020	0.000	0.000	0.000	0.000	0.040	0.000	0.030
0.000	0.130	0.000	0.000	0.000	0.000	0.000	0.000	0.130	0.280	0.030	0.080	0.140	0.000	0.000	0.070	0.000	0.000
0.000	0.000	0.000	0.110	0.120	0.210	0.000	0.050	0.050	0.000	0.000	0.050	0.060	0.030	0.000	0.000	0.020	0.000
0.000	0.000	0.000	0.000	0.170	0.000	0.100	0.000	0.060	0.030	0.030	0.000	0.070	0.080	0.020	0.110	0.000	0.090
0.000	0.080	0.030	0.000	0.190	0.000	0.120	0.000	0.000	0.060	0.140	0.070	0.040	0.000	0.000	0.040	0.030	0.040
0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.000	0.040	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.070	0.000	0.000	0.000	0.020	0.060	0.220	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.110	0.120	0.210	0.000	0.050	0.050	0.000	0.000	0.050	0.060	0.030	0.000	0.000	0.020	0.000
0.000	0.000	0.000	0.000	0.170	0.000	0.100	0.000	0.060	0.030	0.030	0.000	0.070	0.080	0.020	0.110	0.000	0.090
0.000	0.080	0.030	0.000	0.190	0.000	0.120	0.000	0.000	0.060	0.140	0.070	0.040	0.000	0.000	0.040	0.030	0.040
0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.000	0.040	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.070	0.000	0.000	0.000	0.020	0.060	0.220	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000

ANNUAL CROPS

Loop 1

0.000	0.000	0.060	0.010	0.020	0.000	0.010	0.010	0.030	0.050	0.030	0.090	0.040	0.020	0.010	0.000	0.000	0.010
0.000	0.000	0.010	0.000	0.090	0.120	0.010	0.000	0.000	0.010	0.320	0.020	0.020	0.310	0.000	0.000	0.000	0.010
0.020	0.040	0.000	0.000	0.020	0.020	0.000	0.030	0.020	0.000	0.020	0.020	0.030	0.020	0.020	0.020	0.020	0.020
0.000	0.030	0.030	0.030	0.020	0.060	0.030	0.020	0.010	0.020	0.010	0.020	0.020	0.020	0.030	0.030	0.010	0.070
0.000	0.000	0.010	0.030	0.040	0.080	0.020	0.030	0.020	0.030	0.000	0.000	0.030	0.060	0.030	0.050	0.000	0.000
0.000	0.000	0.050	0.050	0.080	0.100	0.030	0.030	0.030	0.000	0.040	0.010	0.010	0.030	0.030	0.030	0.000	0.000
0.120	0.000	0.040	0.310	0.250	0.200	0.040	0.030	0.040	0.020	0.100	0.090	0.040	0.030	0.070	0.030	0.000	0.000
0.000	0.000	0.000	0.000	0.080	0.000	0.020	0.010	0.000	0.020	0.180	0.030	0.030	0.040	0.040	0.200	0.030	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.000	0.000	0.020	0.020	0.040	0.050	0.020	0.010	0.060	0.020	0.040
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.030	0.060	0.050	0.030	0.020	0.000	0.030	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.040	0.000	0.050	0.030	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.020	0.000	0.000
0.120	0.000	0.040	0.310	0.250	0.200	0.040	0.030	0.040	0.020	0.100	0.090	0.040	0.030	0.070	0.030	0.000	0.000
0.000	0.000	0.000	0.000	0.080	0.000	0.020	0.010	0.000	0.020	0.180	0.030	0.030	0.040	0.040	0.200	0.030	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.000	0.000	0.020	0.020	0.040	0.050	0.020	0.010	0.060	0.020	0.040
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.030	0.060	0.050	0.030	0.020	0.000	0.030	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.040	0.000	0.050	0.030	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.020	0.000	0.000

Loop 1

PERENNIAL CROPS

Appendix 3. Technical Notes. Table A3.1 File Listing and File Location (I=modelcoord)

path, filename	Date	Size
I:\gamma0501\caps-merced\mercedusepattern\2004 CDMS Data Prepared for BJohnson by DGS 27Mar2006.xls	6/6/2006	512 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\CVj1306-10.JNB	2/7/2007	754 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\four-townships1.5x.jnb	3/9/2007	173 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\j1306pos.xls	1/29/2007	16,522 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\j1307pos.xls	1/30/2007	16,512 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\j1308pos.xls	1/29/2007	16,512 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\j1309pos.xls	1/30/2007	16,522 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\j1310pos.xls	3/14/2007	16,089 KB
I:\gamma0501\caps-merced\mercedusepattern\analyze-runs\working1306-10.xls	2/27/2007	10,286 KB
I:\gamma0501\caps-merced\mercedusepattern\CDMS Data Merced Ventura 2005 for CA-DPR 18Oct2006 DGS.x	12/11/2006	100 KB
I:\gamma0501\caps-merced\mercedusepattern\filelist.txt	1/10/2007	1 KB
I:\gamma0501\caps-merced\mercedusepattern\get03-05mer-vent.xls	1/11/2007	597 KB
I:\gamma0501\caps-merced\mercedusepattern\j1306-10acreage.xls	2/28/2007	422 KB
I:\gamma0501\caps-merced\mercedusepattern\merc03-05working.xls	3/8/2007	7,748 KB
I:\gamma0501\caps-merced\mercedusepattern\merced-report.doc	3/14/2007	275 KB
I:\gamma0501\caps-merced\mercedusepattern\readmebrj.txt	1/11/2007	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\filelist.txt	1/25/2007	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\01n21wa.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\01n21wp.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\01n22wa.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\01n22wp.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n20wa.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n20wp.csv	6/13/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n21wa.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n21wp.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n22wa.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\02n22wp.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s10ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s10ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s11ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s11ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s12ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\06s12ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s10ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s10ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s11ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s11ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s12ea.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\07s12ep.csv	6/14/2005	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\ANN9.OUT	1/26/2007	2 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\errs.BJ	1/26/2007	1 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\junk.out	1/26/2007	57 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.BAK	1/26/2007	12 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.exe	1/26/2007	472 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.for	1/26/2007	12 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.fwd	1/26/2007	7 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.lst	1/26/2007	48 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.map	1/26/2007	78 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.obj	1/26/2007	49 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mak3x3merced.ydg	1/26/2007	7 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\MERCANN.OUT	1/26/2007	2 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\mercedweights.xls	1/26/2007	18 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\MERCPER.OUT	1/26/2007	2 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\GETWEIGHT\PER9.OUT	1/26/2007	2 KB
I:\gamma0501\caps-merced\mercedusepattern\section-weight\inventorymerced.xls	1/25/2007	21 KB
I:\gamma0501\caps-merced\mercedusepattern\statewide99-03cdms.xls	10/16/2006	11,244 KB
I:\gamma0501\caps-merced\mercedusepattern\tab02,03.xls	3/9/2007	16 KB
I:\gamma0501\caps-merced\mercedusepattern\tab02.xls	3/8/2007	14 KB
I:\gamma0501\caps-merced\mercedusepattern\vent03-05working.xls	1/11/2007	102 KB

SOFEA Runs J1306-J1310
Exposure Runs Exp0057-Exp0060 for determining max township
Exposure Runs Exp0061-Exp0064 for estimating high/low mobility, upper/lower bounds
MAK3X3MERCED.FOR put together section weights in easy-to-use format for Merced