

## APPENDIX I. KABAM Summary and Example Output

### Summary of Risk Quotients for Consumption of Aquatic Prey by the CRLF

| Crop                             | Run | AVIAN        | Acute<br>Dose RQ | Acute<br>Dietary<br>RQ | Chronic<br>Dietary<br>RQ |
|----------------------------------|-----|--------------|------------------|------------------------|--------------------------|
| Almonds, Hazelnuts & Walnuts     | 1   | small CRLF 1 | 1.591            | 0.003                  | 0.090                    |
|                                  |     | small CRLF 2 | 0.537            | 0.003                  | 0.073                    |
|                                  |     | med CRLF 1   | 0.105            | 0.003                  | 0.073                    |
|                                  |     | med CRLF 2   | 0.129            | 0.004                  | 0.100                    |
|                                  |     | large CRLF 1 | 0.041            | 0.003                  | 0.073                    |
|                                  |     | large CRLF 2 | 0.056            | 0.004                  | 0.110                    |
| Citrus                           | 1   | small CRLF 1 | 1.395            | 0.003                  | 0.079                    |
|                                  |     | small CRLF 2 | 0.468            | 0.002                  | 0.063                    |
|                                  |     | med CRLF 1   | 0.091            | 0.002                  | 0.063                    |
|                                  |     | med CRLF 2   | 0.112            | 0.003                  | 0.088                    |
|                                  |     | large CRLF 1 | 0.036            | 0.002                  | 0.063                    |
|                                  |     | large CRLF 2 | 0.048            | 0.004                  | 0.096                    |
| Broccoli, Cabbage & Cauliflower  | 1   | small CRLF 1 | 4.036            | 0.008                  | 0.228                    |
|                                  |     | small CRLF 2 | 1.369            | 0.007                  | 0.185                    |
|                                  |     | med CRLF 1   | 0.267            | 0.007                  | 0.185                    |
|                                  |     | med CRLF 2   | 0.328            | 0.010                  | 0.256                    |
|                                  |     | large CRLF 1 | 0.106            | 0.007                  | 0.185                    |
|                                  |     | large CRLF 2 | 0.142            | 0.010                  | 0.280                    |
| Collards, Kale & Mustard Green   | 2   | small CRLF 1 | 1.202            | 0.003                  | 0.068                    |
|                                  |     | small CRLF 2 | 0.408            | 0.002                  | 0.055                    |
|                                  |     | med CRLF 1   | 0.080            | 0.002                  | 0.055                    |
|                                  |     | med CRLF 2   | 0.098            | 0.003                  | 0.076                    |
|                                  |     | large CRLF 1 | 0.031            | 0.002                  | 0.055                    |
|                                  |     | large CRLF 2 | 0.042            | 0.003                  | 0.083                    |
| Sweet corn for fresh market only | 1   | small CRLF 1 | 1.763            | 0.004                  | 0.099                    |
|                                  |     | small CRLF 2 | 0.598            | 0.003                  | 0.081                    |
|                                  |     | med CRLF 1   | 0.117            | 0.003                  | 0.081                    |
|                                  |     | med CRLF 2   | 0.143            | 0.004                  | 0.112                    |
|                                  |     | large CRLF 1 | 0.046            | 0.003                  | 0.081                    |
|                                  |     | large CRLF 2 | 0.062            | 0.005                  | 0.122                    |
| Cotton (ground)                  | 2   | small CRLF 1 | 0.924            | 0.002                  | 0.052                    |
|                                  |     | small CRLF 2 | 0.316            | 0.002                  | 0.043                    |
|                                  |     | med CRLF 1   | 0.062            | 0.002                  | 0.043                    |
|                                  |     | med CRLF 2   | 0.076            | 0.002                  | 0.059                    |
|                                  |     | large CRLF 1 | 0.024            | 0.002                  | 0.043                    |
|                                  |     | large CRLF 2 | 0.033            | 0.002                  | 0.065                    |
| Cotton (aerial)                  | 3   | small CRLF 1 | 1.278            | 0.003                  | 0.072                    |
|                                  |     | small CRLF 2 | 0.432            | 0.002                  | 0.058                    |
|                                  |     | med CRLF 1   | 0.084            | 0.002                  | 0.058                    |
|                                  |     | med CRLF 2   | 0.104            | 0.003                  | 0.081                    |

| Crop                                                    | Run   | AVIAN        | Acute<br>Dose RQ | Acute<br>Dietary<br>RQ | Chronic<br>Dietary<br>RQ |
|---------------------------------------------------------|-------|--------------|------------------|------------------------|--------------------------|
|                                                         |       | large CRLF 1 | 0.033            | 0.002                  | 0.058                    |
|                                                         |       | large CRLF 2 | 0.045            | 0.003                  | 0.088                    |
| All fruit trees                                         | 1     | small CRLF 1 | 1.571            | 0.003                  | 0.089                    |
|                                                         |       | small CRLF 2 | 0.528            | 0.003                  | 0.072                    |
|                                                         |       | med CRLF 1   | 0.103            | 0.003                  | 0.072                    |
|                                                         |       | med CRLF 2   | 0.127            | 0.004                  | 0.099                    |
|                                                         |       | large CRLF 1 | 0.041            | 0.003                  | 0.072                    |
|                                                         |       | large CRLF 2 | 0.055            | 0.004                  | 0.108                    |
| Lettuce & Brussels Sprouts                              | 1     | small CRLF 1 | 3.992            | 0.008                  | 0.225                    |
|                                                         |       | small CRLF 2 | 1.355            | 0.007                  | 0.183                    |
|                                                         |       | med CRLF 1   | 0.264            | 0.007                  | 0.183                    |
|                                                         |       | med CRLF 2   | 0.325            | 0.009                  | 0.254                    |
|                                                         |       | large CRLF 1 | 0.104            | 0.007                  | 0.183                    |
|                                                         |       | large CRLF 2 | 0.140            | 0.010                  | 0.277                    |
| Cucurbits                                               | 1     | small CRLF 1 | 1.264            | 0.003                  | 0.071                    |
|                                                         |       | small CRLF 2 | 0.430            | 0.002                  | 0.058                    |
|                                                         |       | med CRLF 1   | 0.084            | 0.002                  | 0.058                    |
|                                                         |       | med CRLF 2   | 0.103            | 0.003                  | 0.080                    |
|                                                         |       | large CRLF 1 | 0.033            | 0.002                  | 0.058                    |
|                                                         |       | large CRLF 2 | 0.045            | 0.003                  | 0.088                    |
| Eggplant                                                | 3     | small CRLF 1 | 0.367            | 0.001                  | 0.021                    |
|                                                         |       | small CRLF 2 | 0.124            | 0.001                  | 0.017                    |
|                                                         |       | med CRLF 1   | 0.024            | 0.001                  | 0.017                    |
|                                                         |       | med CRLF 2   | 0.030            | 0.001                  | 0.023                    |
|                                                         |       | large CRLF 1 | 0.010            | 0.001                  | 0.017                    |
|                                                         |       | large CRLF 2 | 0.013            | 0.001                  | 0.025                    |
| Ornamentals or Shade Trees<br>(Southern Coast)          | 1     | small CRLF 1 | 2.104            | 0.004                  | 0.119                    |
|                                                         |       | small CRLF 2 | 0.719            | 0.004                  | 0.097                    |
|                                                         |       | med CRLF 1   | 0.140            | 0.004                  | 0.097                    |
|                                                         |       | med CRLF 2   | 0.172            | 0.005                  | 0.134                    |
|                                                         |       | large CRLF 1 | 0.055            | 0.004                  | 0.097                    |
|                                                         |       | large CRLF 2 | 0.074            | 0.005                  | 0.147                    |
| Ornamentals or Shade Trees<br>(Northern Central coast)) | 1 Add | small CRLF 1 | 2.679            | 0.006                  | 0.151                    |
|                                                         |       | small CRLF 2 | 0.910            | 0.005                  | 0.123                    |
|                                                         |       | med CRLF 1   | 0.178            | 0.005                  | 0.123                    |
|                                                         |       | med CRLF 2   | 0.218            | 0.006                  | 0.170                    |
|                                                         |       | large CRLF 1 | 0.070            | 0.005                  | 0.123                    |
|                                                         |       | large CRLF 2 | 0.094            | 0.007                  | 0.186                    |
| Potato                                                  | 1     | small CRLF 1 | 1.194            | 0.003                  | 0.067                    |
|                                                         |       | small CRLF 2 | 0.402            | 0.002                  | 0.054                    |
|                                                         |       | med CRLF 1   | 0.078            | 0.002                  | 0.054                    |
|                                                         |       | med CRLF 2   | 0.097            | 0.003                  | 0.075                    |
|                                                         |       | large CRLF 1 | 0.031            | 0.002                  | 0.054                    |
|                                                         |       | large CRLF 2 | 0.042            | 0.003                  | 0.082                    |

| Crop                            | Run   | AVIAN        | Acute<br>Dose RQ | Acute<br>Dietary<br>RQ | Chronic<br>Dietary<br>RQ |
|---------------------------------|-------|--------------|------------------|------------------------|--------------------------|
| Potato (Northern Central coast) | 1 Add | small CRLF 1 | 1.567            | 0.003                  | 0.088                    |
|                                 |       | small CRLF 2 | 0.529            | 0.003                  | 0.072                    |
|                                 |       | med CRLF 1   | 0.103            | 0.003                  | 0.072                    |
|                                 |       | med CRLF 2   | 0.127            | 0.004                  | 0.099                    |
|                                 |       | large CRLF 1 | 0.041            | 0.003                  | 0.072                    |
|                                 |       | large CRLF 2 | 0.055            | 0.004                  | 0.108                    |
| Sweet Potato                    | 3     | small CRLF 1 | 0.964            | 0.002                  | 0.054                    |
|                                 |       | small CRLF 2 | 0.324            | 0.002                  | 0.044                    |
|                                 |       | med CRLF 1   | 0.063            | 0.002                  | 0.044                    |
|                                 |       | med CRLF 2   | 0.078            | 0.002                  | 0.061                    |
|                                 |       | large CRLF 1 | 0.025            | 0.002                  | 0.044                    |
|                                 |       | large CRLF 2 | 0.034            | 0.002                  | 0.066                    |
| Beans & Peas (dry) & Pepper     | 1     | small CRLF 1 | 1.319            | 0.003                  | 0.074                    |
|                                 |       | small CRLF 2 | 0.448            | 0.002                  | 0.061                    |
|                                 |       | med CRLF 1   | 0.087            | 0.002                  | 0.061                    |
|                                 |       | med CRLF 2   | 0.107            | 0.003                  | 0.084                    |
|                                 |       | large CRLF 1 | 0.035            | 0.002                  | 0.061                    |
|                                 |       | large CRLF 2 | 0.046            | 0.003                  | 0.092                    |
| Carrot & Celery                 | 2     | small CRLF 1 | 1.140            | 0.002                  | 0.064                    |
|                                 |       | small CRLF 2 | 0.388            | 0.002                  | 0.053                    |
|                                 |       | med CRLF 1   | 0.076            | 0.002                  | 0.053                    |
|                                 |       | med CRLF 2   | 0.093            | 0.003                  | 0.073                    |
|                                 |       | large CRLF 1 | 0.030            | 0.002                  | 0.053                    |
|                                 |       | large CRLF 2 | 0.040            | 0.003                  | 0.079                    |
| Strawberry                      | 1     | small CRLF 1 | 2.657            | 0.006                  | 0.150                    |
|                                 |       | small CRLF 2 | 0.900            | 0.005                  | 0.122                    |
|                                 |       | med CRLF 1   | 0.176            | 0.005                  | 0.122                    |
|                                 |       | med CRLF 2   | 0.216            | 0.006                  | 0.168                    |
|                                 |       | large CRLF 1 | 0.069            | 0.005                  | 0.122                    |
|                                 |       | large CRLF 2 | 0.093            | 0.007                  | 0.184                    |
| Tomato                          | 1     | small CRLF 1 | 1.253            | 0.003                  | 0.071                    |
|                                 |       | small CRLF 2 | 0.423            | 0.002                  | 0.057                    |
|                                 |       | med CRLF 1   | 0.082            | 0.002                  | 0.057                    |
|                                 |       | med CRLF 2   | 0.101            | 0.003                  | 0.079                    |
|                                 |       | large CRLF 1 | 0.033            | 0.002                  | 0.057                    |
|                                 |       | large CRLF 2 | 0.044            | 0.003                  | 0.086                    |

## Example KABAM Input and Output for the Broccoli, Cabbage & Cauliflower Crop Scenarios

| Table 1. Chemical characteristics of endosulfan. |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Characteristic                                   | Value      | Comments/Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pesticide Name                                   | endosulfan | <b>Required input</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Log K <sub>OW</sub>                              | 4.76       | <b>Required input</b><br>Enter value from acceptable or supplemental study submitted by registrant or available in scientific literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| K <sub>OW</sub>                                  | 56966      | No input necessary. This value is calculated automatically from the Log K <sub>OW</sub> value entered above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| K <sub>OC</sub> (L/kg OC)                        | 10600      | <b>Required input</b><br>Input value used in PRZM/EXAMS to derive EECs. Follow input parameter guidance for deriving this parameter value (USEPA 2002).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Time to steady state (T <sub>s</sub> ; days)     | 18         | No input necessary. This value is calculated automatically from the Log K <sub>OW</sub> value entered above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Pore water EEC (µg/L)                            | 1.168      | <b>Required input</b><br>Enter value generated by PRZM/EXAMS benthic file. PRZM/EXAMS EEC represents the freely dissolved concentration of the pesticide in the pore water of the sediment. The appropriate averaging period of the EEC is dependent on the specific pesticide being modeled and is based on the time it takes for the chemical to reach steady state. Select the EEC generated by PRZM/EXAMS which has an averaging period closest to the time to steady state calculated above. In cases where the time to steady state exceeds 365 days, the user should select the EEC representing the average of yearly averages. The peak EEC should not be used. |
| Water Column EEC (µg/L)                          | 2.603      | <b>Required input</b><br>Enter value generated by PRZM/EXAMS water column file. PRZM/EXAMS EEC represents the freely dissolved concentration of the pesticide in the water column. The appropriate averaging period of the EEC is dependent on the specific pesticide being modeled and is based on the time it takes for the chemical to reach steady state. The averaging period used for the water column EEC should be the same as the one selected for the pore water EEC (discussed above).                                                                                                                                                                        |

| Table 2. Input parameters for rate constants. "calculated" indicates that model will calculate rate constant. |                         |                                   |                                   |                                   |                                     |
|---------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|
| Trophic level                                                                                                 | k <sub>1</sub> (L/kg*d) | k <sub>2</sub> (d <sup>-1</sup> ) | k <sub>D</sub> (kg-food/kg-org/d) | k <sub>E</sub> (d <sup>-1</sup> ) | k <sub>M</sub> * (d <sup>-1</sup> ) |
| phytoplankton                                                                                                 | calculated              | calculated                        | 0*                                | 0*                                | 0                                   |
| zooplankton                                                                                                   | calculated              | calculated                        | calculated                        | calculated                        | 0                                   |

**Table 2. Input parameters for rate constants. "calculated" indicates that model will calculate rate constant.**

| Trophic level                                                                                                                                                                                                                                                                                                                                         | $k_1$<br>(L/kg*d) | $k_2$<br>(d <sup>-1</sup> ) | $k_D$<br>(kg-food/kg-org/d) | $k_E$<br>(d <sup>-1</sup> ) | $k_M^*$<br>(d <sup>-1</sup> ) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|
| benthic invertebrates                                                                                                                                                                                                                                                                                                                                 | calculated        | calculated                  | calculated                  | calculated                  | 0                             |
| filter feeders                                                                                                                                                                                                                                                                                                                                        | calculated        | calculated                  | calculated                  | calculated                  | 0                             |
| small fish                                                                                                                                                                                                                                                                                                                                            | calculated        | calculated                  | calculated                  | calculated                  | 0                             |
| medium fish                                                                                                                                                                                                                                                                                                                                           | calculated        | calculated                  | calculated                  | calculated                  | 0                             |
| large fish                                                                                                                                                                                                                                                                                                                                            | calculated        | calculated                  | calculated                  | calculated                  | 0                             |
| <p>* Default value is 0.</p> <p><math>k_1</math> and <math>k_2</math> represent the uptake and elimination constants respectively, through respiration.</p> <p><math>k_D</math> and <math>k_E</math> represent the uptake and elimination constants, respectively, through diet.</p> <p><math>k_M</math> represents the metabolism rate constant.</p> |                   |                             |                             |                             |                               |

**Table 3. Mammalian and avian toxicity data for endosulfan. These are required inputs.**

| Animal    | Measure of effect (units)     | Value | Species                                                                                       | If selected species is "other," enter body weight (in kg) here. |
|-----------|-------------------------------|-------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Avian     | LD <sub>50</sub> (mg/kg-bw)   | 28    | mallard duck                                                                                  |                                                                 |
|           | LC <sub>50</sub> (mg/kg-diet) | 805   | Northern bobwhite quail                                                                       |                                                                 |
|           | NOAEC (mg/kg-diet)            | 30    | mallard duck                                                                                  |                                                                 |
|           | Mineau Scaling Factor         | 1.15  | Default value for all species is 1.15 (for chemical specific values, see Mineau et al. 1996). |                                                                 |
| Mammalian | LD <sub>50</sub> (mg/kg-bw)   | 10    | laboratory rat                                                                                |                                                                 |
|           | LC <sub>50</sub> (mg/kg-diet) | N/A   | laboratory rat                                                                                |                                                                 |
|           | Chronic Endpoint              | 15    | laboratory rat                                                                                |                                                                 |
|           | units of chronic endpoint*    | ppm   |                                                                                               |                                                                 |

\*ppm = mg/kg-diet

| Table 4. Abiotic characteristics of the model aquatic ecosystem.                                                                                                                      |          |                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Characteristic                                                                                                                                                                        | Value    | Guidance*                                                                                                                                                                         |
| Concentration of Particulate Organic Carbon (X <sub>POC</sub> ; kg OC/ L)                                                                                                             | 0.00E+00 | When using EECs generated by PRZM/EXAMS, use a value of "0" for both POC and DOC.                                                                                                 |
| Concentration of Dissolved Organic Carbon (X <sub>DOC</sub> ; kg OC/L)                                                                                                                | 0.00E+00 |                                                                                                                                                                                   |
| Concentration of Dissolved Oxygen (C <sub>OX</sub> ; mg O <sub>2</sub> /L)                                                                                                            | 5.0      | Default value is 5.0 mg O <sub>2</sub> /L when using EECs generated by PRZM/EXAMS.                                                                                                |
| Water Temperature (T; °C)                                                                                                                                                             | 13       | Value is defined by the average water temperature of the EXAMS pond when using EECs generated by PRZM/EXAMS. Model user should consult output file of EXAMS to define this value. |
| Concentration of Suspended Solids (C <sub>SS</sub> ; kg/L)                                                                                                                            | 3.00E-05 | Default value is 3.00x10 <sup>-5</sup> kg/L when using EECs generated by PRZM/EXAMS.                                                                                              |
| Sediment Organic Carbon (OC; %)                                                                                                                                                       | 4.0%     | Default value is 4.0% when using EECs generated by PRZM/EXAMS.                                                                                                                    |
| *When using pesticide concentrations from monitoring data or mesocosm studies, consult Appendix B of the User's Guide for specific guidance on selecting values for these parameters. |          |                                                                                                                                                                                   |

| Table 5. Characteristics of aquatic biota of the model ecosystem.                                                                                                  |                 |          |        |         |                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|--------|---------|--------------------------------------------------------|
| Trophic Level                                                                                                                                                      | Wet Weight (kg) | % lipids | % NLOM | % Water | Do organisms in trophic level respire some pore water? |
| sediment*                                                                                                                                                          | N/A             | 0.0%     | 4.0%   | 96.0%   | N/A                                                    |
| phytoplankton                                                                                                                                                      | N/A             | 2.0%     | 8.0%   | 90.0%   | no                                                     |
| zooplankton                                                                                                                                                        | 1.0E-07         | 3.0%     | 12.0%  | 85.0%   | no                                                     |
| benthic invertebrates                                                                                                                                              | 1.0E-04         | 3.0%     | 21.0%  | 76.0%   | yes                                                    |
| filter feeders                                                                                                                                                     | 1.0E-03         | 2.0%     | 13.0%  | 85.0%   | yes                                                    |
| small fish                                                                                                                                                         | 1.0E-02         | 4.0%     | 23.0%  | 73.0%   | yes                                                    |
| medium fish                                                                                                                                                        | 1.0E-01         | 4.0%     | 23.0%  | 73.0%   | yes                                                    |
| large fish                                                                                                                                                         | 1.0E+00         | 4.0%     | 23.0%  | 73.0%   | no                                                     |
| *Note that sediment is not a trophic level. It is included in this table because it is consumed by aquatic organisms of the KABAM foodweb.<br>N/A = not applicable |                 |          |        |         |                                                        |

**Table 6. Diets of aquatic biota of the model ecosystem.**

| Trophic level in diet | Diet for:    |                       |               |            |             |            |
|-----------------------|--------------|-----------------------|---------------|------------|-------------|------------|
|                       | Zoo plankton | Benthic Invertebrates | Filter Feeder | Small Fish | Medium Fish | Large Fish |
| sediment*             | 0.0%         | 34.0%                 | 34.0%         | 0.0%       | 0.0%        | 0.0%       |
| phytoplankton         | 100.0%       | 33.0%                 | 33.0%         | 0.0%       | 0.0%        | 0.0%       |
| zooplankton           |              | 33.0%                 | 33.0%         | 50.0%      | 0.0%        | 0.0%       |
| benthic invertebrates |              |                       | 0.0%          | 50.0%      | 50.0%       | 0.0%       |
| filter feeders        |              |                       |               | 0.0%       | 0.0%        | 0.0%       |
| small fish            |              |                       |               |            | 50.0%       | 0.0%       |
| medium fish           |              |                       |               |            |             | 100.0%     |
| Total                 | 100.0%       | 100.0%                | 100.0%        | 100.0%     | 100.0%      | 100.0%     |

\*Note that sediment is not a trophic level. It is included in this table because it is consumed by aquatic organisms of the KABAM foodweb.

**Table 7. Identification of mammals and birds feeding on aquatic biota of the model ecosystem.**

| Mammal/Bird # | Name                     | Body weight (kg) |
|---------------|--------------------------|------------------|
| Mammal 1      | fog/water shrew          | 0.018            |
| Mammal 2      | rice rat/star-nosed mole | 0.085            |
| Mammal 3      | small mink               | 0.45             |
| Mammal 4      | large mink               | 1.8              |
| Mammal 5      | small river otter        | 5                |
| Mammal 6      | large river otter        | 15               |
| Bird 1        | small CRLF 1             | 0.0014           |
| Bird 2        | small CRLF 2             | 0.0014           |
| Bird 3        | med CRLF 1               | 0.037            |
| Bird 4        | med CRLF 2               | 0.037            |
| Bird 5        | large CRLF 1             | 0.238            |
| Bird 6        | large CRLF 2             | 0.238            |

**Table 8. Diets of mammals feeding on aquatic biota of the model ecosystem.**

| Trophic level in diet | Diet for:       |                          |            |            |                   |                   |
|-----------------------|-----------------|--------------------------|------------|------------|-------------------|-------------------|
|                       | fog/water shrew | rice rat/star-nosed mole | small mink | large mink | small river otter | large river otter |
| phytoplankton         | 0.0%            | 0.0%                     | 0.0%       | 0.0%       | 0.0%              | 0.0%              |
| zooplankton           | 0.0%            | 0.0%                     | 0.0%       | 0.0%       | 0.0%              | 0.0%              |
| benthic inverts       | 100.0%          | 34.0%                    | 0.0%       | 0.0%       | 0.0%              | 0.0%              |
| filter feeders        | 0.0%            | 33.0%                    | 0.0%       | 0.0%       | 0.0%              | 0.0%              |
| small fish            | 0.0%            | 33.0%                    | 0.0%       | 0.0%       | 0.0%              | 0.0%              |
| medium fish           | 0.0%            | 0.0%                     | 100.0%     | 100.0%     | 100.0%            | 0.0%              |
| large fish            | 0.0%            | 0.0%                     | 0.0%       | 0.0%       | 0.0%              | 100.0%            |

| Table 8. Diets of mammals feeding on aquatic biota of the model ecosystem. |           |        |        |        |        |        |
|----------------------------------------------------------------------------|-----------|--------|--------|--------|--------|--------|
|                                                                            | Diet for: |        |        |        |        |        |
| Total                                                                      | 100.0%    | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

| Table 9. Diets of birds feeding on aquatic biota of the model ecosystem. |              |              |            |            |              |              |
|--------------------------------------------------------------------------|--------------|--------------|------------|------------|--------------|--------------|
| Trophic level in diet                                                    | Diet for:    |              |            |            |              |              |
|                                                                          | small CRLF 1 | small CRLF 2 | med CRLF 1 | med CRLF 2 | large CRLF 1 | large CRLF 2 |
| phytoplankton                                                            | 100.0%       | 0.0%         | 0.0%       | 0.0%       | 0.0%         | 0.0%         |
| zooplankton                                                              | 0.0%         | 0.0%         | 0.0%       | 0.0%       | 0.0%         | 0.0%         |
| benthic invertebrates                                                    | 0.0%         | 100.0%       | 100.0%     | 0.0%       | 100.0%       | 0.0%         |
| filter feeders                                                           | 0.0%         | 0.0%         | 0.0%       | 0.0%       | 0.0%         | 0.0%         |
| small fish                                                               | 0.0%         | 0.0%         | 0.0%       | 100.0%     | 0.0%         | 0.0%         |
| medium fish                                                              | 0.0%         | 0.0%         | 0.0%       | 0.0%       | 0.0%         | 100.0%       |
| large fish                                                               | 0.0%         | 0.0%         | 0.0%       | 0.0%       | 0.0%         | 0.0%         |
| Total                                                                    | 100.0%       | 100.0%       | 100.0%     | 100.0%     | 100.0%       | 100.0%       |

| Table 10. Input parameters and calculations relevant to derivation of C <sub>B</sub> . |                |              |                       |                |            |             |            |
|----------------------------------------------------------------------------------------|----------------|--------------|-----------------------|----------------|------------|-------------|------------|
| Parameter                                                                              | Phyto plankton | Zoo plankton | Benthic Invertebrates | Filter Feeders | Small Fish | Medium Fish | Large Fish |
| Equation A1                                                                            |                |              |                       |                |            |             |            |
| C <sub>B</sub>                                                                         | 0.006828       | 0.00514216   | 0.005558              | 0.003667       | 0.007684   | 0.008397    | 0.01007    |
| C <sub>BD</sub>                                                                        | 0.000000       | 0.00008317   | 0.000217              | 0.000157       | 0.000899   | 0.001732    | 0.003393   |
| C <sub>BR</sub>                                                                        | 0.00682751     | 0.00505899   | 0.00534144            | 0.00350973     | 0.00678523 | 0.00666550  | 0.00668107 |
| C <sub>S</sub>                                                                         | 0.000495       |              |                       |                |            |             |            |
| C <sub>WDP</sub>                                                                       | 0.00000117     |              |                       |                |            |             |            |
| C <sub>WTO</sub>                                                                       | 0.00000260     |              |                       |                |            |             |            |
| k <sub>1</sub>                                                                         | 6387.764       | 42593.960    | 3796.191              | 1695.696       | 757.440    | 338.336     | 151.129    |
| k <sub>2</sub>                                                                         | 2.335346       | 21.853397    | 1.783564              | 1.211767       | 0.276647   | 0.123573    | 0.055198   |
| k <sub>D</sub>                                                                         | 0.000000       | 0.266961     | 0.094721              | 0.046726       | 0.047473   | 0.033608    | 0.023793   |
| k <sub>E</sub>                                                                         | 0.000000       | 0.049903     | 0.012253              | 0.009194       | 0.004663   | 0.004119    | 0.003183   |
| k <sub>G</sub>                                                                         | 0.100000       | 0.012559     | 0.003155              | 0.001991       | 0.001256   | 0.000792    | 0.000500   |
| k <sub>M</sub>                                                                         | 0              | 0            | 0                     | 0              | 0          | 0           | 0          |
| m <sub>0</sub>                                                                         | 1              | 1            | 0.95                  | 0.95           | 0.95       | 0.95        | 1          |
| m <sub>p</sub>                                                                         | 0              | 0            | 0.05                  | 0.05           | 0.05       | 0.05        | 0          |
| Σ (P <sub>i</sub> * C <sub>Di</sub> )                                                  | 0              | 0.006827511  | 0.004118369           | 0.00411837     | 0.00535022 | 0.0066212   | 0.00839744 |
| Φ                                                                                      | 1.00000000     |              |                       |                |            |             |            |
| Equation A2                                                                            |                |              |                       |                |            |             |            |
| X <sub>POC</sub>                                                                       | 0.0000000      |              |                       |                |            |             |            |
| X <sub>DOC</sub>                                                                       | 0.0000000      |              |                       |                |            |             |            |
| K <sub>OW</sub>                                                                        | 56966          |              |                       |                |            |             |            |
| Φ                                                                                      | 1.00000000     |              |                       |                |            |             |            |

| Table 10. Input parameters and calculations relevant to derivation of C <sub>B</sub> . |                |              |                       |                |            |             |            |
|----------------------------------------------------------------------------------------|----------------|--------------|-----------------------|----------------|------------|-------------|------------|
| Parameter                                                                              | Phyto plankton | Zoo plankton | Benthic Invertebrates | Filter Feeders | Small Fish | Medium Fish | Large Fish |
| Equation A4                                                                            |                |              |                       |                |            |             |            |
| C <sub>S</sub>                                                                         | 0.0005         |              |                       |                |            |             |            |
| C <sub>SOC</sub>                                                                       | 0.0124         |              |                       |                |            |             |            |
| C <sub>WDP</sub>                                                                       | 0.00000        |              |                       |                |            |             |            |
| K <sub>OC</sub>                                                                        | 10600          |              |                       |                |            |             |            |
| OC                                                                                     | 4%             |              |                       |                |            |             |            |
| Equation A5                                                                            |                |              |                       |                |            |             |            |
| C <sub>ox</sub>                                                                        | N/A            | 5            |                       |                |            |             |            |
| E <sub>W</sub>                                                                         | N/A            | 0.539746694  |                       |                |            |             |            |
| G <sub>V</sub>                                                                         | N/A            | 0.007891472  | 0.703328201           | 3.14165167     | 14.0332425 | 62.6841919  | 280        |
| k <sub>1</sub>                                                                         | 6387.763783    | 42593.96037  | 3796.190713           | 1695.6961      | 757.439627 | 338.335853  | 151.129074 |
| K <sub>OW</sub>                                                                        | 56966          |              |                       |                |            |             |            |
| W <sub>B</sub>                                                                         | N/A            | 0.0000001    | 0.0001                | 0.001          | 0.01       | 0.1         | 1          |
| Equation A6                                                                            |                |              |                       |                |            |             |            |
| k <sub>1</sub>                                                                         | 6387.763783    | 42593.96037  | 3796.190713           | 1695.6961      | 757.439627 | 338.335853  | 151.129074 |
| k <sub>2</sub>                                                                         | 2.335345624    | 21.85339691  | 1.783564381           | 1.211767       | 0.27664657 | 0.12357349  | 0.05519825 |
| K <sub>BW</sub>                                                                        | 2735.254139    | 1949.077324  | 2128.429314           | 1399.35821     | 2737.93242 | 2737.93242  | 2737.93242 |
| K <sub>OW</sub>                                                                        | 56966          |              |                       |                |            |             |            |
| V <sub>LB</sub>                                                                        | 0.02           | 0.03         | 0.03                  | 0.02           | 0.04       | 0.04        | 0.04       |
| V <sub>NB</sub>                                                                        | 0.08           | 0.12         | 0.21                  | 0.13           | 0.23       | 0.23        | 0.23       |
| V <sub>WB</sub>                                                                        | 0.9            | 0.85         | 0.76                  | 0.85           | 0.73       | 0.73        | 0.73       |
| β                                                                                      | 0.35           | 0.035        |                       |                |            |             |            |
| Equation A7                                                                            |                |              |                       |                |            |             |            |
| k <sub>G</sub>                                                                         | 0.1            | 0.012559432  | 0.003154787           | 0.00199054     | 0.00125594 | 0.00079245  | 0.0005     |
| T                                                                                      | 13             |              |                       |                |            |             |            |
| W <sub>B</sub>                                                                         | N/A            | 0.0000001    | 0.0001                | 0.001          | 0.01       | 0.1         | 1          |
| Equation A8                                                                            |                |              |                       |                |            |             |            |
| C <sub>ox</sub>                                                                        | N/A            | N/A          | N/A                   | 5              | N/A        | N/A         | N/A        |
| C <sub>SS</sub>                                                                        | N/A            | N/A          | N/A                   | 3.00E-05       | N/A        | N/A         | N/A        |
| E <sub>D</sub>                                                                         | N/A            | 0.49576377   |                       |                |            |             |            |
| G <sub>D</sub>                                                                         | N/A            | 5.38E-08     | 1.91E-05              | 9.42E-05       | 9.58E-04   | 6.78E-03    | 4.80E-02   |
| G <sub>V</sub>                                                                         | N/A            | N/A          | N/A                   | 3.14           | N/A        | N/A         | N/A        |
| k <sub>D</sub>                                                                         | 0              | 2.67E-01     | 9.47E-02              | 4.67E-02       | 4.75E-02   | 3.36E-02    | 2.38E-02   |
| K <sub>OW</sub>                                                                        | 56966          |              |                       |                |            |             |            |
| T                                                                                      | N/A            | 13           |                       |                |            |             |            |
| W <sub>B</sub>                                                                         | N/A            | 0.0000001    | 0.0001                | 0.001          | 0.01       | 0.1         | 1          |
| Equation A9                                                                            |                |              |                       |                |            |             |            |
| C <sub>ox</sub>                                                                        | N/A            | N/A          | N/A                   | 5              | N/A        | N/A         | N/A        |

| Table 10. Input parameters and calculations relevant to derivation of $C_B$ . |                |              |                       |                |            |             |            |
|-------------------------------------------------------------------------------|----------------|--------------|-----------------------|----------------|------------|-------------|------------|
| Parameter                                                                     | Phyto plankton | Zoo plankton | Benthic Invertebrates | Filter Feeders | Small Fish | Medium Fish | Large Fish |
| $C_{SS}$                                                                      | N/A            | N/A          | N/A                   | 3.00E-05       | N/A        | N/A         | N/A        |
| $E_D$                                                                         | N/A            | 0.4958       |                       |                |            |             |            |
| $G_D$                                                                         | N/A            | 0.0000       | 0.0000                | 0.0000942      | 0.0010     | 0.0068      | 0.0480     |
| $G_F$                                                                         | N/A            | 0.000000     | 0.000013              | 0.000066       | 0.000644   | 0.004403    | 0.030845   |
| $G_V$                                                                         | N/A            | N/A          | N/A                   | 3.1417         | N/A        | N/A         | N/A        |
| $K_E$                                                                         | 0              | 0.0499       | 0.0123                | 0.0092         | 0.0047     | 0.0041      | 0.0032     |
| $K_{GB}$                                                                      | N/A            | 0.2659       | 0.1843                | 0.2803         | 0.1461     | 0.1887      | 0.2081     |
| $K_{OW}$                                                                      | N/A            | 56966        |                       |                |            |             |            |
| $T$                                                                           | N/A            | 13           |                       |                |            |             |            |
| $V_{LB}$                                                                      | N/A            | 0.03         | 0.03                  | 0.02           | 0.04       | 0.04        | 0.04       |
| $V_{LD}$                                                                      | N/A            | 0.02         | 0.01650               | 0.0165         | 0.03       | 0.035       | 0.04       |
| $V_{LG}$                                                                      | N/A            | 0.007966     | 0.005876              | 0.005876       | 0.003571   | 0.004311    | 0.004979   |
| $V_{NB}$                                                                      | N/A            | 0.12         | 0.21                  | 0.13           | 0.23       | 0.23        | 0.23       |
| $V_{ND}$                                                                      | N/A            | 0.08         | 0.0796                | 0.0796         | 0.165      | 0.22        | 0.23       |
| $V_{NG}$                                                                      | N/A            | 0.03186      | 0.02835               | 0.02835        | 0.09819    | 0.13548     | 0.14315    |
| $V_{WB}$                                                                      | N/A            | 0.85         | 0.76                  | 0.85           | 0.73       | 0.73        | 0.73       |
| $V_{WD}$                                                                      | N/A            | 0.9          | 0.9039                | 0.9039         | 0.805      | 0.745       | 0.73       |
| $V_{WG}$                                                                      | N/A            | 0.9602       | 0.9658                | 0.9658         | 0.8982     | 0.8602      | 0.8519     |
| $W_B$                                                                         | N/A            | 0.0000001    | 0.0001                | 0.001          | 0.01       | 0.1         | 1          |
| $\beta$                                                                       | N/A            | 0.035        | 0.035                 | 0.035          | 0.035      | 0.035       | 0.035      |
| $\epsilon_L$                                                                  | N/A            | 0.72         | 0.75                  | 0.75           | 0.92       | 0.92        | 0.92       |
| $\epsilon_N$                                                                  | N/A            | 0.72         | 0.75                  | 0.75           | 0.6        | 0.6         | 0.6        |
| $\epsilon_W$                                                                  | N/A            | 0.25         | 0.25                  | 0.25           | 0.25       | 0.25        | 0.25       |
| Calculation of BCF values                                                     |                |              |                       |                |            |             |            |
| $C_{BCF}$                                                                     | 0.007119867    | 0.005073448  | 0.005387587           | 0.00354213     | 0.00693039 | 0.00693039  | 0.00712684 |

See Appendix A of KABAM user's guide and technical documentation for equation details.

| Table 11. Estimated concentrations of endosulfan in ecosystem components. |                                |                                              |                                     |                                            |
|---------------------------------------------------------------------------|--------------------------------|----------------------------------------------|-------------------------------------|--------------------------------------------|
| Ecosystem Component                                                       | Total concentration (µg/kg-ww) | Lipid normalized concentration (µg/kg-lipid) | Contribution due to diet (µg/kg-ww) | Contribution due to respiration (µg/kg-ww) |
| Water (total)*                                                            | 2.603                          | N/A                                          | N/A                                 | N/A                                        |
| Water (freely dissolved)*                                                 | 2.603                          | N/A                                          | N/A                                 | N/A                                        |
| Sediment (pore water)*                                                    | 1.168                          | N/A                                          | N/A                                 | N/A                                        |
| Sediment (in solid)**                                                     | 495                            | N/A                                          | N/A                                 | N/A                                        |
| Phytoplankton                                                             | 6,828                          | 341376                                       | N/A                                 | 6,827.51                                   |

**Table 11. Estimated concentrations of endosulfan in ecosystem components.**

| <b>Ecosystem Component</b> | <b>Total concentration<br/>(µg/kg-ww)</b> | <b>Lipid normalized concentration<br/>(µg/kg-lipid)</b> | <b>Contribution due to diet<br/>(µg/kg-ww)</b> | <b>Contribution due to respiration<br/>(µg/kg-ww)</b> |
|----------------------------|-------------------------------------------|---------------------------------------------------------|------------------------------------------------|-------------------------------------------------------|
| Zooplankton                | 5,142                                     | 171405                                                  | 83.17                                          | 5,058.99                                              |
| Benthic Invertebrates      | 5,558                                     | 185276                                                  | 216.84                                         | 5,341.44                                              |
| Filter Feeders             | 3,667                                     | 183354                                                  | 157.35                                         | 3,509.73                                              |
| Small Fish                 | 7,684                                     | 192103                                                  | 898.88                                         | 6,785.23                                              |
| Medium Fish                | 8,397                                     | 209936                                                  | 1,731.94                                       | 6,665.50                                              |
| Large Fish                 | 10,074                                    | 251858                                                  | 3,393.26                                       | 6,681.07                                              |

\* Units: µg/L; \*\*Units: µg/kg-dw

**Table 12. Total BCF and BAF values of endosulfan in aquatic trophic levels.**

| <b>Trophic Level</b>  | <b>Total BCF<br/>(µg/kg-ww)/(µg/L)</b> | <b>Total BAF<br/>(µg/kg-ww)/(µg/L)</b> |
|-----------------------|----------------------------------------|----------------------------------------|
| Phytoplankton         | 2735                                   | 2623                                   |
| Zooplankton           | 1949                                   | 1975                                   |
| Benthic Invertebrates | 2070                                   | 2135                                   |
| Filter Feeders        | 1361                                   | 1409                                   |
| Small Fish            | 2662                                   | 2952                                   |
| Medium Fish           | 2662                                   | 3226                                   |
| Large Fish            | 2738                                   | 3870                                   |

**Table 13. Lipid-normalized BCF, BAF, BMF and BSAF values of endosulfan in aquatic trophic levels.**

| <b>Trophic Level</b>  | <b>BCF<br/>(µg/kg-lipid)/(µg/L)</b> | <b>BAF<br/>(µg/kg-lipid)/(µg/L)</b> | <b>BMF<br/>(µg/kg-lipid)/(µg/kg-lipid)</b> | <b>BSAF<br/>(µg/kg-lipid)/(µg/kg-OC)</b> |
|-----------------------|-------------------------------------|-------------------------------------|--------------------------------------------|------------------------------------------|
| Phytoplankton         | 136763                              | 131147                              | N/A                                        | 28                                       |
| Zooplankton           | 64969                               | 65849                               | 0.50                                       | 14                                       |
| Benthic Invertebrates | 68992                               | 71178                               | 1.09                                       | 15                                       |
| Filter Feeders        | 68039                               | 70440                               | 1.08                                       | 15                                       |
| Small Fish            | 66562                               | 73800                               | 1.08                                       | 16                                       |
| Medium Fish           | 66562                               | 80652                               | 1.11                                       | 17                                       |
| Large Fish            | 68448                               | 96757                               | 1.20                                       | 20                                       |

| <b>Table 14. Calculation of EECs for mammals and birds consuming fish contaminated by endosulfan.</b> |                              |                                                        |                                                        |                                    |                                |                            |
|-------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------|--------------------------------|----------------------------|
| <b>Wildlife Species</b>                                                                               | <b>Biological Parameters</b> |                                                        |                                                        |                                    | <b>EECs (pesticide intake)</b> |                            |
|                                                                                                       | <b>Body Weight (kg)</b>      | <b>Dry Food Ingestion Rate (kg-dry food/kg-bw/day)</b> | <b>Wet Food Ingestion Rate (kg-wet food/kg-bw/day)</b> | <b>Drinking Water Intake (L/d)</b> | <b>Dose Based (mg/kg-bw/d)</b> | <b>Dietary Based (ppm)</b> |
| <b>Mammalian</b>                                                                                      |                              |                                                        |                                                        |                                    |                                |                            |
| fog/water shrew                                                                                       | 0.02                         | 0.140                                                  | 0.585                                                  | 0.003                              | 3.253                          | 5.56                       |
| rice rat/star-nosed mole                                                                              | 0.1                          | 0.107                                                  | 0.484                                                  | 0.011                              | 2.727                          | 5.64                       |
| small mink                                                                                            | 0.5                          | 0.079                                                  | 0.293                                                  | 0.048                              | 2.463                          | 8.40                       |
| large mink                                                                                            | 1.8                          | 0.062                                                  | 0.229                                                  | 0.168                              | 1.925                          | 8.40                       |
| small river otter                                                                                     | 5.0                          | 0.052                                                  | 0.191                                                  | 0.421                              | 1.605                          | 8.40                       |
| large river otter                                                                                     | 15.0                         | 0.042                                                  | 0.157                                                  | 1.133                              | 1.583                          | 10.07                      |
| <b>Avian</b>                                                                                          |                              |                                                        |                                                        |                                    |                                |                            |
| small CRLF 1                                                                                          | 0.0014                       | 0.577                                                  | 5.767                                                  | 0.001                              | 39.3733                        | 6.83                       |
| small CRLF 2                                                                                          | 0.0014                       | 0.577                                                  | 2.403                                                  | 0.001                              | 13.3567                        | 5.56                       |
| med CRLF 1                                                                                            | 0.037                        | 0.184                                                  | 0.766                                                  | 0.006                              | 4.2599                         | 5.56                       |
| med CRLF 2                                                                                            | 0.037                        | 0.184                                                  | 0.681                                                  | 0.006                              | 5.2347                         | 7.68                       |
| large CRLF 1                                                                                          | 0.238                        | 0.096                                                  | 0.400                                                  | 0.023                              | 2.2247                         | 5.56                       |
| large CRLF 2                                                                                          | 0.238                        | 0.096                                                  | 0.356                                                  | 0.023                              | 2.9876                         | 8.40                       |

| <b>Table 15. Calculation of toxicity values for mammals and birds consuming fish contaminated by endosulfan.</b> |                              |                                   |                              |                                   |
|------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------|------------------------------|-----------------------------------|
| <b>Wildlife Species</b>                                                                                          | <b>Toxicity Values</b>       |                                   |                              |                                   |
|                                                                                                                  | <b>Acute</b>                 |                                   | <b>Chronic</b>               |                                   |
|                                                                                                                  | <b>Dose Based (mg/kg-bw)</b> | <b>Dietary Based (mg/kg-diet)</b> | <b>Dose Based (mg/kg-bw)</b> | <b>Dietary Based (mg/kg-diet)</b> |
| <b>Mammalian</b>                                                                                                 |                              |                                   |                              |                                   |
| fog/water shrew                                                                                                  | 21.00                        | N/A                               | 1.57                         | 15                                |
| rice rat/star-nosed mole                                                                                         | 14.24                        | N/A                               | 1.07                         | 15                                |

**Table 15. Calculation of toxicity values for mammals and birds consuming fish contaminated by endosulfan.**

|                   | Toxicity Values |        |      |    |
|-------------------|-----------------|--------|------|----|
| small mink        | 9.39            | N/A    | 0.70 | 15 |
| large mink        | 6.64            | N/A    | 0.50 | 15 |
| small river otter | 5.14            | N/A    | 0.39 | 15 |
| large river otter | 3.91            | N/A    | 0.29 | 15 |
| <b>Avian</b>      |                 |        |      |    |
| small CRLF 1      | 9.76            | 805.00 | N/A  | 30 |
| small CRLF 2      | 9.76            | 805.00 | N/A  | 30 |
| med CRLF 1        | 15.94           | 805.00 | N/A  | 30 |
| med CRLF 2        | 15.94           | 805.00 | N/A  | 30 |
| large CRLF 1      | 21.08           | 805.00 | N/A  | 30 |
| large CRLF 2      | 21.08           | 805.00 | N/A  | 30 |

**Table 16. Calculation of RQ values for mammals and birds consuming fish contaminated by endosulfan.**

| Wildlife Species         | Acute      |               | Chronic    |               |
|--------------------------|------------|---------------|------------|---------------|
|                          | Dose Based | Dietary Based | Dose Based | Dietary Based |
| <b>Mammalian</b>         |            |               |            |               |
| fog/water shrew          | 0.155      | N/A           | 2.066      | 0.371         |
| rice rat/star-nosed mole | 0.191      | N/A           | 2.553      | 0.376         |
| small mink               | 0.262      | N/A           | 3.497      | 0.560         |
| large mink               | 0.290      | N/A           | 3.865      | 0.560         |
| small river otter        | 0.312      | N/A           | 4.160      | 0.560         |
| large river otter        | 0.405      | N/A           | 5.401      | 0.672         |
| <b>Avian</b>             |            |               |            |               |
| small CRLF 1             | 4.036      | 0.008         | N/A        | 0.228         |
| small CRLF 2             | 1.369      | 0.007         | N/A        | 0.185         |

| Table 16. Calculation of RQ values for mammals and birds consuming fish contaminated by endosulfan. |       |       |         |       |
|-----------------------------------------------------------------------------------------------------|-------|-------|---------|-------|
|                                                                                                     | Acute |       | Chronic |       |
| med CRLF 1                                                                                          | 0.267 | 0.007 | N/A     | 0.185 |
| med CRLF 2                                                                                          | 0.328 | 0.010 | N/A     | 0.256 |
| large CRLF 1                                                                                        | 0.106 | 0.007 | N/A     | 0.185 |
| large CRLF 2                                                                                        | 0.142 | 0.010 | N/A     | 0.280 |