

## **Appendix C. PRZM Scenario Revision Log**

# **PRZM Scenario Revision Log**

**March 02, 2006**

This revision log documents changes made to PRZM scenario files under the following GSA contracts:

GS-00F-0019L, Order No. 4W-1996-NBLX (October 1, 2004 to October 31, 2005)

GS-00F-0019L, Order No. EP06H000149 (November 14, 2005 to November 13, 2006).

The log documents what changes have been made as well as the date the change was made. The log includes comments from both internal and external EFED review (external comments were provided by Crop Life America). Revisions are grouped in alphabetical order by scenario. Revisions are further grouped based on where the change was made (metadata, summary file, or both the metadata and summary file).

## CAalfalfaIC

### Both Meta and Summary

- # ANETD changed from 15 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Emergence Date changed from Jan-10 to Jan-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # IRRIGATION: Deleted quote from summary file regarding PCDEPL and added to Metadata paragraph: "Most farm advisors in CA said water is always applied to crops before 50% depletion" (01/12/06)
- # IRRIGATION: IRTYP changed from 1 to 4. Metadata indicates "nearly all alfalfa is irrigated in California by flooding" The IRTYP change reflects updated "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 88 and FLEACH of 0.1 (01/12/06)
- # IRRIGATION: RATEAP changed from 0.4 to 0.062 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005 (01/12/06)
- # SFAC changed from 0.45 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in San Joaquin or Fresno Counties.  
http://www.weather.gov/climate (NOWData) (02/14/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Inconsistency

- # Surface Condition of Crop After Harvest (ICNAH) is set to 1. There are two other alfalfa scenarios where this is also set to 1 and three other scenarios where this is set to 3. (10/31/05)

### Metadata Change

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. (01/16/06)
- # MetFile changed to match txt file --from W23155/W23232 to Fresno, W93193. Start and End dates changed to 1961-1990. Justification for the use of a more distant met station was added to the
- # NCPDS changed from 36 to 30 to match MetFile. Reference to MetFile changed as above also.
- # THEFC Horizons 1,2 and 3 were switched. Horizon 1,2 changed to 0.42 and Horizon 3 changed to 0.44.

### Summary File Change

- # DPN of Horizon 3 was changed from 15.7 to 1 according to guidance. (10/31/05)
- # First RUSLE date changed to Jan-16, Dates and C factors moved. (10/31/05)
- # HTMAX changed from 45 to 50 to be consistent with other alfalfa scenarios and table 5.16 of Carsel.
- # Record9E inserted. 2nd CN=88 applied to cropping, CN=90 for non-cropping period. (10/31/05)

## CLA Scenario Comments: (CAalfalfaIC)

**CLA- Documentation states that the crop is planted early in the year but maintained on a 4 to 5 year cultivation cycle between new plantings. The PRZM summary file has the crop emerging on Jan. 10 of each year, maturing on December 28 and harvested on December 31 of each simulation year. There are 3 to 5 cuttings per year.**

EFED- No Comment

- # SRC- No changes made to scenario. Multi harvest crops will be treated as a normal crop with an initial emergence and final maturity/harvest dates. (01/10/06)

### Metadata Change

**CLA- The PRZM summary file lists the number of cropping periods as equal to 20 while the documentation lists the number of cropping periods as 36.**

EFED- No Comment

- # SRC- NCPDS: In summary file, NCPDS was 30. Metadata was changed from 36 to 30. (01/12/06)

**CLA- Horizon 3, field capacity in document = 0.42, field capacity in PRZM summary file = 0.44**

EFED- No Comment

- # SRC- Metadata value converted to match summary file value. (01/10/06)

**CLA- Horizon 2, field capacity in document = 0.44, field capacity in PRZM summary file =0.42**

EFED- No Comment

# SRC- Metadata value converted to match summary file value. (01/10/06)

**CLA- Horizon 1, field capacity in document = 0.44, field capacity in PRZM summary file = 0.42.**

EFED- No Comment

# SRC- Metadata value converted to match summary file value. (01/10/06)

#### Summary File Change

**CLA- Typo in PRZM summary file, horizon number 4 listed as horizon number.**

EFED- No Comment

# SRC- HORIZN: In summary file, HORIZN for Horizon #4 changed from 3 to 4. (01/10/06)

~~~~~End of CAalfalfaIC Revisions ~~~~~

## **CAalmondIC**

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 2 changed from 3.5 to 1. DPN of Horizon 3 changed from 30 to 5. (10/31/05)
- # Emergence Date changed from Jan-18 to Jan-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # IRRIGATION: Deleted quote from summary file regarding PCDEPL and added to Metadata paragraph: "Most farm advisors in CA said water is always applied to crops before 50% depletion" (01/12/06)
- # IRRIGATION: IRTYP changed from 1 to 4 to update to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Metadata indicated: "Based on recommendations from farm advisors for general flooding for crop irrigation." Metadata also indicated "all types of irrigation are used."
- # IRRIGATION: RATEAP changed from 0.4 to 0.121 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 79 and FLEACH of 0.1 (01/12/06)
- # SFAC changed from 0.55 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in San Joaquin or Sacramento Counties.  
<http://www.weather.gov/climate> (NOWData) (02/14/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). (02/01/06)

### Metadata Change

- # NCPDS changed from 36 to 30 in order to match Meteorological file. (10/31/05)
- # Start and End Dates of Meteorological file changed to 1961-1990. (10/31/05)

### Summary File Change

- # Pan Factor (PFAC) was changed from 0.7 to 0.73 to more closely match the map in the guidance (Figure 5.1 in the Manual) for a more northern Central Valley. (10/31/05)
- # RUSLE dates and C factors moved so that 1601 is the first date, RECORD9E inserted with 79 for cropping prd and 84 for non-cropping prd. (10/31/05)
- # THEFC for Horizon 3 changed from 0.1 to 0.23 to match MetaData File which appeared to be more accurate (more consistent with values for THETO). (10/31/05)

## **CLA Scenario Comments: (CAalmondIC)**

### Both Meta and Summary

**CLA- In CA tomato and almond scenarios, some subsurface horizons have anomalous values with WP=FC. This may give rise to erroneous output. It is suggested that the Rauls and Brakensiek method recommended by the PRZM user manual be used to calculate WP and FC.**

EFED- No Comment

- # SRC- THEWP (wilting point) changed from 0.23 to 0.095. PRZM Guidance Table 5-25 for sandy loam. The old value of 0.23 was equal to the field capacity and was too high for a wilting point for a sandy loam according to Table 5-25 in the Guidance. The field capacity value is within the acceptable range in Table 5-25. (01/30/06)

**CLA- Initial surface condition is listed as residue, but documentation states that the floor of almond groves are kept smooth and clear to facilitate collection of the nuts after harvesting". Should this be an initial condition of fallow?**

EFED- No Comment

- # SRC- (ISCOND = Initial surface condition)  
The comment in the summary file associated with this parameter states:"The orchard would have some grass, which would be mowed (and removed before harvest). ISCOND changed to 1 (fallow). See comment below for more detail.

No source is indicated for the comment which is referenced by CLA regarding the status of the floor of the almond groves. The metadata was modified to cite The USDA National Information System (<http://www.ipmcenters.org/cropprofiles/>), which Indicates "Orchard floor management is of particular importance to an almond grower because the crop is picked up off the soil surface after being knocked from the trees and swept into windrows. Whether an orchard is tilled, non-tilled, herbicide-treated, or cover-cropped, a primary consideration when performing any cultural operation during the year must be to ensure that the orchard floor is the best possible condition for harvesting"  
Because of the nature of almond harvesting, all material is removed, therefore ISCOND should be set to 1. (01/10/06)

#### Metadata Change

**CLA- USLEC C factor range in documentation is 0.34 - 0.221, but the range in the PRZM summary file is 0.064 - 0.221.**

EFED- No Comment

- # SRC- USLEC factor adjusted: Low bound in metadata changed from 0.34 to 0.034. (01/10/06)

#### Summary File Change

**CLA- In the PRZM summary file, horizon 3 of the soil profile has the initial water content (THETO) equal to 0.23, the field capacity (THEFC) equal to 0.1, and the wilting point (THEWP) equal to 0.23. Most likely, the field capacity and wilting point values are reversed and the wilting point value in the documentation should be 0.1.**

EFED- No Comment

- # SRC- THEFC for Horizon 3 changed from 0.1 to 0.23 to match MetaData File which appeared to be more accurate (more consistent with values for THETO). (01/10/06)

~~~~~End of CAalmondIC Revisions ~~~~~

## **CAcitrusIC**

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 2 changed from 17.3 to 1 (10/31/05)
- # Emergence Date changed from Jan-02 to Jan-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # IRRIGATION: Deleted quote from summary file regarding PCDEPL and added to Metadata paragraph: "Most farm advisors in CA said water is always applied to crops before 50% depletion" (01/12/06)
- # IRRIGATION: FLEACH changed from 0.1 to 0 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Default value for drip or micro-irrigation methods.
- # IRRIGATION: RATEAP changed from 0.4 to 0.056 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 79 and FLEACH of 0 (01/12/06)

- # Maturity date changed from Jan 3 to Jan 2 to model continuous maturity of this evergreen crop.
- # Pan Factor (PFAC) was changed from 0.7 to 0.73 to be consistent with guidance (Figure 5.1 in the Manual) and with other Fresno scenarios. (10/31/05)
- # SFAC changed from 0.55 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in Fresno or Bakersfield Counties.  
<http://www.weather.gov/climate> (NOWData) (02/14/06)

#### Metadata Change

- # AMXDR: metadata changed to justify difference in value between other citrus scenario. No change made to parameter value. (02/03/06)
- # Changed Meteorological File Start and End dates to 1961/1990 (10/31/05)
- # Changed NCPDS from 36 to 30 in metadata. (10/31/05)
- # Meteorological station selection: Provided justification in the metadata for why the scenario is not associated with the closest available station. (02/09/06)
- # RUSLE dates didn't need to be adjusted. (10/31/05)

#### Summary File Change

- # Record 9E inserted using CN=79 for cropping period. (10/31/05)

### **CLA Scenario Comments: (CAcitrusIC)**

#### **CLA- This scenario "crashed" when run using PRZM3.12.**

EFED- Correcting the cropping period in the PRZM summary file should alleviate this problem

- # SRC- SRC was unable to reproduce the crash. (10/31/05)

#### **CLA- Due to the selected cropping dates, citrus is flood irrigated year round in the simulations.**

EFED- Correcting the cropping period in the PRZM summary file will alleviate this problem.

- # SRC- The NCPDS value = 30 in the CAcitrusIC.txt file, which reflects the meteorological data. NCPDS was not changed to 36. (10/31/05)

#### **CLA- Irrigation is simulated as flood while the documentation states that irrigation is by low-volume drip, micro-sprinkler, furrow and overhead sprinkler.**

EFED- The write up in the documentation file said "mostly" by low-volume drip, microsprinkler, furrow and overhead sprinkler. However, talking with the County extension agent (cited under remark) as indicated in the documentation Table the irrigation is correctly simulated as flood.

- # SRC- IRRIGATION: IRTYP changed from 1 to 4 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Metadata states: "Irrigation is mostly by low-volume drip or micro-sprinkler systems, although furrow and overhead sprinklers are also used." (10/31/05)

#### **CLA- In the documentation, the number of cropping periods is listed as 36 which is inconsistent with the single cropping period listed in the PRZM summary file.**

EFED- The PRZM summary file is being corrected to reflect the documentation file which lists 36 cropping periods.

- # SRC- The NCPDS value = 30 in the CAcitrusIC.txt file, which reflects the meteorological data. NCPDS was not changed to 36. (10/31/05)

#### **CLA- The initial surface condition (ISCOND) is set to residue. Shouldn't this be cropping for citrus since it is continually transpiring under CA conditions?**

EFED- For cropping condition the land is harvested, tilled, and prepared after every crop. The continual presence of orange grove most closely resemble the "residue" condition. The ISCOND is correctly set in the scenario.

- # SRC- No change required. (10/31/05)

#### **Both Meta and Summary**

**CLA- In the PRZM summary file, it lists that there is one cropping period with an emergence date of 1/2/1948, a maturity date of 1/3/1948, and the harvest date as 12/31/1948. Shouldn't the harvest year be 1983 (i.e., the last year of the simulation)?**

EFED- The PRZM summary file is being corrected to reflect the documentation file which lists 36 cropping periods.

- # SRC- The NCPDS value = 30 in the CAcitrusIC.txt file, which reflects the meteorological data. NCPDS was not changed to 36. All dates were set to the first year of the meteorological file (1961).

#### Summary File Change

**CLA- In the PRZM summary file, the USLELS (1) and USLEP (0.21) appear to be reversed from what they should be (i.e., USLELS = 0.21 and USLEP = 1, as per the documentation).**

EFED- The documentation file reflects the correct values for this scenario, the PRZM summary file is being corrected to match the values in the documentation file.

- # SRC- CAcitrusIC.txt was revised as requested. USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . (10/31/05)

~~~~~End of CAcitrusIC Revisions ~~~~~

## **CAcornC**

### Both Meta and Summary

- # ANETD changed from 15 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Emergence Date changed from Apr-8 to Apr-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.45 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in San Joaquin or Sacramento Counties. <http://www.weather.gov/climate> (NOWData) (02/14/06)

### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # Meteorological Start and End dates changed to 1961-1990. (10/31/05)
- # NCPDS changed to 30 to reflect MetFile. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### Summary File Change

- # RECORD9E inserted using 86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that 0104 is the first date. (10/31/05)

## **CLA Scenario Comments: (CAcornC)**

**CLA- Horizon 4 compartment thickness is 2 in the PRZM summary file but 6 in the documentation**

EFED- The documentation should be revised

- # SRC- The documentation read 2 cm. No action taken. (10/31/05)

**CLA- Horizon 4 thickness is 38 cm in the PRZM summary file but 48 cm in the documentation.**

EFED- The documentation should be revised

- # SRC- The documentation read 38 cm. No action taken. (10/31/05)

**CLA- Horizon 3 thickness is 40 cm in the PRZM summary file but 30 cm in the documentation**

EFED- The documentation should be revised

- # SRC- The documentation read 40 cm. No action taken. (10/31/05)

~~~~~End of CAcornC Revisions ~~~~~

## **CAcottonIC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Crop Emergence Date changed from May-05 to May-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (02/14/06)
- # IRRIGATION: Deleted quote from summary file regarding PCDEPL and added to Metadata paragraph: "Most farm advisors in CA said water is always applied to crops before 50% depletion" (01/12/06)
- # IRRIGATION: IRTYP changed from 1 to 4 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Metadata states: "Irrigation is mostly by flooding." (01/12/06)
- # IRRIGATION: RATEAP changed from 0.4 to 0.074 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 86 and FLEACH of 0.1 (01/12/06)
- # Pan Factor (PFAC) was changed from 0.7 to 0.73, as per guidance (Figure 5.1 in the Manual). (10/31/05)
- # SFAC changed from 0.5 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in Fresno County. <http://www.weather.gov/climate> (NOWData)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).
- # USLEP: Value changed from 0.5 to 0.6 to be consistent with EPA (2004) guidance for slope range.

### **Metadata Change**

- # AMXDR: updated metadata source to justify inconsistencies between different cotton scenarios due to different sources. Parameter value did not change. (01/16/06)
- # Meteorological Dates change to 1961-1990. (10/31/05)

### **Summary File Change**

- # DPN of Horizon 2 changed from 6.5 to 2. DPN of Horizon 3 changed from 16 to 4. (01/03/06)
- # HTMAX: changed from 120 to 122. Extension agent (TX) indicated that max height can be 4 feet (122 cm). Consistent with other cotton scenarios except NC (HTMAX=CORED=100). (02/06/06)
- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE Dates and C Factors moved so that May-01 is the first date. (10/31/05)

## **CLA Scenario Comments: (CAcottonIC)**

### **Metadata Change**

#### **CLA- No Comment**

EFED- Change USLEC C factor range in summary file to 0.054 to 0.412 (I GOT THIS WRONG. THE SUMMARY FILE IS CORRECT. DOCUMENTATION NEEDS CHANGE)

- # SRC- USLE C Factor in Metadata changed from 0.54-0.412 to 0.054-0.412. (10/31/05)

#### **CLA- No Comment**

EFED- Change crop maturity date in documentation to Sept 20 (FIX DOCUMENTATION)

- # SRC- Date of Crop Maturity in Metadata changed from Jan-3 to Sept-20 (matches CAcottonIC.txt file). (10/31/05)

#### **CLA- No Comment**

EFED- Change number of cropping periods in summary file from 1 to 36 (THIS COMMENT IS INCORRECT. THE # of cropping periods in the scenario is 30 consistent with new met files. CHECK DOCUMENTATION TO MAKE SURE IT SAYS 30)

- # SRC- NCPDS value in Metadata changed from 36 to 30 (matches CAcottonIC.txt file). (10/31/05)

~~~~~End of CAcottonIC Revisions ~~~~~

## **CAfruitIC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)



- # DPN for Horizon 3 changed from 14.8 to 2 (also consistent with CAsugarbeetIC.txt which had the same soil type). (10/31/05)
- # IRRIGATION: Deleted quote from summary file regarding PCDEPL and added to Metadata paragraph: "Most farm advisors in CA said water is always applied to crops before 50% depletion" (01/12/06)
- # IRRIGATION: IRTYP changed from 1 to 4 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Majority of peaches, plums and kiwi are furrow irrigated according to extension agent, Harry Andris, Fresno County Extension, (559-456-7557) on Feb 24, 2006. (01/12/06)
- # IRRIGATION: RATEAP changed from 0.4 to 0.056 according to Table 3 for Furrow Irrigation and according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN
- # SLP changed from 9 to 2% based on conversation with extension agent. Harry Andris indicated that plum, peach and kiwi crops are grown on flat lands which are laser leveled. (02/24/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # All soil properties updated to match Text file (CAfruitIC.txt), including name of Soil Series from Exeter Loam to Exeter Fine Sandy Loam. (10/31/05)
- # Changed Meteorological File Start and End dates to 1961/1990. (10/31/05)
- # Changed NCPDS from 36 to 30. (10/31/05)
- # Met Station: Changed metstation in metadata to W93193 (Fresno) to harmonize with scenario file and other central valley scenarios. Deleted reference in metadata to Northern and Southern Central valley

#### Summary File Change

- # First RUSLE date changed to emergence date, and previous dates moved to end. (10/31/05)
- # NRCS Rainfall Region (IREG) changed from 2 to 1 to match guidance and the other scenarios in the region. (10/31/05)
- # Record 9E added with CN=79 for cropping period and CN=84 for non-cropping period. (10/31/05)

### **CLA Scenario Comments: (CAfruitIC)**

**CLA- The simulation models flood irrigation on a 9% slope. Flood irrigation is on flat slopes in California since water is so expensive. Higher slopes use other methods of irrigation.**

EFED- No Comment

- # SRC- See metadata and IRTYP comment. SLP changed to 2%. Irrigation parameters changed to model furrow irrigation according to "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. See additional comments for CA Fruit. (01/10/06)

#### Both Meta and Summary

**CLA- The non-citrus fruit represents tree crops like apples, pears, peaches, plums and kiwi. The cropping dates are listed as annual emergence on January 21, maturity on June 21 and harvest on August 1 of each simulation year. This has maturity root transpiration for only 2 months a year. Is this a correct assumption or should the maturity date be earlier in the year?**

EFED- No Comment

- # SRC- Date of crop emergence changed from Jan-21 to Jan-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). Maturity date changed to April-1 to represent time when tree leaves are mature. This date was based on advice of extension agent.

#### Metadata Change

**CLA- Soil profiles are completely different between PRZM summary file and the documentation.**

The soil profile in the PRZM summary file is:

Horizon 1: THKNS = 10, DPN = 0.1, BD = 1.7, THETO = 0.218,

THEFC = 0.218, THEWP = 0.078, and OC = 0.58.

Horizon 2: THKNS = 16, DPN = 4, BD = 1.7, THETO = 0.218,

THEFC = 0.218, THEWP = 0.078, and OC = 0.58.

Horizon 3: THKNS = 74, DPN = 14.8, BD = 1.8, THETO = 0.248,

THEFC = 0.248, THEWP = 0.108, and OC = 0.174.

The soil profile in the documentation is:

Horizon 1: THKNS = 10, DPN = 0.1, BD = 1.59, THETO = 0.160,

THEFC = 0.16, THEWP = 0.06, and OC = 0.46.

Horizon 2: THKNS = 173, DPN = 17.3, BD = 1.76, THETO = 0.200,

THEFC = 0.2, THEWP = .11, and OC = 0.19

EFED- No Comment

- # SRC- Previously addressed: All soil properties in metadata updated to match Text file, including name of Soil Series from Exeter Loam to Exeter Fine Sandy Loam. Soil horizon 3 was added and BD, THETO, THEFC, THEWP and OC parameters were adjusted to match scenario file values as listed by CLA comment. (01/10/06)

**CLA- The total soil depth is listed as 100 cm in the PRZM summary file but 183 cm in the**

EFED- No Comment

- # SRC- Previously addressed: CORED changed from 183 to 100 in metadata file . (01/10/06)

~~~~~End of CAfruitIC Revisions ~~~~~

## **CAgrapesIC**

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 2 changed from 30 to 5. (10/31/05)
- # IRRIGATION: copied quote from summary file header regarding irrigation PCDEPL and added to Metadata paragraph: "Almost all vineyards use drip irrigation, and irrigate when the soil reaches 35-50% depletion." (01/12/06)
- # IRRIGATION: FLEACH changed from 0.1 to 0 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Default value for drip irrigation method. (01/12/06)
- # IRRIGATION: IRTYP changed from 1 to 4 according to Table 3 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Metadata states: "Irrigation is mainly by drip irrigation." USDA Crop Profile states: "drip irrigation has recently become the preferred method of irrigation, though furrow irrigation still dominates in the southern San Joaquin Valley." (01/12/06)
- # IRRIGATION: RATEAP changed from 0.4 to 0.056 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 79 and FLEACH of 0 (01/12/06)
- # SFAC changed from 0.55 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in Fresno County. <http://www.weather.gov/climate>
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # Meteorological Start and End dates changed to 1961-1990. (10/31/05)

### Summary File Change

- # HTMAX: TEXT file indicated that the HTMAX value corresponded to a nominal value. The max height indicated was 8'. Therefore, the HTMAX was changed to 244 cm. This value is inconsistent with the HTMAX of the NY grape scenario due to different sources. (02/03/06)
- # Pan Factor (PFAC) was changed from 0.70 to 0.73 to more closely reflect Figure 5.1 in the guidance (Figure 5.1 in the Manual). (10/31/05)
- # RECORD9E inserted using 79 for the cropping prd and 84 for the non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that 0102 is the first date. (10/31/05)

## **CLA Scenario Comments: (CAgrapesIC)**

Both Meta and Summary

**CLA- The grapes are modeled as flood irrigated but the documentation states that the irrigation is by drip or sprinkler.**

EFED- No Comment

- # SRC- Irrigation parameters have been updated according to new guidance, "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Grapes are modeled with drip irrigation. (01/10/06)

Metadata Change

**CLA- The documentation lists 36 cropping periods with crop emergence on February 1 of each simulation year, maturity on August 15, and harvest on August 31 of each simulation year. Since grapes are in continuous cropping, shouldn't the maturity date be much closer to the emergence date to model transpiration by mature rooting system.**

EFED- No Comment

- # SRC- NCPDS was previously adjusted to 30. The maturity date was changed to March 1 to represent the maturity of the leaves. (01/10/06)

**CLA- In PRZM summary file, the number of cropping periods is set to 1, with an emergence date of 2/1/1948, a maturity date of 8/15/1948 and a harvest date of 8/31/1948. With only one cropping period, shouldn't the harvest year be 1983 (i.e., the last year of the simulation)?**

EFED- No Comment

- # SRC- Previously addressed: Meteorological Start and End dates changed to 1961-1990 in metadata. Also, NCPDS was changed from 36 to 30 to match meteorological files. (01/10/06)

~~~~~End of CAgrapesIC Revisions ~~~~~

## CAlettuce

Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 4 changed from 5.5 to 1. DPN of Horizon 5 changed from 5.5 to 2. (10/31/05)
- # Emergence Date changed from Feb-10 to Feb-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.3 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in Monterey County or Santa Maria. [\(http://www.weather.gov/climate\(NOWData\)\)](http://www.weather.gov/climate(NOWData)) (02/14/06)
- # SLP was changed from 9 to 6 due to inconsistency with guidance. (02/01/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

Metadata Change

- # Meteorological station selection: Provided justification in the metadata for why the scenario is not associated with the closest available station. (02/10/06)
- # THETO and THEFC for Horizon 5 changed from 0.241 to 0.214 to match CAlettuceC.txt file. (10/31/05)
- # USLE C factor: minimum value changed from 0.190 to 0.176 to match CAlettuceC.txt file. (10/31/05)

Summary File Change

- # CFLAG and ILP were blank. Changed both to 0, as per Guidance. (10/31/05)
- # Changed MLRA to 15 to be consistent with us48MLRA covered (USDA NRCS) for Monterey County.
- # NCPDS was blank. Changed to 30 to match Metadata. (10/31/05)
- # RECORD9E inserted using CN=89 for cropping prd and 94 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Feb-16 is the first date. (10/31/05)
- # WFMAL was blank. Changed to 0.0 to match Metadata, and Guidance. (10/31/05)

~~~~~End of CAlettuce Revisions ~~~~~

## CAonionIC

**Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 2 changed from 1 to 5. DPN of Horizon 3 changed from 2 to 4. (10/31/05)
- # Emergence Date changed from Jan-11 to Jan-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # IRRIGATION: PCDEPL changed from 0.12 to 0.75. Voss, R.E. Fresh Market Bulb Onion Production in California. U. of CA Publication 7242. 1999. Voss states "irrigate when 25% of available moisture is depleted." Guidance used: "Irrigation Guidance for developing PRZM Scenario" June 15, 2005. Previous metadata stated that the old value of 0.12 was "adjusted so that infiltration met Voss 61 to 76 cm of water use". Guidance does not indicate that this should be done, or what method should be used.
- # IRRIGATION: RATEAP changed from 0.2 to 0.08 according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN of 85 and FLEACH of 0.1 (01/17/06)
- # SFAC changed from 0.55 to 0. PRZM Guidance (July, 2004). Snow not expected to occur or accumulate and persist for more than a day in Bakersfield or Kern Counties.  
<http://www.weather.gov/climate> (NOWData) (02/14/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

**Metadata Change**

- # AMXDR changed from 30 to 35 to match txt file. (10/31/05)

**Summary File Change**

- # Format of record 11 modified by moving "onion" up one line so that it does not offset EMD. (10/31/05)
- # RECORD9E inserted using CN=85 for cropping prd and 92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors move so that Jan-16 is first date. (10/31/05)

~~~~~End of CAonionIC Revisions ~~~~~

## **CAsugarbeetIC**

**Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # IRRIGATION: RATEAP changed from 0.4 to 0.034 according to Table 3 for Furrow Irrigation and according to Table 1 of "Irrigation Guidance for developing PRZM Scenario" June 15, 2005, using CN
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

**Metadata Change**

- # AMXDR: justified inconsistencies in parameters from different sugarbeet scenarios due to different sources. Parameter value did not change. (01/16/06)
- # CAsugarbeetIC.txt file shows info for 3 horizons (Exeter fine sandy loam), but metadata showed data for only two (Exeter loam), metadata updated to match text file. (10/31/05)
- # Meteorological Start and End dates changed to 1961-1990 to match MetFile. (10/31/05)

**Summary File Change**

- # Maximum rainfall interception storage of crop (CINTCP) was changed from 0.25 to 0.2 to be consistent with PRZM Table 5.4 and PRZM Guidance July 2004, and other scenarios. (10/31/05)
- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that first date is Feb-01. (10/31/05)

## **CLA Scenario Comments: (CAsugarbeetIC)**

**Both Meta and Summary**

**CLA- The documentation states that sugar beet production concentrates on heavy clay or clay loam soils, but a fine loam soil is modeled.**

EFED- No Comment

- # SRC- Clay loam soils were recommended by an extension agent as growing approximately 90% of sugarbeet crops in the Central Valley (personal conversation with Kurt Hembree, 2/28/06). Therefore, Ryde clay loam was selected to represent the soil of the CA sugarbeet scenario. The justification for this change is located in the metadata. Soil parameters were taken from soil data mart for San Joaquin county, which is located within the Central Valley (the geographic location of interest for this scenario). Soil updates include: USLEK: from 0.34 to 0.28; stitle: from exeter to ryde; CORED: from 100 to 160; Thickness: Horizon 2: 16 to 51, Horizon 3: 74 to 99; BD: Horizons 1&2: 1.7 to 1.4, Horizon 3 1.8 to 1.08; DPN Horizon 2 4 to 3, Horizon 3 2 to 3; OC: Horizons 1&2 0.58 to 0.48, Horizon 3 0.174 to 0; THEFC and THETO: Horizons 1&2 0.218 to 0.359, Horizon 3 0.248 to

**CLA- Irrigation is modeled as flood but the documentation states that the sugar beet irrigation is by furrow or sprinkler systems.**

EFED- No Comment

- # SRC- IRRIGATION: IRTYP changed from 1 to 4 (furrow) according to Table 3 of Irrigation Guidance for developing PRZM Scenario, June 15, 2005. Sugarbeets in California are irrigated either by furrow or sprinkler. (USDA Crop Profile, 1999). (01/10/06)

#### Metadata Change

**CLA- Soil profiles are completely different between PRZM summary file and the documentation. The soil profile in the PRZM summary file is:**

**Horizon 1: THKNS = 10, DPN = 0.1, BD = 1.7, THETO = 0.218, THEFC = 0.218, THEWP = 0.078, and OC = 0.58.**

**Horizon 2: THKNS = 16, DPN = 4, BD = 1.7, THETO = 0.218, THEFC = 0.218, THEWP = 0.078, and OC = 0.58.**

**Horizon 3: THKNS = 74, DPN = 14.8, BD = 1.8, THETO = 0.248, THEFC = 0.248, THEWP = 0.108, and OC = 0.174.**

**The soil profile in the documentation is:**

**Horizon 1: THKNS = 10, DPN = 0.1, BD = 1.59, THETO = 0.160, THEFC = 0.16, THEWP = 0.06, and OC = 0.46.**

**Horizon 2: THKNS = 173, DPN = 17.3, BD = 1.76, THETO = 0.200, THEFC = 0.2, THEWP = .11, and OC = 0.19**

EFED- No Comment

- # SRC- Previously addressed: Soil horizon 3 was added and BD, THETO, THEFC, THEWP and OC parameters were adjusted to match scenario file values as listed above. (01/10/06)

**CLA- The total soil depth is listed as 100 cm in the PRZM summary file but 183 cm in the**

EFED- No Comment

- # SRC- Previously addressed: CORED changed from 183 to 100 in metadata file . (01/10/06)

~~~~~End of CASugarbeetIC Revisions ~~~~~

## **CAtomato WirrigC**

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of Horizon 2 changed from 1 to 4. DPN of Horizon 3 changed from 16.2 to 3. (10/31/05)
- # Pan Factor changed from 0.7 to 0.73 as per Guidance. (10/31/05)
- # SFAC changed from 0.55 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # AMXDR: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value did not change. (01/16/06)
- # COVMAX: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value did not change. (02/03/06)

- # Irrigation parameters changed to match txt file, but may change again, as needed. (10/31/05)
- # Meteorological Dates changed to 1961-1990. (10/31/05)
- # Meteorological station selection: Provided justification in the metadata for why the scenario is not associated with the closest available station. (02/09/06)
- # NCPDS changed from 36 to 30. (10/31/05)

#### Summary File Change

- # Changed THEFC from 0.19 to 0.25 to be consistent with metadata, THETO, and guidance which states that THEFC and THETO should be the same. (10/31/05)
- # RECORD9E inserted using CN=87 for cropping prd and 91 for non-cropping period. (10/31/05)
- # RUSLE dates and C Factors moved so that Mar-01 is the first date (10/31/05)

### **CLA Scenario Comments: (CAtomato\_WirrigC)**

#### Both Meta and Summary

**CLA- In CA tomato and almond scenarios, some subsurface horizons have anomalous values with WP=FC. This may give rise to erroneous output. It is suggested that the Rauls and Brakensiek method recommended by the PRZM user manual be used to calculate WP and FC.**

EFED- No Comment

- # SRC- THEFC (field capacity) changed from 0.25 to 0.396 (Horizon 3) in accordance with PRZM Guidance Table 5-25 for clay. The old value of 0.25 was equal to the wilting point and was too low for a field capacity for a clay, according to Table 5-25 in the Guidance. The wilting point value is within the acceptable range in Table 5-25. (01/30/06)

**CLA- Irrigation is furrow, but FLEACH, PCDEPL, and RATEAP parameters set to same values as for the CA flood irrigation scenarios.**

EFED- No Comment

- # SRC- IRRIGATION: RATEAP changed from 3 (over canopy) to 4 (undercanopy). Notes in the txt file all indicate that furrow irrigation is to be simulated. The remaining irrigation parameters are in accordance with the new current Irrigation Guidance dated June 15, 2005 for furrow irrigation.

#### Summary File Change

**CLA- In the documentation, for soil horizon # 3, the field capacity equals the wilting point (i.e., both equal to 0.25).**

EFED- No Comment

- # SRC- THEFC (field capacity) changed from 0.25 to 0.396 (Horizon 3) in accordance with PRZM Guidance Table 5-25 for clay. The old value of 0.25 was equal to the wilting point and was too low for a field capacity for a clay, according to Table 5-25 in the Guidance. The wilting point value is within the acceptable range in Table 5-25. (01/10/06)

**CLA- In the PRZM summary file the field capacity (= 0.19) and wilting point (=0.25) values are reversed for horizon #3.**

EFED- No Comment

- # SRC- THEFC (field capacity) changed from 0.25 to 0.396 (Horizon 3) in accordance with PRZM Guidance Table 5-25 for clay. The old value of 0.25 was equal to the wilting point and was too low for a field capacity for a clay, according to Table 5-25 in the Guidance. The wilting point value is within the acceptable range in Table 5-25. (01/10/06)

~~~~~End of CAtomato\_WirrigC Revisions ~~~~~

### **FLavacadoC**

#### Both Meta and Summary

- # Changed harvest date from Nov 31 (not possible) to November 30. (10/31/05)
- # DPN of HORZN 2 was changed from 1 to 5. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

#### Summary File Change

- # RECORD9E inserted using CN=51 for cropping prd and 66 for non-cropping period. (10/31/05)
- # RUSLE dates and C Factors moved so that Mar-01 is the first date (10/31/05)

~~~~~End of FLavacadoC Revisions ~~~~~

## **FLcabbageC**

### **Both Meta and Summary**

- # ANETD changed from 33 to 25 based on the location of Manatee County and according to PRZM Guidance rev. July 2004. (10/31/05)

### **Metadata Change**

- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata listed West Palm Beach (W12844) while the scenario file listed Tampa (W12842). Geographically, the Tampa station is closer to Manatee County, the location of the Cabbage scenario. Therefore, the metadata was changed to reflect the Tampa station referenced in the scenario file. (10/31/05)
- # NCPDS changed from 36 to 30, according to number of years in meteorological file. (10/31/05)
- # Starting and ending dates referenced in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### **Summary File Change**

- # Changed MLRA from 156B to 155. Manatee county is entirely within MLRA 155 (HTITLE). (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)
- # Emergence date altered from Oct-20 to Oct-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Record 9E inserted into scenario file. (02/21/06)
- # There was an inconsistency in the county designation for this scenario. The metadata described this scenario as being located in Manatee County, whereas the scenario file indicated that this scenario was located in Collier and Hendry counties. The crop profile indicated that Manatee county was one of the counties with significant acreage of cabbage (<http://www.ipmcenters.org/cropprofiles/docs/FLcabbage.html>). Therefore, the scenario file HTITLE was changed to indicate that the scenario represented Manatee County. This does not change the

~~~~~End of FLcabbageC Revisions ~~~~~

## **FLcarrotC**

### **Both Meta and Summary**

- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)
- # Emergence date changed from Oct-15 to Oct-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)

### **Metadata Change**

- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### **Summary File Change**

- # Record 9E inserted with CN=87 for cropping period and CN=91 for non-cropping period. (10/31/05)
- # RUSLE dates and C factors moved so that Oct 16 is first date (10/31/05)

~~~~~End of FLcarrotC Revisions ~~~~~

## **FLcitrusC**

Both Meta and Summary

- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

Metadata Change

- # AMXDR: metadata changed to justify difference in value between other citrus scenario. No change made to parameter value. (02/03/06)
- # Meteorological File Start and End dates to 1961/1990 (10/31/05)

Summary File Change

- # First RUSLE date and C factors did not require modification. First RUSLE date was Jan 1. (10/31/05)
- # Met Station: The meteorological station was changed from Tampa to West Palm Beach. Refer to SRC Oct 31, 2005 deliverable for more information. (10/31/05)
- # Record 9E added with cropping CN=85. This is a year round crop, so no non-cropping curve number required. (10/31/05)

**CLA Scenario Comments: (FLcitrusC)**

**CLA- Low-volume drip or sprinkler irrigation on citrus is stated in the documentation but no irrigation is included in the scenario.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

Both Meta and Summary

**CLA- The cropping dates are modeled as 36 annual plantings of citrus with an emergence date of February 15, maturity date of October 15, and harvest date of December 15 of each simulation year. Citrus is an evergreen tree and should be modeled as continuous cropping with continuous transpiration.**

EFED- No Comment

- # SRC- NCPDS was previously altered to 30 to be consistent with the meteorological file dates. Emergence date changed from Feb 15 to Jan 1. Maturity date changed from Oct 15 to Jan 2. Harvest date changed from Dec 15 to Dec 31. Record 9E was changed accordingly. Changes made to model year round transpiration of this crop. (01/10/06)

~~~~~End of FLcitrusC Revisions ~~~~~

**FLcucumberC**Both Meta and Summary

- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)
- # Emergence date changed from Oct-10 to Oct-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: The FL cucumber weather station was altered to West Palm Beach (W12844). Refer to SRC Oct 31, 2005 deliverable for more information. (10/31/05)

Metadata Change

- # Changed number of cropping periods in metadata from 36 to 30. (10/31/05)
- # Starting and ending dates changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

Summary File Change



- # Changed MLRA to 156 A to be consistent with NRCS MLRA map and other scenarios in county.
- # First RUSLE date and C factors moved so that Oct-16 is first date. (10/31/05)
- # Record 9E inserted using CN= 87 for cropping period and CN=91 for non-cropping period. (10/31/05)

## **CLA Scenario Comments: (FLcucumberC)**

**CLA- Document indicates overhead irrigation but no irrigation is included in the scenario.**

- EFED- No Comment
- # SRC- EFED has not yet incorporated irrigation into the scenario. (01/10/06)

~~~~~End of FLcucumberC Revisions ~~~~~

## **FLpeppersC**

### **Both Meta and Summary**

- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004. (10/31/05)

### **Metadata Change**

- # COVMAX value is 70 for metadata and 40 for scenario. The metadata was changed to reflect the correct value of 40. (10/31/05)
- # Emergence date was January 9 for metadata and September 1 for scenario. The metadata file was altered to reflect the value in the scenario file (Based on the USDA crop profile, Transplants are typically planted from August through March (although peppers are present in the field in some area of Florida every month of the year). The plants are in the field from 2.5-5 months (10), depending on the season of the year. Therefore, a reasonable emergence date is September 1 with a harvest date of November 15 resulting in a 2.5 month growth period.). (10/31/05)
- # Maturity date was 11/15 for metadata and 15/11 for scenario (date: dd/mm). The metadata file was altered to reflect the value in the scenario file. (10/31/05)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata file changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### **Summary File Change**

- # Changed MLRA to 156A to be consistent with NRCS designations and other scenarios in Collier & Hendry counties. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)
- # First RUSLE date and C factors moved to Spt-01 (10/31/05)
- # Record 9E inserted using CN=87 for cropping period and CN=91 for non-cropping period. (10/31/05)

~~~~~End of FLpeppersC Revisions ~~~~~

## **FLpotato**

### **Both Meta and Summary**

- # AMXDR: parameter value was changed to be consistent with PRZM manual (EPA 1998) and with other potato scenarios. (01/16/06)
- # DPN value for HORZN 2 was 5 for metadata and 4 for scenario. This value was changed to 5 in the scenario file (this HORZN was changed from #2 to #3 as explained by the comment above). (10/31/05)
- # Maximum rainfall interception storage of crop (CINTCP) changed from 0.25 to 0.1 to be consistent with value from Table 5.4 in PRZM Manual (potatoes range 0.0 - 0.15), and to be consistent with other

### **Metadata Change**

- # CORED value was listed as 200 for metadata and 203 for scenario. According to soildata mart, the total soil depth is 203 cm. The metadata was corrected to reflect this value. (10/31/05)

- # Slope documentation updated to be consistent with guidance. Parameter value was not changed.
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # Changed STITLE from Myakka fine sand to Placid based on metadata. (02/21/06)
- # HTMAX: value changed from 50 to 30 to be consistent with other potato values. (02/06/06)
- # MLRA changed from 153A to 155. St Johns county is entirely within MLRA 155 (10/31/05)
- # NHORIZ was changed from 2 to 3 in accordance with guidance. Soil data mart lists 2 soil horizons for Placid fine sand soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 20 cm horizon.
- # OC was corrected using the formula:  $\%OC = \%OM * 0.6$ . Average %OM values for each horizon were obtained from soil data mart. (10/31/05)
- # Record 9E inserted using CN=89 for cropping period and CN=91 for non-cropping period. (10/31/05)
- # The scenario file did not have HTITLE. This was added. (10/31/05)

~~~~~End of FLpotato Revisions ~~~~~

## **FLstrawberryC**

#### Both Meta and Summary

- # IRRIGATION: FLEACH changed from 0.1 to 0 according to Irrigation Guidance for developing PRZM Scenario, Table 3 (June 15, 2005); for Drip Irrigation. (01/30/06)
- # IRRIGATION: RATEAP changed from 1.9 to 0.026 according to Irrigation Guidance for developing PRZM Scenario, Table 1 (June 15, 2005); using CN=89 and FLEACH = 0. (01/30/06)
- # IRRIGATION: IRTYP changed from 3 (over canopy) to 4 (drip irrigation), as per information received from Alicia Whidden, Vegetable County Extension Agent, University of Florida, Institute of Food and Agricultural Sciences, Extension Service Hillsborough County, 813-744-5519 (ext.134). Email: ajwhidden@mail.ifas.ufl.edu (Email received 5/12/05). Over canopy irrigation is used for plant establishment and freeze protection, otherwise 99% use drip irrigation for watering and fertilizing.
- # Slope value was updated to be consistent with guidance. Metadata originally indicated that fields were laser leveled. The source could not be confirmed. Therefore, the slope was updated to be consistent with guidance. The original 1% value was changed to 4%, the midpoint of the given range (0-8%) for this soil type, as cited in the metadata description paragraph. (01/10/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Starting date of meteorological file was changed from 1960 to 1961. (10/31/05)

#### Summary File Change

- # Changed MLRA from U-154 to U-155. Hillsborough and Manatee counties are primarily within 155.
- # Dates for emergence and maturity were changed to 1960 (from 1961) in order to be consistent with cropping practices and timelines. (01/20/06)
- # First RUSLE date and C factors moved to Oct-01 (10/31/05)
- # Format of record 11 modified by moving "Strawberry" up one line so that it does not offset EMD.
- # Record 9E inserted using CN=89 for cropping period and CN=92 for non-cropping period. (10/31/05)

- # There was an inconsistency in the county designation for this scenario. The metadata described this scenario as being located in Hillsborough or Manatee Counties, whereas the scenario file indicated that this scenario was only located in Hillsborough county. The crop profile indicated that Hillsborough and Manatee counties made up approximately 95 % of the crop production in the state (<http://www.ipmcenters.org/cropprofiles/docs/FLstrawberries.html>). Therefore, the scenario file was changed to indicate that the scenario represented Hillsborough or Manatee Counties. This does not change the meteorological station, which is located in Tampa. (10/31/05)

~~~~~End of FLstrawberryC Revisions ~~~~~

## FLsugarcaneC

### Both Meta and Summary

- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004. (10/31/05)  
 # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata listed Miami (W12839) while the scenario file listed West Palm Beach (W12844). Geographically, the West Palm Beach station is closer to Hendry County, the location of the Sugarcane scenario. Also, the location overlaps geographically with FL Pepper and FL tomato scenarios, which also reference the West Palm Beach station. Therefore, the metadata was changed to reflect the West Palm Beach station  
 # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.  
 # Starting and ending dates of metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

### Summary File Change

- # Record 9E inserted using CN=91 for cropping period. This crop is modeled as a year round crop so no non-cropping period CN as per guidance for modeling year round crops. (10/31/05)

## CLA Scenario Comments: (FLsugarcaneC)

**CLA- This scenario "crashed" when run using PRZM3.12.**

- EFED- No Comment  
 # SRC- (01/10/06)

### Both Meta and Summary

**CLA- Emergence date is Jan. 1 of each simulation year in the documentation but Jan. 2 in the PRZM summary file.**

- EFED- No Comment  
 # SRC- Emergence date changed from Jan 2 to Jan 1. Maturity date changed from June 1 to Jan 2. Harvest date changed from Dec 15 to Dec 31. Record 9E was changed accordingly. Changes made to model year round transpiration of this crop. (01/10/06)

~~~~~End of FLsugarcaneC Revisions ~~~~~

## FLsweetcornC

### Both Meta and Summary

- # AMXDR: updated metadata source and parameter value to be consistent with other corn scenarios and with current guidance. (01/16/06)  
 # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004. (10/31/05)  
 # CINTCP changed in PRZM summary file from 0.15 to match guidance (0.25). Value was changed according to Table 5.4 in PRZM manual (0.25 - 0.3) and harmonized with other corn scenarios.  
 # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)  
 # Emergence date changed from Oct-15 to Oct-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)

- # Maximum Canopy Coverage (COVMAX) changed from 90% (PIC) to 100% to be consistent with PRZM Guidance, Rev. July 2004, and other corn scenarios. (10/31/05)

#### Metadata Change

- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # First RUSLE date and C factors moved to Oct-16. (10/31/05)
- # HTMAX: changed from 250 to 300 to be consistent with other corn scenarios. Text file source stated that 250 was not maximum value. (02/07/06)
- # Record 9E inserted using CN=87 for cropping period and CN=91 for non-cropping period. (10/31/05)

### **CLA Scenario Comments: (FLsweetcornC)**

**CLA- The documentation states that the crop is produced with several types of irrigation although no irrigation is simulated.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

~~~~~End of FLsweetcornC Revisions ~~~~~

### **FLtomatoC**

#### Both Meta and Summary

- # AMXDR: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value was changed from 90 to 30 cm based on conversation with extension agent. (02/03/06)
- # ANETD changed from 33 to 32.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # COVMAX: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value was changed from 50 to 40 based on conversation with extension agent.
- # DPN values were changed to be consistent with 2004 guidance: HORZN 3 was changed from 2 to 4.
- # Emergence, maturity and harvest dates changed based on conversation with extension agent. Emergence from Jan 10 to Feb 01. Maturity from March 30 to April 21. Harvest from April 5 to May 15. Record 9E changed accordingly. (02/03/06)

#### Metadata Change

- # ICNAH: value confirmed by conversation with extension agent. Metadata source updated. (02/03/06)
- # Starting and ending dates changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # First RUSLE date and C factors moved to Feb-01. (10/31/05)
- # Format of record 11 modified by moving "tomato" up one line so that it does not off set EMD. (10/31/05)
- # Record 9E inserted using CN=87 for cropping period and CN=91 for non-cropping period. (10/31/05)

~~~~~End of FLtomatoC Revisions ~~~~~

## FLturfC

### Both Meta and Summary

- # DPN of HORZN 2 was changed from 0.1 to 5, HORZN 3 was changed from 0.1 to 5. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata listed Miami (W12839) while the scenario file listed Daytona Beach (W12834). Geographically, the Daytona Beach station is closer to Osceola County, the location of the Turf scenario. Therefore, the metadata was changed to reflect the Daytona Beach station referenced in the scenario file. (10/31/05)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates of metadata file changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

### Summary File Change

- # CFLAG was not completed in the scenario file. A value of 0 was added in accordance with guidance.
- # Changed MLRA from 156A to 155. Osceola county is almost entirely within MLRA 155. (10/31/05)
- # First RUSLE date and C factors moved to Feb-01 (10/31/05)
- # Record 9E inserted using CN=74 for cropping period. (10/31/05)

~~~~~End of FLturfC Revisions ~~~~~

## GAonionsC

### Both Meta and Summary

- # ANETD changed from 30 to 25 as per PRZM Guidance rev. July 2004. (10/31/05)
- # DPN of HORZN 2 was changed from 1 to 5. (10/31/05)
- # IRRIGATION: FLEACH changed from 0.05 to 0.1 in accordance with Irrigation Guidance for developing PRZM Scenario, Table 3; (June 15, 2005). (02/01/06)
- # IRRIGATION: PCDEPL changed from 0.05 to 0.55 as per reference previously cited: Harrison, 2001. Irrigating Sweet Onions in Georgia. In: (ED.) G. Boyhan et al. Onion Production Guide. Bulletin 1198 University of Georgia. Irrigate at 30 centibars soil moisture, which is approximately 0.55 available water capacity for a loamy sand, and is consistent with default values and guidance. (02/01/06)
- # IRRIGATION: RATEAP changed from 5 to 0.074 in accordance with Irrigation Guidance for developing PRZM Scenario, Table 1; (June 15, 2005), for CN= 86 and f = 0.1 (02/01/06)
- # Maximum rainfall interception storage of crop (CINTCP) changed from 0.1 to 0.05 to be consistent with other onion scenarios (within range for light density crops from Table 5.4 in PRZM Manual: 0.0 - 0.15)
- # SFAC changed from 0.15 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Changed from 0.44 to 0.43 (02/01/06)

### Metadata Change

- # USLEC factor range in metadata did not match that given in scenario file. The metadata file was changed to describe the factors listed in the scenario file. (10/31/05)

### Summary File Change

- # First RUSLE date and C factors moved to Spt-15. (10/31/05)
- # Record 9E inserted using CN=86 for cropping period and CN=91 for non-cropping period. (10/31/05)

~~~~~End of GAonionsC Revisions ~~~~~

## GApeachesC

### Both Meta and Summary

- # SFAC changed from 0.15 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (02/14/06)

#### Metadata Change

- # DPN of HORZN 2 was changed from 3 to 5. (10/31/05)
- # Met Station: Weather station ID for Macon, GA meteorological file was incorrect in metadata. This value was changed from W93805 to W03813, which corresponds to the ID of this meteorological file according to the scenario file and to the scenario text file. (10/31/05)
- # The SLP source comment was updated to be consistent with guidance. The parameter value was not changed. (01/10/06)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # First RUSLE date and C factors moved to Mar-01 (10/31/05)
- # Record 9E inserted using CN=67 for cropping period and CN=78 for non-cropping period. (10/31/05)

~~~~~End of GApeachesC Revisions ~~~~~

## **GApeanutC**

#### Summary File Change

- # This file was not received by SRC. Email from Sid Abel, forwarded by Mark Corbin (5-12-2005) "GA Peanuts has not been updated or QA'd." (10/31/05)

~~~~~End of GApeanutC Revisions ~~~~~

## **GApecansC**

#### Both Meta and Summary

- # DPN of HORZN 4 was changed from 6 to 3. (10/31/05)
- # Emergence date was changed from April-21 to April-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.15 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (02/14/06)
- # SLP was changed from 5 to 4.75 due to inconsistency with guidance. (02/01/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

#### Metadata Change

- # NCPDS in metadata was changed from 36 to 30 to be consistent with meteorological years and scenario file. (10/31/05)
- # The metadata indicates that the meteorological file corresponds to Macon GA, while the ID (W93805) corresponds to Tallahassee, FL. The scenario file references Tallahassee, FL and ID W93805 as the meteorological station. Geographically, Mitchell and Dougherty Counties, which represent this scenario, are closer to Tallahassee, FL than to Macon, GA. The reference to Macon, GA in the metadata was changed to Tallahassee, FL in order correspond to the ID that the metadata and scenario file

#### Summary File Change

- # First RUSLE date and C factors moved to Apr-16. (10/31/05)
- # Record 9E inserted using CN=79 for cropping period and CN=84 for non-cropping period. (10/31/05)
- # STITLE was changed from Greenville to Williston, to be consistent with name of soil series being modeled. (10/31/05)

~~~~~End of GApecansC Revisions ~~~~~

## **IDNpotato WirrigC**

**Both Meta and Summary**

- # ANETD changed from 15 to 12.5 as per PRZM Guidance rev. July 2004, and location of Bingham county. (10/31/05)
- # DPN of HORIZN 2 was changed from 1 to 4, HORIZN 3 was changed from 1 to 2, HORIZN 4 was changed from 1 to 4. (10/31/05)
- # SFAC changed from 0.3 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

**Metadata Change**

- # AMXDR: metadata source was altered to be more clear and to justify inconsistencies with other potato scenarios. (01/16/06)
- # Changed header of Table 4. to Malm Sandy loam to be consistent with intro and scenario file. (10/31/05)
- # USLEP changed from 1.0 to 0.5 to match IDNpotato\_WirrigC.txt file. Note: Guidance for selecting Input Parameters and Chapter 5 Table 5-6 are inconsistent. (10/31/05)

**Summary File Change**

- # Emergence day changed from "01" to "1", Maturity month changed from "08" to "8", and harvest month changed from "09" to "9". (10/31/05)
- # HORIZN: For Horizon 3, the HORIZN value was changed from 2 to 3 to match the horizon number.
- # HORIZN: For Horizon 4, the HORIZN value was changed from 3 to 4 to match the horizon number.
- # NCPDS changed from 60 to 30 to match metadata file, and MetFile, and other potato scenarios. Only 1 crop is simulated in the scenario (10/31/05)
- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

~~~~~End of IDNpotato\_WirrigC Revisions ~~~~~

## **ILalfalfa**

**Both Meta and Summary**

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. Value changed from 100 to 152 to be consistent with CORED value. (01/16/06)
- # DPN of HORIZN 2 was changed from 1 to 5, HORIZN 3 was changed from 1 to 2. (10/31/05)
- # Emergence date was changed from May-27 to June-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Scenario originally referenced Peoria, but were changed during the previous contract to Moline based on guidance to select the nearest met station in the same MLRA. Updated guidance from EFED stated to use the closest station, regardless of MLRA. If a further station was chosen because it was more representative climatologically, then it should be clearly documented. Because, the scenarios originally used Peoria, IL (the closest available station), the scenarios were switched back from Moline
- # NHORIZ was changed from 4 to 5 in accordance with guidance. Soil data mart lists 4 soil horizons for Varna silt loam. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 20 cm horizon.
- # No range was listed for the derivation of the SLP value, so consistency with guidance could not be verified. The official soil series description indicates: "Slopes range from 1 to 18 percent." Therefore, the slope was changed from 3% to 12% (since the maximum of the range is >12 and alfalfa is a field crop, the SLP was set to 12% (USEPA 2004)). (01/10/06)
- # Pan Factor (PFAC) was changed from 0.76 to 0.77 based on the location of McLean County and guidance (Figure 5.1 in the Manual). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

Summary File Change

- # Modified record 11 from "corn" to "alfalfa". (02/21/06)
- # RECORD9E inserted using CN=85 for cropping prd and 87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

~~~~~End of ILAlfalfa Revisions ~~~~~

**ILbean**Both Meta and Summary

- # Crop specific parameters for bean scenarios were harmonized. Advice of OR extension agent was obtained. COVMAX changed from 80 to 100. AMXDR changed from 18 to 38. HTMAX changed from 50
- # DPN of HORZN 2 was changed from 2 to 5, HORZN 3 was changed from 5 to 2. (10/31/05)
- # Emergence date was changed from June-11 to June-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Scenario originally referenced Peoria, but were changed during the previous contract to Moline based on guidance to select the nearest met station in the same MLRA. Updated guidance from EFED stated to use the closest station, regardless of MLRA. If a further station was chosen because it was more representative climatologically, then it should be clearly documented. Because, the scenarios originally used Peoria, IL (the closest available station), the scenarios were switched back from Moline
- # NHORIZ was changed from 4 to 5 in accordance with guidance. Soil data mart lists 4 soil horizons for Varna silt loam. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 20 cm horizon.
- # No range was listed for the derivation of the SLP value so consistency with guidance could not be verified. The official soil series description indicates: "Slopes range from 1 to 18 percent." Therefore, the slope was changed from 3% to 6% (since the maximum of the range is >12 and bean is a row crop, the SLP should be set to 6% (USEPA 2004)). (01/10/06)
- # OC, THEFC, THKNS, and THETO updated to soil data mart and EPA 2004 guidance. (10/31/05)
- # Pan Factor (PFAC) was changed from 0.76 to 0.77 based on the location of McLean County and guidance (Figure 5.1 in the Manual). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

Summary File Change

- # Change TITLE from ILAlfalfa to ILbeans. (02/22/06)
- # RECORD9E inserted using CN=89 for cropping prd and 92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-16 is the first date. (10/31/05)
- # USLEC and MNGN values in metadata were different than those in scenario file. The metadata corresponded to RUSLE files for Chicago and the scenario data corresponded to scenario data for Carbondale, IL. Since Chicago is geographically closer to McLean County, the Chicago RUSLE data were selected. Therefore, the scenario file and metadata were harmonized using Chicago IL RUSLE

~~~~~End of ILbean Revisions ~~~~~

**ILcornC**Both Meta and Summary

- # ANETD changed from 16 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN for HORZN 2 was changed from 6.8 to 2, HORZN 3 was changed from 11 to 4, HORZN 4 was changed from 12 to 4. (10/31/05)



- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX, ISCOND, ICNAH: removed PIC reference in metadata. Extension agent reference also cited was sufficient. (02/06/06)
- # Metadata references meteorological station as Burlington, IA (W14931), while scenario file references Moline, IL (W14923). In fact, the Peoria, IL station (W14842) is the closest available station relative to McLean County. In addition, the IL alfalfa and IL beans scenarios located in McLean County also use W14842. The meteorological station was changed to Peoria, IL (W14842) which is the closest station as per guidance, and to be consistent with the IL corn and beans scenarios. (02/06/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # SLP: The source comment in the metadata was altered to be consistent with guidance. The parameter value was not altered. (01/10/06)
- # Starting and ending dates changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

#### Summary File Change

- # HTMAX: changed from 100 to 300 to be consistent with other corn scenarios. This change was supported by observation of corn crops reaching an average of 100 inches (254 cm) before harvest (IA Agricultural Statistics, Iowa Crops & Weather, Field Crops report, 2003). (02/07/06)
- # RECORD9E inserted using CN=87 for cropping prd and 91 for non-cropping prd. (10/31/05)
- # Reference to Line #40 was misplaced in the middle of Horizon 4. Line #40 was moved down to the ILP variable and reference to Line #34 and Line#37 were inserted appropriately for the variables in Horizon
- # RUSLE dates and C factors moved so that May-01 is the first date. (10/31/05)

### CLA Scenario Comments: (ILcornC)

#### Both Meta and Summary

##### **CLA- No Comment**

- EFED- Change bulk density in documentation to 1.45 (THIS IS CORRECT. FIX DOCUMENTATION)
- # SRC- BD: In the scenario file, HORIZN 1 BD is 1.45 and HORIZN 2 BD is 1.5. The file indicates that these two horizons are the result of splitting the top horizon. Therefore, the BD for HORIZN 2 was changed to 1.45. The metadata file was also altered to reflect a 1.45 value for BD for HORIZNS

~~~~~End of ILcornC Revisions ~~~~~

## KSsorghumC

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # SFAC changed from 0.3 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Bulk Density (BD) for Horizon 4 changed from 1.8 to 1.6 to match txt file. Original Soil series data for the scenario not found to verify. (10/31/05)
- # Land Slope % (SLP) changed from 42% to 4% to match txt file and written description. (10/31/05)
- # NRCS Hyetograph (IREG) changed from 1 to 3 to match txt file and Guidance. (10/31/05)

#### Summary File Change

- # DPN for Horizon 2 changed from 2 to 4, and DPN for Horizon 4 changed from 2 to 4. (10/31/05)
- # HTMAX changed from 120 to 140. This was harmonized with TX sorghum. This was based on maximum average height observed in 2005 studies done by KS extension. Report available at: <http://www.oznet.ksu.edu/library/crpsl2/srp950.pdf> (02/03/06)

- # Maximum Active Root Depth (AMXDR) changed from 120cm to 23 cm in accordance with PRZM Guidance and Table 5.9 in the Manual. The website reference (<http://www.ianr.unl.edu/pubs/soil/g831.htm>) shows a maximum rooting depth for the dough stage of development as 4 ft (120 cm) but this may not be the "active" rooting depth, and is inconsistent with
- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-20 is the first date. (10/31/05)

~~~~~End of KSsorghumC Revisions ~~~~~

## **LAsugarcaneC**

### Both Meta and Summary

- # DPN of HORZN 2 was changed from 2 to 4. (10/31/05)
- # SLP changed from 1 to 2.75 to be consistent with guidance. (02/01/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # Meteorological file in metadata originally incorrectly referenced Jackson, MS station. The scenario file references the Baton Rouge, LA station (acceptable). The metadata file was changed to correspond to the scenario file. Provided justification in the metadata for why the scenario is not associated with the closest available station. (02/10/06)
- # NCPDS in metadata was changed from 20 to 30. (10/31/05)
- # The starting and ending dates of the meteorological file that were referenced in the metadata file were changed to correspond to the dates of the Baton Rouge, LA meteorological file. (10/31/05)

### Summary File Change

- # RECORD9E inserted using CN=87 for cropping prd and 91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Nov-01 is the first date. (10/31/05)
- # WFMAX of 0 was added to the scenario file. This was left blank originally. The metadata file lists this value as 0, which is also the default value. (10/31/05)

## **CLA Scenario Comments: (LAsugarcaneC)**

### Both Meta and Summary

**CLA- The PRZM summary file lists an emergence date of Nov. 2, maturity date of Nov. 6 of the next year and harvest date of Nov. 21 of the next year. But no year patterns are included in the documentation so this comes across as emergence, maturity, and harvest all in November of**

EFED- No Comment

- # SRC- Emergence date changed from Nov-2 to Jan-1. Maturity date changed from Nov 6 to Jan 2. Harvest date changed from Nov 21 to Dec 31. Record 9E was changed accordingly. Changes made to model year round transpiration of this crop. (02/10/06)

~~~~~End of LAsugarcaneC Revisions ~~~~~

## **MEpotatoC**

### Both Meta and Summary

- # DPN of HORZN 2 was changed from 1 to 4, HORZN 3 was changed from 1 to 4, HORZN 4 was changed from 1 to 5. (10/31/05)
- # Emergence date changed from May-30 to June-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)

### Metadata Change

- # AMXDR: parameter value was changed to be consistent other potato scenarios and to justify inconsistencies. (01/16/06)
- # Changed header in Table 4. to Conant Silt Loam to be consistent with intro and scenario file. (10/31/05)

- # Meteorological file in metadata referenced Portland, ME. The scenario file referenced a meteorological station in Caribou, ME, which is located in the county modeled for this scenario. The metadata file was changed to correspond to the scenario file. (10/31/05)
- # NCPDS in metadata was changed from 36 to 30. (10/31/05)
- # SLP: Source comment was updated to be consistent with guidance. Parameter value was not changed.
- # Soil name---Changed reference to "Conant gravelly silt loam" in the initial paragraph to be consistent with the soil name in the summary file. Conant silt loam is in Soil Data Mart database for Aroostook County, but Conant gravelly silt loam is not. (02/06/06)
- # The starting and ending dates of the meteorological file that were referenced in the metadata file were changed to correspond to the dates of the Caribou meteorological file. (10/31/05)
- # There was an inconsistency between the CNs in the metadata (89, 86, 86) and in the scenario file (89, 86, 87). The guidance supports the scenario file CNs (GLEAMS manual, table H-4). The metadata was corrected to correspond to the scenario file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

~~~~~End of MEpotatoC Revisions ~~~~~

## MIAsparagusC

#### Both Meta and Summary

- # According to the metadata paragraph, the slope of this soil ranges from 0-70%. Therefore, according to guidance, since the maximum of the range is >12%, the SLP for an row crop scenario should be set to 6%(the SLP changed from 2% to 6%). (01/11/06)
- # ANETD changed from 20 to 12.5 as per PRZM Guidance rev. July 2004. Oceana County is on the boundary line between Soil evaporation loss zones; guidance indicates to choose the midpoint of the lowest range of values. (10/31/05)
- # DPN of HORZN 2 was changed from 1 to 5, HORZN 3 was changed from 2 to 5. (10/31/05)
- # Emergence date changed from June-21 to June-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: The met station was changed to Muskegon, MI. Refer to SRC Oct 31, 2005 deliverable for more information. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- # USLEP: Inconsistent with EPA 2004 guidance. Changed from 0.6 to 0.5 based on slope. (02/24/06)

#### Metadata Change

- # Changed header in Table 2. from "Dade County, Florida-Avacodo" to "Oceana, County, Michigan-Asparagus" (02/22/06)
- # Changed header in Table for to Spinks Loamy Sand to be consistent with introduction and scenario file.
- # THEWP for HORIZN 5 was 0.0650 in the metadata and 0.0652 in the scenario file. The scenario value was used. (10/31/05)

#### Summary File Change

- # Emergence and maturity years were changed to 1960 (from 1961) in order to be consistent with cropping practices and timelines. (01/20/06)
- # Format of record 11 modified by moving "Asparagus" up one line so that it does not off set EMD.
- # RECORD9E inserted using CN=61 for cropping prd and 71 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-16 is the first date. (10/31/05)

~~~~~End of MIAsparagusC Revisions ~~~~~

## MIbeansC

### Both Meta and Summary

- # According to the metadata paragraph, the slope of this soil ranges from 0-2%. Therefore, the slope was changed from 2 to 1%. (01/11/06)
- # ANETD changed from 15 to 12.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Crop specific parameters for bean scenarios were harmonized. Advice of OR extension agent was obtained. COVMAX changed from 75 to 100. AMXDR changed from 45 to 38. HTMAX changed from 50
- # DPN of HORZN 2 changed from 1 to 4, DPN for Horizon 3 from 2 to 3 (10/31/05)
- # Emergence date was changed from June-5 to June-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # HORIZN for Horizon #2 in scenario file was changed from 1 to 2, and HORIZN for Horizon #3 changed from 2 to 3 to match actual horizon numbers. (10/31/05)
- # THEWP: Scenario file changed so that THEWP of HORZN 3 is 0.254 (5-4-2005) (changed from 0.224).
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Summary File Change

- # RECORD9E inserted using CN=89 for cropping prd and 92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

~~~~~End of MIbeansC Revisions ~~~~~

## MIcherriesC

### Both Meta and Summary

- # Emergence date changed from April -25 to May-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # ANETD was listed as 25 in metadata and 12.5 in scenario file. According to figure 5.2, this value should be 12.5. Therefore, the metadata was changed. (10/31/05)
- # RECORD9E inserted using CN=79 for cropping prd and 82 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-01 is the first date. (10/31/05)
- # SFAC was listed as 0.3 in metadata and 0.36 in scenario file. In accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops, SFAC was changed to 0.16 in both.
- # SLP: The metadata was incorrect. According to the metadata paragraph, the slope of this soil ranges from 0-45%. Metadata was updated according to guidance (since the maximum of the range is >12%, the SLP for an orchard crop scenario should be set to 12%). The parameter value did not change.

### Summary File Change

- # TITLE: Changed from WI cherries to MI cherries. (02/22/06)

~~~~~End of MIcherriesC Revisions ~~~~~

## MNalfalfaC

### Both Meta and Summary

- # ANETD was changed from 12.0 to 12.5 cm. (10/31/05)
- # DPN of Horizons 2, 3 and 4 were changed from 0.1, 1, and 2 to 4, 3, and 4 respectively as per 2004 guidance. Note: Information from Jim Wolf suggested using DPN values of 1, 2 and 2 for horizons 2, 3 and 4 but this was inconsistent with current guidance. (10/31/05)
- # Emergence date changed from May-27 to June-1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # OC of Horizons 1, 2, 3, and 4 were changed from 1.74, 1.74, 0.116, and 0.058 to 4.06, 4.06, 0.174, and 0.116 respectively (as per Jim Wolf). (10/31/05)

- # SFAC value was changed from 0.5 to 0.36 in accordance with guidance (table 5.1 of the PRZM)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- # USLEP factor inconsistent with guidance. Changed from 0.6 to 0.5 to be consistent with slope and EPA 2004 guidance for PRZM scenario QAQC. (02/24/06)

#### Metadata Change

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. (01/16/06)
- # Meteorological data dates (in metadata) from 1948 -1983 to 1961-1990 (as per Jim Wolf). (10/31/05)
- # NCPDS was changed from 36 to 30 (as per Jim Wolf). (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=81 for cropping prd and 85 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

### **CLA Scenario Comments: (MNAlfalfaC)**

#### **CLA- No Comment**

EFED- The review of Standard Scenario submitted by Croplife America and prepared by T. Estes (10/18/02) identified no inconsistencies between the PRZM input file (MNAlfalfaC.txt) and the Minnesota Alfalfa documentation (metafile). Several changes were made to the PRZM input file, documentation, or both. The changes are discussed below.

The basic soil properties for the Bearden soil obtained for the Minnesota Alfalfa Scenario were obtained from the PIC database (Burns et al, 1992).

When the scenario was constructed it was intended to the soil divided into 4 horizons (NHORIZ = 4)(an 18 cm surface horizon was split into 10 and 8 cm), so that horizon 1 could use a 0.1 cm compartment thickness (THKNS) and horizon 2 would have THKNS value of 1 cm, the other two horizons had THKNS set to 2 cm. Thus, an additional horizon was added. Horizon 1 and 2 have would have the same properties, but different compartment thicknesses (THKNS)and compartment thickness (DPN). The input variables: NHORIZ, THKNS, BD, THETO,DPN, THEFC, and THEWP were changed to correspond with the difference in horizon thickness (Table 2).

It was determined that incorrect Organic Carbon content values were used in the Minnesota Alfalfa scenario. The incorrect values used were 1.74, 0.116, and 0.058 percent for Horizon 1, 2 and 3, respectively. The correct values are 4.06, 0.174, and 0.116 percent for horizons 1 and 2, 3, and 4, respectively.

These changes have been made to the Minnesota Alfalfa Scenario and the Minnesota Alfalfa

- # SRC- None. This was corrected in the files sent by Jim Wolf (4-14-05). (04/15/05)

#### Both Meta and Summary

#### **CLA- No Comment**

EFED- The meteorological file covers the period January 1, 1961 to December 31, 1990 (30 years) rather than the previous period January 1, 1948 to December 31, 1983 (36 years). The PRZM input NCPDS (number of cropping periods was changed to 30 from 36) in both input file and metadata file to reflect the change in meteorological files.

- # SRC- None. This was corrected in the files sent by Jim Wolf (4-14-05). (04/15/05)

~~~~~End of MNAlfalfaC Revisions ~~~~~

## **MNsugarbeetC**

#### Both Meta and Summary

- # ANETD changed from 12.0 to 12.5 cm. (10/31/05)
- # DPN of Horizons 2, 3 and 4 were changed from 2, 2, and 2 to 4, 3, and 4 respectively as per 2004 guidance. Note: Information from Jim Wolf suggested using DPN values of 1, 2 and 2 for horizons 2, 3 and 4 but this was inconsistent with current guidance. (10/31/05)

- # Emergence date changed from May-11 to May-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # OC of Horizons 1, 2, 3, and 4 were changed from 1.74, 1.74, 0.116, and 0.058 to 4.06, 4.06, 0.174, and 0.116 respectively (as per Jim Wolf) (10/31/05)
- # SFAC changed from 0.5 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- # USLEP: inconsistent with guidance. Updated to EPA 2004 guidance for developing field and orchard crop scenarios. (02/24/06)

#### Metadata Change

- # AMXDR: justified inconsistencies in parameters from different sugarbeet scenarios due to different sources. Parameter value did not change. (01/16/06)
- # COVMAX: removed PIC reference. Supporting reference cited extension agent. (02/06/06)
- # Meteorological data dates (in metadata) from 1948 -1983 to 1961-1990 (10/31/05)
- # Meteorological file name from Burlington, IA to Fargo, ND (in metadata) (10/31/05)
- # NCPDS was changed from 36 to 30 (10/31/05)
- # SLP: Source comment of SLP updated to be consistent with guidance. The parameter value did not change. (01/11/06)
- # Soil classification from adair clay loam to bearden silty clay loam (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=85 for cropping prd and 91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-16 is the first date. (10/31/05)
- # STITLE Soil classification from adair clay loam to bearden silty clay loam (as per Jim Wolf). (10/31/05)

### CLA Scenario Comments: (MNsugarbeetC)

**CLA- Documentation states that the crop may be irrigated by furrow, canal, or center pivot but no irrigation is simulated.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

#### Both Meta and Summary

**CLA- Snow factor is listed as 0.5 in the PRZM summary file and 0.56 in the documentation.**

EFED- No Comment

- # SRC- Previously addressed: SFAC changed from 0.5 to 0.36 to be consistent with current guidance. (01/10/06)

~~~~~End of MNsugarbeetC Revisions ~~~~~

## MScornC

#### Both Meta and Summary

- # DPN of HORZN 2 was changed from 2 to 4, HORZN 3 was changed from 2 to 4. (10/31/05)
- # Emergence date changed from April -11 to April-10 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: The Met station was changed from Little Rock, AR to Jackson, MS. This station is geographically closer and is within the center of the region represented by this scenario. Refer to SRC Oct 31, 2005 deliverable for more information. (10/31/05)
- # SFAC changed from 0.25 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

#### Summary File Change

- # CINTCP changed from 25 to 0.25. Value was changed according to Table 5.4 in PRZM manual (0.25 - 0.3) and harmonized with other corn scenarios. Please note that the value that was in the scenario file was 25 while the metadata was 0.25. (10/31/05)
- # RECORD9E inserted using CN=87 for cropping prd and 91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-10 is the first date. (10/31/05)

### **CLA Scenario Comments: (MScornC)**

#### Summary File Change

**CLA- In the PRZM summary file the maximum interception storage of crop is set to 25. It should**

EFED- No Comment

- # SRC- Previously addressed: CINTCP changed from 25 to 0.25 in summary file. (01/10/06)

~~~~~End of MScornC Revisions ~~~~~

## **MScottonC**

#### Both Meta and Summary

- # AMXDR: changed parameter from 60 to 65 to be consistent with advice of extension agent cited in CA cotton scenario metadata. This is also consistent with original source: PRZM table 5-9, which cites 30-90
- # ANETD changed from 17 to 25 as per PRZM Guidance rev. July 2004, and location of Yazoo County.
- # COVMAX: metadata source updated to be consistent with guidance and with other scenarios. Parameter value changed from 98 to 100. Original source was EXPRES. (01/11/06)
- # SFAC changed from 0.15 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Metadata meteorological station was changed to Jaskson, MS (W03940) to be consistent with scenario file. This is the nearest meteorological station to Yazoo county. (10/31/05)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # SLP: The source comment was changed to be consistent with guidance. The parameter value did not change. (01/11/06)
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

#### Summary File Change

- # HTMAX: changed from 120 to 122. Extension agent (TX) indicated that max height can be 4 feet (122 cm). Consistent with other cotton scenarios except NC (HTMAX=CORED=100). (02/06/06)
- # ITFLAG, IDFLAG and BIOFLAG were in records 11 and 20 of the scenario file. According to guidance, these parameters belong in record 20. Therefore, these parameters were removed from record 11. Date modified: 10-13-05. (10/31/05)
- # RECORD9E inserted using CN=86 for cropping prd and 89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-01 is the first date. (10/31/05)

### **CLA Scenario Comments: (MScottonC)**

**CLA- This scenario “crashed” when run using PRZM3.12.**

EFED- No Comment

# SRC- (01/10/06)

**CLA- The documentation states that the crop may be irrigated by furrow or canal systems but no irrigation is simulated.**

EFED- No Comment

# SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

Both Meta and Summary**CLA- The PRZM summary file has 3 simultaneous crops of cotton in the field with varying runoff curve numbers. This is based on the previous calibrated MS cotton scenario from 1998. But the documentation only lists one crop with parameter values equal to those from the first cropping in the PRZM summary file.**

EFED- No Comment

# SRC- Previously addressed: The NDC was changed from 3 to 1 and record 9 was changed accordingly (record 9 is repeated the number of NDC times, so the second and third repetitions of this record were removed) (According to EFED guidance 6-2-05). Record 11 of scenario file was repeated 3 times for old NDC. Repetition was removed so that there is only one record 11. (01/10/06)

**CLA- The residue runoff curve number is 92 in the PRZM summary file but 32 in the**

EFED- No Comment

# SRC- The CNs for MS cotton were 99, 93, and 32 for the metadata and 99, 83, and 83 for the scenario. The CNs were changed to 89, 86, 87 to be consistent with current guidance: GLEAMS manual, Table H-4, for Hydrologic group C soils, Fallow SR/CT/poor, cropping and residue Row Crop SR/CT/poor condition. The tillage practices are consistent with those chosen for the NC cotton scenario (according to EFED guidance 6-2-05). (01/10/06)

**CLA- Pan evaporation factor is set to 0.74 in the PRZM summary file but 0.76 in the**

EFED- No Comment

# SRC- Pan Factor (PFAC) was changed from 0.74 to 0.75 to correspond to guidance and to other 2 MS scenarios. (01/10/06)

Metadata Change**CLA- In soil horizon #3, the compartment thickness is listed as 3 in the PRZM summary file and 11 in the documentation.**

EFED- No Comment

# SRC- Previously addressed: DPN in metadata changed to 3 to be consistent with guidance.

**CLA- The PRZM summary file lists only one cropping period with an emergence date of 5/1/1964, maturity date of 9/7/1964, and harvest date of 9/22/1964. The documentation lists the same month/days but with 36 cropping periods.**

EFED- No Comment

# SRC- Previously addressed: Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data. (01/10/06)

**CLA- The pan factor is set to 0 in the PRZM summary file but 2 in the documentation.**

EFED- No Comment

# SRC- IPEIND in metadata was 2, which conflicted with the value in the scenario file (0). According to guidance, this value should be 0, therefore, the metadata was changed to reflect this value.

Summary File Change



**CLA- In soil horizon #5, the organic carbon is listed as 0.124% in the PRZM summary file and 0.12% in the documentation.**

EFED- No Comment

- # SRC- This CLA comment is a typo, it actually applies to HORZN 4. Previously addressed: OC for HORIZNs 1 and 4 were inconsistent between metadata and scenario data. The OC in the scenario for HORIZN 4 was changed from 0.124 to 0.12% to be consistent with metadata and with the significant digits of the other OC values. (01/10/06)

**CLA- In the PRZM summary file, for soil horizon 1, the organic carbon is listed as 2.18% but it is listed as 1.28% in the documentation.**

EFED- No Comment

- # SRC- Previously addressed: OC for HORIZNs 1 and 4 were inconsistent between metadata and scenario data. The OC in the scenario for HORIZN 1 was changed from 2.18 to 1.28% to be consistent with metadata and NRCS data (source). The NRCS data lists the OC for this soil horizon of Loring Soil to be 0.28-1.19%. (01/10/06)

**CLA- IREG is set to 4 in the PRZM summary file but 3 in the documentation.**

EFED- No Comment

- # SRC- IREG was 3 for metadata and 4 for scenario. Guidance recommends consulting figure 5.12 of the PRZM manual. In this figure, the correct value is difficult to determine because Yazoo county falls on the line between these two values. The IREG value for the MS soybean scenario is 3. Since this value should correspond to MS soybean, which is also in Yazoo county, the value for MS cotton was changed to 3. (01/10/06)

~~~~~End of MScottonC Revisions ~~~~~

## **MSsoybeanC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 25 as per PRZM Guidance rev. July 2004, and location of Yazoo County.
- # Emergence date changed from April-15 to April-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: The MS soybean met station was changed to Jackson in order to be consistent with the MS cotton scenario and with guidance. The Jackson station is geographically closer to the scenario location. Refer to SRC Oct 31, 2005 deliverable for more information. (10/31/05)
- # SFAC changed from 0.25 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual)

### **Metadata Change**

- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

### **Summary File Change**

- # RECORD9E inserted using CN=84 for cropping prd and 87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)
- # The soil description in the scenario file was different from the descriptions in the MS cotton scenario, even though these scenarios share the same soil type. The STITLE of the MS soybean scenario was changed to be consistent with the soil description of MS cotton. (10/31/05)
- # WFMAL value was left blank in scenario file. A value of 0 was added to the scenario file for WFMAL in accordance with guidance. (10/31/05)

## **CLA Scenario Comments: (MSsoybeanC)**

**CLA- The documentation states that the crop may be grown with furrow or canal irrigation but no irrigation is simulated.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

#### Both Meta and Summary

**CLA- The USLELS is listed as 0.0151 in the PRZM summary file and 0.051 in the documentation.**

EFED- No Comment

- # SRC- USLELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . (01/10/06)

#### Metadata Change

**CLA- For soil horizon #6, the compartment thickness is listed as 3 in the PRZM summary file and 33 in the documentation.**

EFED- No Comment

- # SRC- DPN changed to 3 to be consistent with guidance. (01/10/06)

**CLA- For soil horizon #4, the compartment thickness is listed as 5 in the PRZM summary file and 10 in the documentation.**

EFED- No Comment

- # SRC- DPN changed to 5 to be consistent with guidance. (01/10/06)

**CLA- For soil horizon #3, the compartment thickness is listed as 3 in the PRZM summary file and 11 in the documentation.**

EFED- No Comment

- # SRC- DPN changed to 3 to be consistent with guidance. (01/10/06)

**CLA- The USLEP is listed as 1 in the PRZM summary file and 0.75 in the documentation.**

EFED- No Comment

- # SRC- Guidance indicates that this value should be 1 (since contour plowing is not common). Metadata value was changed to 1. (01/10/06)

**CLA- The surface condition of the initial crop is listed as residue in the PRZM summary file and fallow in the documentation.**

EFED- No Comment

- # SRC- ISCOND was 1 in metadata and 3 in scenario data. Since this is the only crop, it follows that the initial surface condition (ISCOND) would be consistent with the soil surface condition after harvest (ICNAH). Since the ICNAH is 3, the metadata was changed to 3. (01/10/06)

#### Summary File Change

**CLA- For soil horizon #4, the organic carbon is listed as 0.124% in the PRZM summary file and 0.12% in the documentation.**

EFED- No Comment

- # SRC- The OC in the scenario for HORIZN 4 was changed from 0.124 to 0.12% to be consistent with metadata and with the significant digits of the other OC values. (01/10/06)

**CLA- For soil horizon #1, the organic carbon is listed as 2.18% in the PRZM summary file and 1.28% in the documentation.**

EFED- No Comment

- # SRC- The OC in the scenario for HORIZN 1 was changed from 2.18 to 1.28% to be consistent with metadata and NRCS data (source). The NRCS data lists the OC for this soil horizon of Loring Soil to be 0.28-1.19%. (01/10/06)

~~~~~End of MSsoybeanC Revisions ~~~~~

## NCalfalfaC

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPNs of HORZN 2 was changed from 1 to 5, HORZN 3 was changed from 1 to 3, HORZN 4 was changed from 2 to 4. (10/31/05)
- # Emergence date was changed from April-05 to April-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # USLEK changed from 0.29 (PIC) to 0.24; Soil Data Mart (NRCS) for Rowan County, PA. Data for Helena sandy loam, 1-6% slopes, surface horizon. (02/06/06)

### Metadata Change

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. (01/16/06)
- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Bristol, TN, while the scenario file referenced Asheville, NC. The metadata was changed to reflect the scenarios reference to the Asheville meteorological station. The Asheville, NC station is located in the western region of the state, which is represented by this scenario. Also, this is consistent with the meteorological station of the other two NC western scenarios: Apples (Western) and Corn (Western).
- # NCPDS of metadata changed from 36 to 26 to correspond to number of years of meteorological data (and with scenario file). (10/31/05)
- # Starting and ending dates in metadata changed from 1948-1983 to 1965-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### Summary File Change

- # MLRA changed to 136 in the PRZM summary file, HTITLE line. The soil for this Western North Carolina scenario, Helena sandy loam, was found only in Rowan county (Soil Data Mart) which is in MLRA 136 (Southern Piedmont). There was no reference to the MLRA in the Metadata, so this was not changed or
- # RECORD9E inserted using CN=83 for cropping prd and CN=87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-01 is the first date. (10/31/05)

## CLA Scenario Comments: (NCalfalfaC)

### Both Meta and Summary

#### **CLA- The snowmelt factor is listed as 0.2 in the PRZM summary file and 0.25 in the**

EFED- I'm not sure which of these numbers is "correct". I recommend modifying the language in the documentation to say 0.2 for this parameter, so that at least they are consistent.

- # SRC- According to guidance, this value is derived from table 5.1 of the PRZM 3 manual. "Use the maximum value of the minimum range of values for the specific coverage based on the crop for scenarios. For row crops use the 'open areas' range of values.." The minimum range for open areas is 0.2-0.36. Therefore, this value was changed to 0.36 (05/05/05)

~~~~~End of NCalfalfaC Revisions ~~~~~

## NCappleC

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 2 to 3, HORZN 3 was changed from 2 to 4. (10/31/05)
- # Emergence date changed from April-07 to April-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.2 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (02/14/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

### Metadata Change

- # COVMAX: inconsistencies with other apple scenarios justified in metadata as being due to different sources. (02/03/06)
- # Metadata source of SLP was updated to be consistent with guidance. The parameter value was not changed. (01/11/06)
- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Bristol, TN, while the scenario file referenced Asheville, NC. The metadata was changed to reflect the scenarios reference to the Asheville meteorological station. The Asheville, NC station is located near Henderson County, in the western part of the state, which is represented by this scenario. Also, this is consistent with the meteorological station of the other two NC western scenarios: Alfalfa(Western) and
- # NCPDS of metadata changed from 36 to 26 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata changed from 1948-1983 to 1965-1990, according to dates of meteorological file. (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-01 is the first date. (10/31/05)

~~~~~End of NCappleC Revisions ~~~~~

## NCcornEC

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004. (10/31/05)
- # DPN of HORZN 2 was changed from 2 to 4, HORZN 3 was changed from 2 to 3. (10/31/05)
- # Emergence date changed from April-11 to April-15 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.15 to 0.36 to be consistent with guidance and NC alfalfa (see SRC response to CLA and EFED comments). (10/31/05)

#### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # Changed MLRA from 133 to 153A. Pitt county almost entirely in 153A and description fits scenario.
- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-15 is the first date. (10/31/05)
- # The soil description in the scenario file was different from the descriptions in the NC sweetpotato scenario, even though these scenarios share the same soil type. The soil description located in the metadata and scenario file were changed to indicate that it is a benchmark series, which matched the original description in the NC sweetpotato files. The descriptions of the three PRZM scenarios (NC corn East, NC sweetpotato and NC peanut) with this soil series are now consistent. (10/31/05)

## CLA Scenario Comments: (NCcornEC)

#### Metadata Change

**CLA- Weather used in the scenario is from Montgomery, Alabama. Weather should be from a station nearer to eastern North Carolina such as Raleigh-Durham.**

EFED- No Comment

- # SRC- Previously addressed: Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Montgomery, AL, while the scenario file referenced Raleigh, NC. The metadata was changed to reflect the scenarios reference to the Raleigh meteorological station. The Raleigh, NC station is located near Pitt County, in the Eastern part of the state, which is represented by this scenario. Also, this is consistent with the meteorological station of the other NC Eastern scenarios (sweet potato, cotton, tobacco). (01/10/06)

~~~~~End of NCcornEC Revisions ~~~~~

## **NCcornWC**

### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # CINTCP changed in PRZM summary file from 0.3 to 0.25. Value was changed according to Table 5.4 in PRZM manual (0.25 - 0.3) and harmonized with other corn scenarios. (10/31/05)
- # Emergence date changed from April-26 to April-25 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.2 to 0.36 to be consistent with guidance and NC alfalfa (see SRC response to CLA and EFED comments). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # ICNAH: updated source to remove PIC reference. Value is consistent with NE corn E scenario. No change to parameter value. (02/06/06)
- # Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Bristol, TN, while the scenario file referenced Asheville, NC. The metadata was changed to reflect the scenarios reference to the Asheville meteorological station. The Asheville, NC station is located near Henderson County, in the western part of the state, which is represented by this scenario. Also, this is consistent with the meteorological station of the other two NC western scenarios: Alfalfa(Western) and
- # NCPDS of metadata changed from 36 to 26 to correspond to number of years of meteorological data.
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)
- # Starting and ending dates in metadata changed from 1948-1983 to 1965-1990, according to dates of meteorological file. (10/31/05)

### Summary File Change

- # HTMAX: changed from 100 to 300 to be consistent with other corn scenarios, including NC corn East, which was derived from an extension agent. (02/07/06)
- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-25 is the first date. (10/31/05)

~~~~~End of NCcornWC Revisions ~~~~~

## **NCcottonC**

### Both Meta and Summary

- # AMXDR: changed parameter from 60 to 65 to be consistent with advice of extension agent cited in CA cotton scenario metadata. This is also consistent with original source: PRZM table 5-9, which cites 30-90
- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004. (10/31/05)

- # COVMAX: updated to be consistent with guidance and with other scenarios. Parameter value was changed from 98 to 100. (01/11/06)
- # DPN of HORZN 2 was changed from 1 to 2. (10/31/05)
- # SFAC changed from 0.15 to 0.36 to be consistent with guidance and NC alfalfa (see SRC response to CLA and EFED comments). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # NCPDS of metadata changed from 34 to 30 to correspond to number of years of meteorological data.
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)
- # Starting and ending dates in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

#### Summary File Change

- # HTMAX: No source in PRZM file. Harmonized to TX cotton scenario which cited extension agent..
- # RECORD9E inserted using CN=89 for cropping prd and CN=92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

### **CLA Scenario Comments: (NCcottonC)**

#### Metadata Change

**CLA- Weather used in the scenario is from Montgomery, Alabama. Weather should be from a station nearer to eastern North Carolina such as Raleigh-Durham.**

EFED- No Comment

- # SRC- Previously addressed: Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Montgomery, AL, while the scenario file referenced Raleigh, NC. The metadata was changed to reflect the scenarios reference to the Raleigh meteorological station. The Raleigh, NC station is located near the Piedmont/Costal Plane, which is represented by this scenario. Also, this is consistent with the meteorological station of the other NC

~~~~~End of NCcottonC Revisions ~~~~~

## **NCpeanutC**

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # COVMAX: changed from 80 to 100 based on advice of extension agent. (02/07/06)
- # DPN of HORZN 2 was changed from 2 to 4, HORZN 3 was changed from 2 to 3. (Inconsistency existed between metadata and scenario text file) (10/31/05)
- # SFAC changed from 0.15 to 0.36 to be consistent with guidance and NC alfalfa (see SRC response to CLA and EFED comments). (10/31/05)
- # To be consistent with the other scenarios in Pitt County, as well as with the closest available meteorological station, the NC peanut scenario was changed to Raleigh, NC (w13722). (10/31/05)

#### Metadata Change

- # ICNAH = 1 (fallow) in accordance with ISCOND. ICNAH in scenario file was originally = 1. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # Changed MLRA from 133 to 153A. Pitt county almost entirely within 153A and description matches scenario. (10/31/05)
- # RECORD9E inserted using CN=84 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May 16 is the first date. (10/31/05)

- # The soil description in the scenario file was different from the descriptions in the NC sweetpotato scenario, even though these scenarios share the same soil type. The soil description located in the metadata and scenario file were changed to indicate that it is a benchmark series, which matched the original description in the NC sweetpotato files. The descriptions of the three PRZM scenarios (NC corn East, NC sweetpotato and NC peanut) with this soil series are now consistent. (10/31/05)

## **CLA Scenario Comments: (NCpeanutC)**

**CLA- About 10% of the N.C. peanut crop is grown under irrigation but no irrigation is simulated.**

EFED- This is not an error.

- # SRC- No action. (05/10/05)

### **Both Meta and Summary**

**CLA- The emergence month/day is listed as 5/10 in the PRZM summary file and 4/11 in the documentation.**

EFED- The dates in the model should remain. They were chosen to be consistent with the USDA crop profile for NC peanuts.

- # SRC- Metadata file was revised so that emergence month/day is May-16 as per new guidance to associate emergence date with first RUSLE date. (05/10/05)

### **Metadata Change**

**CLA- The starting year for W13737.met is 1949, not 1948. The total number of simulation years is 35 instead of 36 as listed in the documentation.**

EFED- The documentation should be corrected.

- # SRC- The data available for this met file are for 1961-1990. The metadata was changed to reflect this date range. Also, the NCPDS was changed to 30. (05/10/05)

**CLA- The maturity month/day is listed as 10/1 in the PRZM summary file and 8/28 in the**

EFED- The dates in the model should remain. They were chosen to be consistent with the USDA crop profile for NC peanuts.

- # SRC- Metadata file was revised so that maturity month/day is 10/01. (05/10/05)

**CLA- The harvest month/day is listed as 10/10 in the PRZM summary file and 9/12 in the**

EFED- The dates in the model should remain. They were chosen to be consistent with the USDA crop profile for NC peanuts.

- # SRC- Metadata file was revised so that harvest month/day is 10/10. (05/10/05)

**CLA- Initial surface condition after crop harvest is listed as fallow in the PRZM summary file and residue in the documentation.**

EFED- The documentation should be revised. The American Peanut Council web page (as of 8/15/01 <http://peanutsusa.com/what/growing>) reported that the vine is returned to the field to improve soil fertility or baled into hay for livestock feed. Returning the residue to the field is the more conservative choice. The choice of "fallow" over "residue" allows degradation by aerobic soil metabolism instead of default values for foliar degradation and washoff.

- # SRC- Metadata file was revised so that ISCOND = 1 (fallow). (05/10/05)

~~~~~End of NCpeanutC Revisions ~~~~~

## **NCsweetpotatoC**

### **Both Meta and Summary**

- # ANETD changed from 15 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 2 to 4, HORZN 3 was changed from 2 to 3. (10/31/05)
- # SFAC changed from 0.15 to 0.36 to be consistent with guidance and NC alfalfa (see SRC response to CLA and EFED comments). (10/31/05)

### **Metadata Change**

- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May 15 is the first date. (10/31/05)

~~~~~End of NCsweetpotatoC Revisions ~~~~~

## NCtobaccoC

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Emergence date changed from April 11 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.

#### Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

## CLA Scenario Comments: (NCtobaccoC)

#### Metadata Change

**CLA- Weather used in the scenario is from Montgomery, Alabama. Weather should be from a station nearer to eastern North Carolina such as Raleigh-Durham.**

EFED- No Comment

- # SRC- Previously addressed: Meteorological station ID was inconsistent between metadata and scenario file. The metadata referenced Montgomery, AL, while the scenario file referenced Raleigh, NC. The metadata was changed to reflect the scenarios reference to the Raleigh meteorological station. The Raleigh, NC station is located near Pitt and Johnston Counties, in the Eastern part of the state, which is represented by this scenario. Also, this is consistent with the meteorological station of the other NC Eastern scenarios (sweet potato, cotton, Eastern corn).

~~~~~End of NCtobaccoC Revisions ~~~~~

## NDcanolaC

#### Both Meta and Summary

- # ANETD changed from 12 to 12.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Emergence Date changed from May-15 to May-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # NCPDS changed from 36 to 28 to match MetFile:W24013.dvf (10/31/05)
- # SFAC changed from 0.5 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Changed header in table 4 to Hamerly Loam to be consistent with intro and scenario file. (10/31/05)
- # MetFile Dates changed to 1961 to 1988 to match MetFile:W24013.dvf (10/31/05)
- # NCPDS changed from 30 to 28 to match MetFile:W24013.dvf (10/31/05)

#### Summary File Change



- # CFLAG was blank; Changed to "0" to match all other scenarios and Guidance document. Note: Chapter 5 indicates that this should be blank if ILP is "0" (which it is). The "Parameter Name and Guidance" field in the txt file and txt file template indicates that this should be blank if ILP is "0". However, the Guidance document dated July 2004 says: "set to '0' ". CFLAG and ILP for ALL other scenarios are both
- # Emergence (IYREM), maturity (IYRMAT), and harvest (IYRHAR) years changed from "48" to "61".
- # RECORD9E inserted using CN=82 for the cropping prd and 87 for the non-cropping prd. (10/31/05)
- # RUSLE dates moved so that May-16 is the first date. (10/31/05)

~~~~~End of NDcanolaC Revisions ~~~~~

## NDcornC

### Both Meta and Summary

- # ANETD changed from 17 to 12.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 0.1 to 4, HORZN 3 was changed from 2 to 3, HORZN 4 was changed from 2 to 4. (10/31/05)
- # Land Slope% (SLP) changed from 2% to 1.5% to match Bearden Silty Clay Loam for MNalfalfa which was corrected by Jim Wolf. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # Meteorological dates changed to 1961-1990. (10/31/05)
- # NCPDS changed from 36 to 30 to match MetFile and txt file. (10/31/05)

### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C Factors moved so that May-05 is the first date. (10/31/05)

## CLA Scenario Comments: (NDcornC)

**CLA- The documentation states that the crop is often grown under irrigation but irrigation is not simulated.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

### Both Meta and Summary

**CLA- For soil horizon #2, the compartment thickness is listed as 0.1 in the PRZM summary file and 2.0 (correct value) in the documentation.**

EFED- No Comment

- # SRC- Previously addressed: the DPN was changed to 4 to be consistent with guidance. (01/10/06)

### Metadata Change

**CLA- For soil horizon #4, the organic carbon is listed as 0.116% in the PRZM summary file and 0.058% in the documentation.**

EFED- No Comment

- # SRC- The the metadata was altered to be consistent with the summary file. (01/10/06)

**CLA- For soil horizon #3, the organic carbon is listed as 0.174% in the PRZM summary file and 0.116% in the documentation.**

EFED- No Comment

# SRC- The metadata was altered to be consistent with the summary file. (01/10/06)

**CLA- For soil horizon #2, the organic carbon is listed as 4.06% in the PRZM summary file and 1.74% in the documentation.**

EFED- No Comment

# SRC- The metadata was altered to be consistent with the summary file. (01/10/06)

**CLA- For soil horizon #1, the organic carbon is listed as 4.06% in the PRZM summary file and 1.74% in the documentation.**

EFED- No Comment

# SRC- The metadata was altered to be consistent with the summary file. (01/10/06)

**CLA- Fallow runoff curve number is listed as 89 in the PRZM summary file and 88 in the**

EFED- No Comment

# SRC- First Curve Number changed from 88 to 89 to match txt file. (01/10/06)

~~~~~End of NDcornC Revisions ~~~~~

## **NDwheatC**

### **Both Meta and Summary**

- # NHORIZ was changed from 3 to 4. DPN values were then changed to be consistent with 2004 guidance: HORZN 2 was changed from 1 to 4, HORZN 3 was changed from 2 to 3, HORZN 4 was changed from 2
- # ANETD changed from 12 to 12.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # COVMAX: the value was changed from 100 to 99 to be consistent with value for TX cotton. This value was obtained from an extension agent. (01/11/06)
- # Emergence Date changed from May-15 to May-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.5 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # AMXDR: justified inconsistencies in parameters from different wheat scenarios due to different sources. Parameter value did not change. (01/16/06)

### **Summary File Change**

- # HTMAX: original source was PIC. Parameter changed from 100 to 90 to be consistent with advice from extension agent cited by TX wheat scenario. (02/03/06)
- # Maximum Active Root Depth (AMXDR) was changed from 22 to 23 to be consistent with other scenarios and consistent with Guidance (Table 5.9 midpoint rounded up) (10/31/05)
- # RECORD9E inserted using CN=85 for cropping prd and 91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-16 is first date. (10/31/05)

## **CLA Scenario Comments: (NDwheatC)**

### **Both Meta and Summary**

**CLA- It was also determined that incorrect Organic Carbon content values were used in the ND wheat scenario.**

EFED- The incorrect values used were 1.74, 0.116, and 0.058 percent for Horizon 1, 2 and 3, respectively. The correct values are 4.06, 0.174, and 0.116 percent for horizons 1 and 2, 3, and 4, respectively.

# SRC- The OC values were updated in the NDwheatC.txt file and the Metadata. (10/31/05)

### **Metadata Change**

**CLA- No Comment**

EFED- The PRZM input NCPDS (number of cropping periods was changed to 30 from 36) in both input file and metadata file to reflect the change in meteorological files.

- # SRC- NCPDS was changed from 36 to 30 to reflect MetFile and txt file. (10/31/05)

**CLA- No Comment**

EFED- The meteorological file covers the period January 1, 1961 to December 31, 1990 (30 years) rather than the previous period January 1, 1948 to December 31, 1983 (36 years). The number of cropping years was changed from 36 to 30 to be consistent with the meteorological files.

- # SRC- Metadata dates and NCPDS were changed to reflect MetFile and txt file. (10/31/05)

**CLA- The annual harvest month/day were not consistent between the PRZM summary file (8/5) and the documentation (8/8). The harvest date were changed to be in agreement (8/5). The 8/5 date is from the RUSLE database.**

EFED- The harvest date were changed to be in agreement (8/5). The 8/5 date is from the RUSLE

- # SRC- Metadata Harvest Date was changed from Aug-08 to Aug-05. (10/31/05)

Summary File Change

**CLA- Discrepancies were noted between number of soil horizon, the PRZM input file had 3 and the documentation had 4.**

EFED- The basic soil properties for the Bearden soil obtained for the North Dakota Wheat Scenario were obtained from the PIC database (Burns et al, 1992).

When the scenario was constructed it was intended to the soil divided into 4 horizons (NHORIZ = 4)(an 18 cm surface horizon was split into 10 and 8 cm), so that horizon 1 could use a 0.1 cm compartment thickness (THKNS) and horizon 2 would have THKNS value of 1 cm, the other two horizons had THKNS set to 2 cm. Thus, an additional horizon was added. Horizon 1 and 2 have would have the same properties, but different compartment thicknesses (THKNS)and compartment thickness (DPN). The input variables: NHORIZ, THKNS, BD, THETO,DPN, THEFC, and THEWP were changed to correspond with the difference in horizon thickness (Table 2).

- # SRC- NDwheatC.txt file was updated with the Bearden silty clay loam soil parameters (THKNS, DPN,THETO, THEFC, THEWP and OC) shown in Table-2 provided by EFED. Metadata was also updated to match the txt file. (10/31/05)

~~~~~End of NDwheatC Revisions ~~~~~

## **NYgrapesC**

Both Meta and Summary

- # ANETD changed from 15 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 1 to 2, HORZN 3 was changed from 2 to 3. (10/31/05)
- # Emergence date changed from May 31 to June 1 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.30 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (10/31/05)
- # The maturity date was changed to July 1 to represent the maturity of the leaves. This was done in parallel with change made to CA grapes that resulted from CLA comment. Original value was Aug 22, source: Set to fruit ripening (veraison); Phillip Throop (viticulture specialist), Cornell University and Fredonia Regional Extension; pthroop@cce.cornell.edu (716) 672-2191. (02/23/06)

Metadata Change

- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

Summary File Change

- # Changed MLRA from 100/140 to 100/101. (10/31/05)
- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)

~~~~~End of NYgrapesC Revisions ~~~~~

## **OHcornC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORIZN 2 was changed from 2 to 4, HORIZN 3 was changed from 6 to 3. (10/31/05)
- # Maximum Active Root Depth (AMXDR) changed from 100 cm to 90 cm to be consistent with Table 5.9 PRZM Manual, midpoint for corn, and consistent with other corn scenarios. Previously referenced website for 100 cm no longer exists ([http://wa.nacdnet.org/partnership/root\\_zone.htm](http://wa.nacdnet.org/partnership/root_zone.htm)). Previous metadata also said it was set to soil profile depth. (10/31/05)
- # SFAC changed from 0.30 to 0.3 in accordance with guidance (table 5.1 of the PRZM manual)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates in metadata were changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

### **Summary File Change**

- # HTMAX: changed from 100 to 300 to be consistent with other corn scenarios. (02/07/06)
- # RECORD9E inserted using CN=87 for cropping prd and CN=91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-01 is the first date. (10/31/05)
- # TITLE: Changed from IL corn to OH corn (02/22/06)

~~~~~End of OHcornC Revisions ~~~~~

## **ORappleC**

### **Both Meta and Summary**

- # AMXDR: Extension agent contacted to confirm crop specific parameters. AMXDR changed from 45 to 148. (02/03/06)
- # COVMAX: Extension agent contacted to confirm crop specific parameters. COVMAX changed from 98 to 75. (02/03/06)
- # Extension agent contacted to confirm crop specific parameters. Emergence date changed from May 1 to April 1. Maturity date changed from May 31 to April 30. Harvest date changed from Nov 7 to Oct 31. Record 9E adjusted according to new emergence and harvest dates. (02/03/06)
- # SFAC) changed from 0.15 to 0.16 to be consistent with PRZM Guidance for orchards and other Marion county scenarios. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # COVMAX: inconsistencies with other apple scenarios justified in metadata as being due to different sources. (02/03/06)
- # NCPDS changed from 36 to 30. (10/31/05)
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)

### **Summary File Change**

- # HTMAX: Extension agent contacted to confirm crop specific parameters. HTMAX changed from 240 to 425 (extension agent indicated that based on crop practices, trees are maintained at a max ht of 14 feet). PA and NC apple scenarios previously set at 425 cm, therefore, this value was confirmed.
- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)

- # RUSLE dates and C factors moved so that April-01 is the first date. (10/31/05)
- # The meteorological station was changed to the Salem (W24232) station in order to be consistent with the most geographically relevant meteorological station; as well as the other scenarios represented by Marion County. (10/31/05)

## **CLA Scenario Comments: (ORappleC)**

### **Both Meta and Summary**

**CLA-** The minimum depth from which evaporation is extracted is listed as 15 cm in the PRZM summary file and 17 cm in the documentation.

EFED- The documentation should be revised. The depth of 15 cm was derived from Figure 5.2 of the PRZM manual, as instructed in the PRZM standard scenario guidance.

- # SRC- ANETD was listed in the metadata as 15 cm. However, the Guidance indicates that the midpoint of the range of values on the map should be chosen (i.e., Range = 15-20; midpoint = 17.5). Value changed to 17.5 (10/31/05)

~~~~~End of ORappleC Revisions ~~~~~

## **ORberriesC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 17.5 to be consistent with PRZM Guidance and other Marion county scenarios. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 5, HORZN 4 was changed from 2 to 5, HORZN 7 was changed from 10 to 5. (10/31/05)
- # Emergence Date changed from Apr-07 to Apr-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Pan Factor (PFAC) was changed from 0.73 to 0.74 to be consistent with PRZM Guidance and other Marion County scenarios. (10/31/05)
- # SLP: Source is not consistent with guidance. According to metadata soil description, slope is 0-55%. Since maximum value is >12%, value for orchard crop is set to 12%. SLP was changed from 5% to 12%.
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # Meteorological dates changed to 1961 to 1990, NCPDS changed from 36 to 30 to match Meteorological file. (10/31/05)
- # THKNS typo for Horizon 5 (HORIZN=2 changed to HORIZN=5). (10/31/05)

### **Summary File Change**

- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates moved so that Apr-01 is the first date. (10/31/05)

~~~~~End of ORberriesC Revisions ~~~~~

## **ORfilbertsC**

### **Both Meta and Summary**

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 3 was changed from 1 to 5. (10/31/05)
- # Emergence Date changed from Mar-05 to Mar-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.2 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (02/14/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # Meteorological station selection: Provided justification in the metadata for why the scenario is not associated with the closest available station. (02/10/06)
- # MetFile dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile. (10/31/05)
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)

#### Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd and 84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C Factors moved so that Mar-01 is first date. (10/31/05)

~~~~~End of ORfilbertsC Revisions ~~~~~

## ORgrasseedC

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 2 to 4. (10/31/05)
- # Emergence Date changed from Spt-15 to Spt-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.15 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Metadata listed two counties in separate places. Intro lists Linn county - table headers Linn. Data appear to be representative of both counties. Changed headers to include Linn county. (10/31/05)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)

#### Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd (Sept thru June) and 84 for non-cropping prd (July thru Sept). (10/31/05)
- # RUSLE dates and C factors moved so that Spt-16 is the first date. (10/31/05)
- # WFMAX value was null/missing. Changed to "0" (10/31/05)

## CLA Scenario Comments: (ORgrasseedC)

#### **CLA- Crop height missing in PRZM summary file.**

- EFED- No Comment
- # SRC- (01/10/06)

#### Metadata Change

#### **CLA- Surface condition of initial crop set to residue in PRZM summary file and fallow in**

- EFED- No Comment
- # SRC- Previously addressed: Initial Surface Condition (ISCOND) changed from 1 to 3 to match ORgrasseedC.txt file; Note said "set to residue" which is a value of "3". (01/10/06)

#### Summary File Change

#### **CLA- PRZM summary file says OR/WA Snap beans.**

- EFED- No Comment
- # SRC- HTITLE of summary file changed to OR GrassSeed. (01/10/06)

~~~~~End of ORgrasseedC Revisions ~~~~~

## ORhopsC

Both Meta and Summary

- # ANETD changed from 17 to 17.5 to be consistent with PRZM Guidance and other Marion county scenarios. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 5, HORZN 4 was changed from 2 to 5, and HORZN 7 was changed from 10 to 5. (10/31/05)
- # Emergence Date changed from Mar-30 to Apr-01 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Pan Factor (PFAC) was changed from 0.73 to 0.74 to be consistent with PRZM Guidance and other Marion County scenarios. (10/31/05)
- # SFAC changed from 0.16 to 0.36 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for row crops. The snowmelt factor determines the rate of snowmelt. The factor is influenced by factors such as vegetative cover and slope aspect. A lower number results in slower snowmelt. WA Hops profile (cited by OR Hops for cultural practices) indicates that Hops are cut at ground level and removed from the field at harvest time. With the canopy removed, this crop will have a snowmelt factor more similar to field crops (canopy removed) than orchard crops. (02/15/06)
- # SLP changed from 5 to 6 to be consistent with guidance. (02/01/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

Metadata Change

- # THKNS typo for Horizon 5 (HORIZN=2 changed to HORIZN=5). (10/31/05)

Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates moved so that Apr-01 is the first date. (10/31/05)

**CLA Scenario Comments: (ORhopsC)****CLA- No Comment**

EFED- The PRZM input NCPDS (number of cropping periods was changed to 30 from 36) in both input file and metadata file to reflect the change in meteorological files.

- # SRC- NCPDS was changed from 36 to 30 in the Metadata. (10/31/05)

**CLA- According to documentation, hops require “abundant irrigation for maximum yield”. Irrigation is to begin in May and continue through early June. But no irrigation is simulated.**

EFED- The irrigation subroutine is not used (not turned on), because there are some issues concerning whether this subroutine works properly. Once PRZM code has been corrected to fix this issue irrigation will be turned on. These changes have been made to the Oregon Hop Scenario and the Oregon Hop metadata file.

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

**CLA- The review of Standard Scenario submitted by Croplife America and prepared by T. Estes (10/18/02) identified two inconsistencies between the PRZM input file (ORhopsC.txt) and the Oregon Hop documentation (metafile).**

EFED- No Comment

- # SRC- See comments. (10/31/05)

Metadata Change**CLA- No Comment**

EFED- The meteorological file covers the period January 1, 1961 to December 31, 1990 (30 years) rather than the previous period January 1, 1948 to December 31, 1983 (36 years). The number of cropping years was changed from 36 to 30 to be consistent with the meteorological files.

- # SRC- The Starting Date in the Metadata file was changed from January 1, 1948 to January 1, 1961, and the Ending Date was changed from December 31, 1983 to December 31, 1990.

Summary File Change

**CLA- USLE P factor listed as 0.5 in PRZM summary file and 1.0 in documentation.**

EFED- The USLE P factor will be changed to 1 in the PRZM Input file to be consistent with the metadata file and the input guidance which recommends that P be set to 1.0 for orchards. These changes have been made to the Oregon Hop Scenario and the Oregon Hop metadata file.

- # SRC- USLEP was changed from 0.5 to 1 in the input file ORhopsC.txt (10/31/05)

~~~~~End of ORhopsC Revisions ~~~~~

**ORMintC****Both Meta and Summary**

- # ANETD changed from 15 to 17.5 to be consistent with PRZM Guidance and other Marion county scenarios. (10/31/05)
- # SFAC changed from 0.15 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # The metadata originally cited the use of a general slope value, which is inconsistent with current guidance. The slope description is 0-4%. With this description, the SLP was changed from 4 to 2%.
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

**Metadata Change**

- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.
- # USLE C Factor Range: Maximum changed from 0.381 to 0.331 to match ORMintC.txt file. (10/31/05)

**Summary File Change**

- # RECORD9E inserted using CN=79 for cropping prd and 84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C Factors moved so that Apr-15 is the first date. (10/31/05)

**CLA Scenario Comments: (ORMintC)**

**CLA- Irrigation is listed as mandatory in the documentation due to heavy water demand by mint, but no irrigation is simulated.**

EFED- The scenario should be revised.

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

~~~~~End of ORMintC Revisions ~~~~~

**ORsnbeanC****Both Meta and Summary**

- # ANETD changed from 17 to 17.5 to be consistent with PRZM Guidance and other Marion county scenarios. (10/31/05)
- # Crop specific parameters for bean scenarios were harmonized. Advice of OR extension agent was obtained. COVMAX changed from 80 to 100. AMXDR changed from 18 to 38. HTMAX changed from 50
- # DPN of HORZN 2 was changed from 2 to 4. (10/31/05)
- # Emergence Date changed from Jun-11 to Jun-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # ISCOND in Metadata reads "Set to residue prior to new crop planting", however, value in both Metadata and txt file was 1 (residue = 3). ISCOND in txt and metadata changed to 3. (10/31/05)
- # SFAC changed from 0.15 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

**Metadata Change**

- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)



Summary File Change

- # RECORD9E inserted using CN=89 for cropping prd and CN=92 for non-cropping prd. (10/31/05)
- # RUSLE dates moved so that Jun-16 is the first date. (10/31/05)

**CLA Scenario Comments: (ORsnbeanC)**

**CLA- The documentation states that the crop is mostly grown under irrigation by a variety of overhead sprinkler systems but no irrigation is simulated.**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

~~~~~End of ORsnbeanC Revisions ~~~~~

**ORswcornC**Both Meta and Summary

- # ANETD changed from 15 to 17.5 to be consistent with PRZM Guidance and other Marion county scenarios. (10/31/05)
- # DPN of HORZN 3 was changed from 2 to 5, HORZN 4 was changed from 2 to 5, and HORZN 7 changed from 10 to 5. (10/31/05)
- # Emergence Date changed from May-10 to May-16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.15 to 0.36 as per PRZM Guidance July2004 (10/31/05)

Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # Meteorological dates changed to 1961 to 1990, NCPDS changed from 36 to 30 to match Meteorological file. (10/31/05)
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)
- # THKNS typo for Horizon 5 (HORIZN=2 changed to HORIZN=5). (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

Summary File Change

- # RECORD9E inserted using CN=85 for cropping prd and CN=91 for non-cropping prd. (10/31/05)
- # RUSLE dates moved so that May-16 is the first date. (10/31/05)

**CLA Scenario Comments: (ORswcornC)**

**CLA- For soil horizon #5 in the documentation, the horizon thickness (THKNS) is omitted. It should be 50 cm.**

EFED- This can easily be fixed.

- # SRC- THKNS appears to have been added to original file before being delivered to SRC. No change made. (10/31/05)

~~~~~End of ORswcornC Revisions ~~~~~

**ORwheatC**

Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # COVMAX: the value was changed from 100 to 99 to be consistent with value for TX cotton. This value was obtained from an extension agent. (01/11/06)
- # DPN of HORZN 3 was changed from 2 to 4. (10/31/05)

Metadata Change

- # AMXDR: justified inconsistencies in parameters from different wheat scenarios due to different sources. Parameter value did not change. (01/16/06)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)
- # Surface Condition of Initial Crop (ISCOND) changed from "Set to residue prior to new crop planting" to "Residue removed from field during harvest" to match ORwheatC.txt File. Also value in txt file and metadata is set to 1=fallow. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

Summary File Change

- # HTMAX: original source was PIC. Parameter changed from 100 to 90 to be consistent with advice from extension agent cited by TX wheat scenario. (02/03/06)
- # RECORD9E inserted using CN=86 for the cropping prd and CN=92 for the non-cropping prd. (10/31/05)
- # RUSLE date and C factors moved so that Spt-01 is the first date. (10/31/05)

**CLA Scenario Comments: (ORwheatC)**Metadata Change

**CLA- The runoff curve numbers are listed as 92, 86, and 87 in the PRZM summary file but as 92,89, and 90 in the documentation.**

EFED- No Comment

- # SRC- Previously addressed (before SRC): values in metadata were altered to be consistent with summary file. (01/10/06)

Summary File Change

**CLA- In the PRZM summary file and the documentation, the emergence date is listed as September 1, the maturity date is listed as March 10 and the harvest date is listed as June 1 --- all in the same year. The emergence date should be in a year preceding the maturity and harvest**

EFED- No Comment

- # SRC- Dates for emergence were changed to 1960 in order to be consistent with cropping practices and timelines. (01/10/06)

~~~~~End of ORwheatC Revisions ~~~~~

**ORXmastreeC**Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 2 to 5. (10/31/05)

Metadata Change

- # NCPDS changed from 36 to 30 to match MetFile and txt file. (10/31/05)
- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)

Summary File Change

- # RECORD 9E inserted using CN=72 for cropping prd. (10/31/05)

## **CLA Scenario Comments: (ORXmastreeC)**

### **Both Meta and Summary**

**CLA- Cropping dates are set as emergence month/day as 4/15, maturity month/day as 8/15 and harvest month day as 10/30 of each year. Planted trees are 2-4 years old and are grown for 7 to 8 years to maturation. This doesn't seem to correspond to growth and root maturation of an evergreen over an eight year period. Any comments would be appreciated.**

EFED- No Comment

- # SRC- Emergence date was changed from April 16 to Jan 1. Maturity date was changed from Aug 15 to Feb 1. Harvest date changed from Oct 30 to Dec 31. Record 9E was changed accordingly. Changes made to model year round transpiration of this crop. (01/10/06)

### **Metadata Change**

**CLA- The USLE LS factor is listed as 0.693.62 in the documentation.**

EFED- No Comment

- # SRC- USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter.

**CLA- For soil horizon #3, the compartment thickness is listed as 5 in the PRZM summary file and 2 in the documentation.**

EFED- No Comment

- # SRC- DPN of metadata changed to 5 to be consistent with guidance. (01/10/06)

**CLA- USLE K factor is listed as 0.37 in PRZM summary file and 0.373 in documentation.**

EFED- No Comment

- # SRC- metadata value converted to 0.37. (01/10/06)

~~~~~End of ORXmastreeC Revisions ~~~~~

## **PAalfalfaC**

### **Both Meta and Summary**

- # All soil parameters updated to Soil Data Mart York County Database values for Glenville Silt Loam 3-8% slopes: USLEK changed from 0.33 to 0.32; CORED from 120 to 152; NHORIZ from 3 to 5. Horizons 1 & 2: BD from 1.4 to 1.3; THETO/FC from 0.254 to 0.33 and THEWP from 0.094 to 0.15 (both calculated using Rawls and Brakensiek method with data from SoilDataMart Database). Horizon 2: THKNS from 12 to 15. Horizon 3: THKNS from 98 to 23; BD from 1.8 to 1.5; THETO/FC from 0.201 to 0.31 THEWP from 0.121 to 0.16; OC from 0.174 to 0.15. Horizons 4 & 5 added. Note on inconsistency: Glenville Silt Loam from York County Database is slightly different from Lancaster County Database. (02/03/06)
- # DPN of HORZN 2 was changed from 2 to 4. (10/31/05)
- # Emergence date changed from April 15 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Changed from Allentown to Harrisburg station. Harrisburg is geographically closer to the scenario location. Refer to SRC March 2006 report for more details. (02/23/06)
- # SFAC changed from 0.3 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual) (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. (01/16/06)
- # Changed USLEP in documentation to be consistent with PRZM summary file. (10/31/05)
- # CORED value and number of horizons for turf scenario altered by addition of thatch layer to simulate turf production. Metadata altered to justify inconsistency with other scenarios with glenville silt loam soil series (PA alfalfa and PA tomato). (02/02/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates of meteorological file in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

Summary File Change

- # RECORD9E inserted using CN=83 for cropping prd and CN=87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

**CLA Scenario Comments: (PAalfalfaC)**Summary File Change

**CLA- The surface condition after crop harvest is listed as fallow in the PRZM summary file and residue in the documentation.**

EFED- No Comment

- # SRC- Changed ICNAH in scenario file from 1 to 3 to be consistent with metadata and similar alfalfa scenarios. (01/10/06)

~~~~~End of PAalfalfaC Revisions ~~~~~

**PAappleC**Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # DPN of HORZN 2 was changed from 7 to 4, and HORZN 3 was changed from 7.75 to 2. (10/31/05)
- # Emergence date changed from April 20 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Changed from Allentown to Harrisburg station. Harrisburg is geographically closer to the scenario location. Refer to SRC March 2006 report for more details. (02/23/06)
- # SFAC changed from 0.2 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

Metadata Change

- # Changed met file start and end dates in documentation to 1961 and 1990. (10/31/05)
- # Changed NCPDS to 30 in documentation, consistent with summary file. (10/31/05)
- # COVMAX: inconsistencies with other apple scenarios justified in metadata as being due to different sources. (02/03/06)

Summary File Change

- # RECORD9E inserted using CN=79 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

~~~~~End of PAappleC Revisions ~~~~~

**PAcornC**Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Emergence date changed from April 20 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Changed from Allentown to Harrisburg station. Harrisburg is geographically closer to the scenario location. Refer to SRC March 2006 report for more details. (02/23/06)
- # SFAC changed from 0.2 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual) (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel).

Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)

- # SLP: Source comment for SLP was updated to be consistent with guidance. Parameter value did not change. (01/11/06)

#### Summary File Change

- # Added WFMAX = 0 in PRZM summary file to be consistent with documentation. (10/31/05)
- # RECORD9E inserted using CN=83 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

### **CLA Scenario Comments: (PAcornC)**

#### Both Meta and Summary

**CLA- The maximum interception storage of crop (CINTCP) is listed as 17 cm in the PRZM summary file. Should be 0.17 cm as listed in the documentation.**

EFED- No Comment

- # SRC- CINTCP changed from 17 to 0.25. Value was originally generated by PIC. Value was changed according to Table 5.4 in PRZM manual (0.25 - 0.3) and harmonized with other corn

#### Metadata Change

**CLA- Soil horizon #2 has an initial water content (THETO) of 0.2942. Should be 0.242.**

EFED- No Comment

- # SRC- value converted to 0.242 in metadata. (01/10/06)

~~~~~End of PAcornC Revisions ~~~~~

## **PAtomatoC**

#### Both Meta and Summary

- # All soil parameters updated to Soil Data Mart Lancaster County Database values for Glenville Silt Loam 3-8% slopes: USLEK changed from 0.33 to 0.32; CORED from 100 to 157; NHORIZ from 3 to 5. Horizons 1 & 2: BD from 1.4 to 1.3; THETO/FC from 0.254 to 0.33 and THEWP from 0.094 to 0.15 (both calculated using Rawls and Brakensiek method with data from SoilDataMart Database). Horizon 2: THKNS from 12 to 13. Horizon 3: THKNS from 78 to 15; BD from 1.8 to 1.5; THETO/FC from 0.201 to 0.31 THEWP from 0.121 to 0.17; OC from 0.174 to 0.2. Horizons 4 & 5 added. Note on inconsistency: Glenville Silt Loam from Lancaster County Database is slightly different from York County Database.
- # DPN of HORZN 3 was changed from 2 to 5. (10/31/05)
- # Emergence date changed from April 15 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Met Station: Changed from Allentown to Harrisburg station. Harrisburg is geographically closer to the scenario location. Refer to SRC March 2006 report for more details. (02/23/06)
- # SFAC changed from 0.3 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual) (10/31/05)

#### Metadata Change

- # AMXDR: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value did not change. (01/16/06)
- # Changed met file start/end dates in documentation to 1961 and 1990. (10/31/05)
- # CORED value and number of horizons for turf scenario altered by addition of thatch layer to simulate turf production. Metadata altered to justify inconsistency with other scenarios with glenville silt loam soil series (PA alfalfa and PA tomato). (02/02/06)
- # COVMAX: justified inconsistencies in parameters from different tomato scenarios due to different sources. Parameter value did not change. (02/03/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # There was an inconsistency between the USLEC factors in the metadata and in the scenario file. The RUSLE project reference for the metadata was inconsistent with the reference for the MNGN value. The metadata was changed to include the USLEC values in the scenario file and the reference was verified with the RUSLE files. This reference was the same as the reference for the MNGN value. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

# USLEP changed in documentation to match PRZM summary file. (10/31/05)

### Summary File Change

# HTMAX: parameter file indicated this value was arbitrarily set to 40. The value was actually 160 in scenario file. Changed to 150 based on FL tomatoes scenario. (02/23/06)

# RECORD9E inserted using CN=83 for cropping prd and CN=87 for non-cropping prd. (10/31/05)

# RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

## **CLA Scenario Comments: (PAtomatoC)**

### Both Meta and Summary

**CLA- For soil horizon #3, the horizon thickness (THKNS) is listed as 78 cm in the PRZM summary file and as 98 cm in the documentation.**

EFED- Documentation should be changed to 78 cm

# SRC- Soil parameters, including horizon thicknesses, were updated with Soil Data Mart data.

**CLA- The total core depth is listed as 100 cm in the PRZM summary file and as 120 cm in the documentation.**

EFED- Documentation should be changed to 100 cm

# SRC- Soil parameters, including CORED, were updated with Soil Data Mart data. (10/31/05)

**CLA- The minimum depth from which evaporation is extracted (ANETD) is listed as 17 cm in the PRZM summary file and 12.5 cm in the documentation.**

EFED- Documentation should be changed to 17 cm

# SRC- ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)

### Metadata Change

**CLA- The month/day of harvest for each cropping year is listed as October 15 in the PRZM summary file and as October 31 in the documentation.**

EFED- Documentation should be changed to 10/15 for month/day of crop harvest.

# SRC- Changed documentation to Oct 15 for crop harvest. (10/31/05)

**CLA- The month/day of maturity for each cropping year is listed as June 30 in the PRZM summary file and as October 31 in the documentation.**

EFED- Documentation should be changed to 06/30 for month/day of crop maturation.

# SRC- Changed documentation to June 30 for crop maturation. (10/31/05)

**CLA- Manning's N value is listed as 0.011 in the PRZM summary file but as 0.11 in the**

EFED- Documentation should be changed to 0.011

# SRC- Changed Manning's N in documentation to 0.011 based on SB5BGBWC.dat RUSLE data file. Summary file cites SB5BGBWC.dat as the RUSLE data file, documentation was updated to reflect the source in the summary file. (10/31/05)

**CLA- The residue runoff curve number is listed as 85 in the PRZM summary file but as 86 in the documentation.**

EFED- Documentation should be changed to 85

# SRC- Changed residue runoff curve number to 85 in the documentation. (10/31/05)

**CLA- The maximum areal coverage of the canopy (COVMAX) is listed as 80% in the PRZM summary file and 100% in the documentation.**

EFED- Documentation should be changed to 80%

# SRC- Changed COVMAX to 80% in the documentation. (10/31/05)

**CLA- The maximum rooting depth (AMXDR) is listed as 20 cm in the PRZM summary file and 120 cm in the documentation.**

EFED- Documentation should be changed to 20 cm

# SRC- Changed AMXDR to 20 in the documentation. (10/31/05)

**CLA- The maximum interception storage of crop (CINTCP) is listed as 0.1 in the PRZM summary file and 0.25 in the documentation.**

EFED- Documentation should be changed to 0.1

# SRC- Changed CINTCP to 0.1 in the documentation. (10/31/05)

~~~~~End of PAtomatoC Revisions ~~~~~

## **PAturfC**

### **Both Meta and Summary**

- # All soil parameters updated to Soil Data Mart York County Database values for Glenville Silt Loam 3-8% slopes: USLEK changed from 0.33 to 0.32; CORED from 102 to 154; NHORIZ from 4 to 6. Horizon 1 thatch layer unchanged. Horizons 2 & 3: BD from 1.4 to 1.3; THETO/FC from 0.254 to 0.33 and THEWP from 0.094 to 0.15 (both calculated using Rawls and Brakensiek method with data from SoilDataMart Database). Horizon 3: THKNS from 12 to 15. Horizon 4: THKNS from 78 to 23; BD from 1.8 to 1.5; THETO/FC from 0.201 to 0.31 THEWP from 0.121 to 0.16; OC from 0.174 to 0.15. Horizons 5 & 56added. Note on inconsistency: Glenville Silt Loam from York County Database is slightly different
- # DPN of HORZN 2 was changed from 0.1 to 5, HORZN 3 was changed from 2 to 5, HORZN 4 was changed from 2 to 1. (10/31/05)
- # Met Station: Changed from Allentown to Harrisburg station. Harrisburg is geographically closer to the scenario location. Refer to SRC March 2006 report for more details. (02/23/06)
- # SFAC changed from 0.3 to 0.36 in accordance with guidance (table 5.1 of the PRZM manual) (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### **Metadata Change**

- # CORED value and number of horizons for turf scenario altered by addition of thatch layer to simulate turf production. Metadata altered to justify inconsistency with other scenarios with glenville silt loam soil series (PA alfalfa and PA tomato). (02/02/06)
- # NCPDS of metadata changed from 36 to 30 to correspond to number of years of meteorological data.
- # Starting and ending dates of meteorological file in metadata changed from 1948-1983 to 1961-1990, according to dates of meteorological file. (10/31/05)

### **Summary File Change**

- # CFLAG was blank. All other scenarios have CFLAG=0 as per Guidance document: "set to 0" (10/31/05)
- # RECORD9E inserted using CN=74 for cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-01 is the first date. (10/31/05)
- # Source comment for slope inconsistent with metadata. Deleted source to be consistent with metadata.

~~~~~End of PAturfC Revisions ~~~~~

## **PAvegetable**

### **Both Meta and Summary**

- # According to the metadata paragraph, the slope of this soil ranges from <15-45%. Therefore, according to guidance, since the maximum of the range is >12%, the SLP for an row crop scenario should be set to 6%. (01/11/06)
- # Soil data mart lists 4 soil horizons for Clarksburg silt loam. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 12 cm horizon. The 3rd and 4th horizons were combined as allowed in guidance when soil horizon properties are similar. DPN values were also changed to be consistent with 2004 guidance.
- # THEFC was changed to 0.32 from 0.38 as per gleams manual table H-3. (10/31/05)

- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # AMXDR: parameter value was changed to be consistent with PRZM manual (EPA 1998) and with other potato scenarios. (01/16/06)
- # CINTCP value was inconsistent with othe vegetable scenario (STXvegetable). The inconsistency was justified in the metadata since the PA vegetable scenario represents potato and pumpkin crops. The CINTCP value is consistent with other potato crop scenarios. Parameter value was not modified.
- # COVMAX: metadata altered to indicate that parameter corresponds to WA potato value. Value is not consistent with other vegetable scenarios because they represent different types of vegetables.

#### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-10 is the first date. (10/31/05)

### **CLA Scenario Comments: (PAvegetable)**

#### Both Meta and Summary

##### **CLA- No Comment**

- EFED- (3) Checked the other horizon parameters. All others seemed to be okay.
- # SRC- Also found error in USLEP factor. Scenario file changed from 4 to 1 to match metadata based on guidance and ID potato scenario. (10/31/05)

#### Summary File Change

##### **CLA- No Comment**

- EFED- (2) Original scenario carried the 1.8% OC value to all 3 horizons listed; revised to show OC content with depth as reported in the scenario metadata file.
- # SRC- revised to show OC content with depth as reported in the scenario metadata file. (10/31/05)

##### **CLA- No Comment**

EFED- Nelson Thurman: I found some minor errors in the PA vegetable scenario developed for the carbamate CRA. They were related to the soil horizon profile, but wouldn't really affect the runoff results. Here's what I found and did:

(1) Original scenario (PavegetableCRA.txt) omitted the 4th horizon [received warning that sum of horizons (132) < CORED (152)]. Added 4th horizon to input, with input parameters reported in the scenario metadata file.

- # SRC- Added 4th horizon to input, with input parameters reported in the scenario metadata file.

~~~~~End of PAvegetable Revisions ~~~~~

### **PRCoffee**

#### Summary File Change

- # Added Record 9E and verified first RUSLE date coincided with emergence date. (02/07/06)

~~~~~End of PRCoffee Revisions ~~~~~

### **STXcorn**

#### Both Meta and Summary

- # OC was corrected using the formula: %OC = %OM \* 0.6. Average %OM values for each horizon were obtained from soil data mart. (10/31/05)



- # The Number of Horizons described was changed from 3 to 4 in accordance with guidance. Soil data mart lists 3 soil horizons for Harlingen Clay Soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 18 cm horizon. The remaining two horizons matched the thicknesses given in soil data mart. DPN values

#### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # ISCOND was 2 in scenario file and 1 in metadata file (1 = fallow, 2 = cropping). The extension agent which was consulted indicated that crop rotations include corn, therefore, 2 was the correct value and the metadata was changed. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # HTMAX: value changed from 243.8 to 244. (02/06/06)
- # RECORD9E inserted using CN=89 for cropping prd and CN=90 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Mar-01 is the first date. (10/31/05)

~~~~~End of STXcorn Revisions ~~~~~

## STXcotton

#### Both Meta and Summary

- # AMXDR: changed parameter from 60 to 65 to be consistent with advice of extension agent cited in CA cotton scenario metadata. This is also consistent with original source: PRZM table 5-9, which cites 30-90
- # Emergence date changed from March 20 to March 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # OC was corrected using the formula:  $\%OC = \%OM * 0.6$ . Average %OM values for each horizon were obtained from soil data mart. (10/31/05)
- # The Number of Horizons described was changed from 3 to 4 in accordance with guidance. Soil data mart lists 3 soil horizons for Harlingen Clay Soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 18 cm horizon. The remaining two horizons matched the thicknesses given in soil data mart. DPN values

#### Metadata Change

- # COVMAX: metadata source updated to be consistent with guidance and with other scenarios. Parameter value did not change in scenario file. (01/11/06)
- # The date of crop harvest and description in the metadata were incorrect. This date was changed to 15/10. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # HTMAX: changed from 121.9 to 122. Extension agent (TX) indicated that max height can be 4 feet (122 cm). Consistent with other cotton scenarios except NC (HTMAX=CORED=100). (02/06/06)
- # RECORD9E inserted using CN=89 for cropping prd and CN=90 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Mar-16 is the first date. (10/31/05)

~~~~~End of STXcotton Revisions ~~~~~

## **STXgrapefruit**

### **Both Meta and Summary**

- # CORED was changed to 160 cm based on soil data mart depth of 63 inches. (10/31/05)
- # Emergence date changed from March 15 to March 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # OC was corrected using the formula: %OC = %OM \* 0.6. Average %OM values for each horizon were obtained from soil data mart. (10/31/05)
- # The Number of Horizons described was changed from 3 to 4 in accordance with guidance. Soil data mart lists 3 soil horizons for Hidalgo sandy clay loam soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 21 cm horizon. The remaining two horizons matched the thicknesses given in soil data

### **Metadata Change**

- # ANETD was listed as 17.5 in the metadata and 32.5 in the scenario file. The guidance (PRZM manual figure 5.2) indicates that this value should be 32.5. Therefore, the metadata file was changed to 32.5.
- # Pan Factor (PFAC) was listed as 0.79 in the metadata and 0.69 in the scenario file. The guidance (PRZM manual, figure 5.1) indicates that this value should be 0.69. Therefore, the metadata file was
- # SLP was 0.5 in the metadata and 2.5 in the scenario file. The official soil series description indicates that the slope of this soil type is 0-5%. Therefore, the slope is 2.5, so, the metadata was changed to
- # The date of crop harvest and description in the metadata were incorrect. This date was changed to 01/02. (10/31/05)
- # There was an inconsistency between USLEC factors. For this scenario, the correct factors were in the scenario file. The metadata was altered to reflect this. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

### **Summary File Change**

- # Emergence and maturity years were changed to 1960 (from 1961) in order to be consistent with cropping practices and timelines. (01/20/06)
- # RECORD9E inserted using CN=74 for cropping prd and CN=78 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Mar-16 is the first date. (10/31/05)

~~~~~End of STXgrapefruit Revisions ~~~~~

## **STXmelon**

### **Both Meta and Summary**

- # OC was corrected using the formula: %OC = %OM \* 0.6. Average %OM values for each horizon were obtained from soil data mart. (10/31/05)

- # The Number of Horizons described was changed from 3 to 4 in accordance with guidance. Soil data mart lists 3 soil horizons for Harlingen Clay Soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 18 cm horizon. The remaining two horizons matched the thicknesses given in soil data mart. DPN values

#### Metadata Change

- # ANETD was listed as 17.5 in the metadata and 32.5 in the scenario file. The guidance (PRZM manual figure 5.2) indicates that this value should be 32.5. Therefore, the metadata file was changed to 32.5.
- # MNGN was 0.014 in the metadata and 0.011 in the scenario file. The metadata was corrected to 0.011.
- # Pan Factor (PFAC) was listed as 0.79 in the metadata and 0.69 in the scenario file. The guidance (PRZM manual, figure 5.1) indicates that this value should be 0.69. Therefore, the metadata file was
- # There was an inconsistency between USLEC factors. For this scenario, the correct factors were in the scenario file. The metadata was altered to reflect this. (10/31/05)
- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel). Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # RECORD9E inserted using CN=89 for cropping prd and CN=90 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Feb-01 is the first date. (10/31/05)

~~~~~End of STXmelon Revisions ~~~~~

## **STXvegetable**

#### Both Meta and Summary

- # OC was corrected using the formula: %OC = %OM \* 0.6. Average %OM values for each horizon were obtained from soil data mart. (10/31/05)
- # The Number of Horizons described was changed from 3 to 4 in accordance with guidance. Soil data mart lists 3 soil horizons for Harlingen Clay Soil. However, guidance states that: The "first compartment should be thin. Set to a maximum of 10 cm. The top horizon may be divided into two, the first section having a maximum thickness of 10 cm and the second, the balance of the remaining thickness. Both horizons will have identical properties." In the original development of this scenario, the top horizon was 10 cm and had the properties of the top horizon as described in soil data mart. The balance of the thickness of the top horizon was then attributed to the second horizon and properties of the horizon were in accordance with the properties of the second horizon as described in soil data mart. The files were corrected in accordance with guidance so that the top horizon was split into a 10 cm horizon and a 18 cm horizon. The remaining two horizons matched the thicknesses given in soil data mart. DPN values

#### Metadata Change

- # AMXDR: justified inconsistencies in parameters from different vegetable scenarios due to different crops which are represented. Parameter value did not change. (01/16/06)
- # ANETD was listed as 17.5 in the metadata and 32.5 in the scenario file. The guidance (PRZM manual figure 5.2) indicates that this value should be 32.5. Therefore, the metadata file was changed to 32.5.
- # CINTCP value was inconsistent with othe vegetable scenario (PAvegetable). The inconsistency was justified in the metadata since the STXvegetable scenario represents carrot, cabbage and onion crops. The CINTCP value is consistent with other carrot and cabbage (but not onion) crop scenarios. Parameter value was not modified. (01/11/06)
- # COVMAX: metadata altered to indicate that value is not consistent with other vegetable scenarios because they represent different types of vegetables. (01/11/06)
- # Pan Factor (PFAC) was listed as 0.79 in the metadata and 0.69 in the scenario file. The guidance (PRZM manual, figure 5.1) indicates that this value should be 0.69. Therefore, the metadata file was

- # USELS verified according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . Only the metadata was updated to clearly document the source of this parameter. (02/01/06)

#### Summary File Change

- # Date for emergence was changed to 1960 (from 1961) in order to be consistent with cropping practices and timelines. (01/20/06)
- # RECORD9E inserted using CN=89 for cropping prd and CN=90 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Oct-01 is the first date. (10/31/05)

~~~~~End of STXvegetable Revisions ~~~~~

## TXalfalfaC

#### Both Meta and Summary

- # DPN of HORZN 2 was changed from 1 to 4. (10/31/05)
- # SLP was changed from 1 to 1.75 due to inconsistency with guidance. (02/01/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((N/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # AMXDR: metadata altered to justify inconsistency between different alfalfa scenarios. (01/16/06)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.

#### Summary File Change

- # RECORD9E inserted using CN=88 for cropping prd and CN=90 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Sept-01 is the first date. (10/31/05)

## CLA Scenario Comments: (TXalfalfaC)

#### Summary File Change

**CLA- In the PRZM summary file and documentation, the cropping is set-up for annual cropping (despite the documentation stating that the crop is grown in 3-5 year continuous cropping intervals). Moreover, the emergence date is August 30, the maturity date is set to October 20 and the harvest date is set to August 1 – all in the same year, which is impossible. The harvest date should be in either the next year or some other subsequent year.**

EFED- Recommendation - The dates of emergence, maturity, and harvest should be set to August 30, October 20, and August 1 (of the following year), respectively.

- # SRC- Changed IYREM to 1960 (year before maturity/harvest). Changed emergence date to September 1 (first RUSLE date). (10/31/05)

**CLA- The surface condition of crop after harvest is listed as fallow in the PRZM summary file and as residue in the documentation.**

EFED- The ICNAH is set to 1 in the summary file for fallow condition, whereas is set to 3 in the documentation for residue condition. Recommendation - change the value to 3 in the summary file.

- # SRC- Changed ICNAH to 3 in summary file to be consistent with guidance, metadata, and similar scenarios. (10/31/05)

~~~~~End of TXalfalfaC Revisions ~~~~~

## TXcornC

#### Both Meta and Summary

- # Emergence date changed from March 11 to March 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Metadata soil description states that slopes range from 0-12%. Therefore, the parameter was changed from 2.5 to 6%. (01/11/06)
- # SFAC changed from 0.5 to 0.36 as per PRZM Guidance July2004. (10/31/05)

- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # AMXDR: updated metadata source to be consistent with other corn scenarios and with current guidance. No change to parameter value. (01/16/06)
- # COVMAX: updated source to be consistent with other sources (IL corn extension agent and default guidance). (02/06/06)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.

#### Summary File Change

- # HTMAX: changed from 170 to 244 to be consistent with S. TX scenario value obtained from an extension agent. (02/07/06)
- # RECORD9E inserted using CN=89 for cropping prd and CN=92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Mar-16 is the first date. (10/31/05)

~~~~~End of TXcornC Revisions ~~~~~

## **TXcottonC**

#### Both Meta and Summary

- # All soil parameters updated to Soil Data Mart Milam County Database values for Crockett Fine Sandy Loam 1-3% slopes: USLEK changed from 0.3 to 0.43; CORED from 100 to 203; NHORIZ from 3 to 5. Horizons 1 & 2: BD from 1.6 to 1.55; THETO/FC from 0.17 to 0.196 and THEWP from 0.06 to 0.103 (both from SoilDataMart Database). Horizon 2: THKNS from 10 to 8. Horizon 3; THKNS from 80 to 15; BD from 1.7 to 1.48; THETO/FC from 0.247 to 0.34 THEWP from 0.127 to 0.245; OC from 0.29 to 0.2.
- # AMXDR: changed parameter from 60 to 65 to be consistent with advice of extension agent cited in CA cotton scenario metadata. This is also consistent with original source: PRZM table 5-9, which cites 30-90
- # Changed MLRA from 86 to 87 to be consistent with NRCS MLRA map and other Milam county scenarios. (10/31/05)
- # DPN of HORZN 2 was changed from 1 to 4. (10/31/05)
- # Emergence date changed from April 25 to April 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Metadata soil description states that slopes range from 0-10%. Therefore, the parameter was changed from 2.5 to 5%. (01/11/06)
- # Pan Factor (PFAC) was changed from 0.7 to 0.71 to be more consistent with PRZM Guidance and other Milam County scenarios. (10/31/05)
- # SFAC changed from 0.3 to 0.36 as per PRZM Guidance July2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Changed header in table 4 to Crockett Fine Sandy Loam Soil to be consistent with intro and scenario file. (10/31/05)
- # COVMAX: metadata source updated to be consistent with guidance and with other scenarios. Parameter value did not change in scenario file. (01/11/06)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile.

#### Summary File Change

- # HTMAX: changed from 69 to 122. Extension agent (TX) indicated that max height can be 4 feet (122 cm). Consistent with other cotton scenarios except NC (HTMAX=CORED=100). (02/06/06)
- # RECORD9E inserted using CN=86 for cropping prd and CN=89 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Apr-16 is the first date. (10/31/05)

## **CLA Scenario Comments: (TXcottonC)**

**CLA- Irrigation is listed as required in the documentation with a variety of irrigation methods employed in different areas of the cotton growing area of Texas. But, no irrigation is modeled in**

EFED- No Comment

- # SRC- EFED is currently evaluating a standardized approach for determining when a scenario should include irrigation and this will be reflected in future revisions to these scenarios. Added comment to metadata introduction. (02/23/06)

~~~~~End of TXcottonC Revisions ~~~~~

## **TXsorghumC**

### Both Meta and Summary

- # DPN of Horizon 2 changed from 0.1 to 5. (10/31/05)
- # Emergence date changed from May 11 to May 10 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Maximum Active Root Depth (AMXDR) was changed from 22 to 23 to be consistent with other scenarios and consistent with Guidance (Table 5.9 midpoint rounded up) (10/31/05)
- # Maximum Canopy Coverage (COVMAX) changed from 85% (PIC) to 100% to be consistent with Guidance and other scenarios (PRZM Guidance, Rev. July 2004) (10/31/05)
- # Metadata soil description states that slopes range from 0-12%. Therefore, the parameter should be changed from 2.5 to 6%. (01/11/06)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

### Metadata Change

- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile

### Summary File Change

- # HTMAX changed from 70 to 140. This was harmonized with KS sorghum. This was based on maximum average height observed in 2005 studies done by KS extension. Report available at: <http://www.oznet.ksu.edu/library/crpsl2/srp950.pdf> (02/03/06)
- # RECORD9E inserted using CN=86 for cropping prd and CN=92 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-10 is the first date. (10/31/05)

~~~~~End of TXsorghumC Revisions ~~~~~

## **TXwheatC**

### Both Meta and Summary

- # All soil parameters updated to Soil Data Mart Milam County Database values for Crockett Fine Sandy Loam 1-3% slopes: CORED from 110 to 203; NHORIZ from 3 to 5. Horizons 1 & 2: BD from 1.6 to 1.55; THETO/FC from 0.17 to 0.196 and THEWP from 0.06 to 0.103 (both from SoilDataMart Database). Horizon 2: THKNS from 10 to 8. Horizon 3: THKNS from 90 to 15; BD from 1.7 to 1.48; THETO/FC from 0.247 to 0.34 THEWP from 0.127 to 0.245; OC from 0.29 to 0.2. Horizons 4 & 5 added. (02/03/06)
- # DPN of HORZN 2 was changed from 10 to 4, HORZN 3 was changed from 10 to 5. (10/31/05)
- # Emergence date changed from October 10 to October 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # SFAC changed from 0.5 to 0.36 as per PRZM Guidance July2004. (10/31/05)

### Metadata Change

- # AMXDR: justified inconsistencies in parameters from different wheat scenarios due to different sources. Parameter value did not change. (01/16/06)
- # Changed header in table 4 to Crockett Fine Sandy Loam Soil to be consistent with intro and scenario file. (10/31/05)
- # Meteorological Dates changed to 1961-1990, NCPDS changed from 36 to 30 to match MetFile

### Summary File Change

- # RECORD9E inserted using CN=87 for cropping prd and CN=94 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Oct-16 is the first date. (10/31/05)

## CLA Scenario Comments: (TXwheatC)

**CLA- This scenario crashed when run using PRZM3.12.**

EFED- No Comment

# SRC- SRC was unable to reproduce the crash. (10/31/05)

### Both Meta and Summary

**CLA- In the PRZM summary file and the documentation, the emergence date is listed as October 10, the maturity date is listed as April 30 and the harvest date is listed as June 17 --- all in the same year. The emergence date should be in a year preceding the maturity and harvest year.**

EFED- What has the WQTT decided on winter wheat? How is an overwintering cover crop handled?

# SRC- PRZM appears to automatically determine the sequence of dates such that the emergence date will happen before the maturity and harvest dates. PRZM seems to automatically assign the maturity date to the first year in the simulation and emergence date to the previous year when the emergence month is greater than the maturity month (e.g. in this case the emergence month is october and the maturity month is April). IYREM changed from 61 to 60 "Since this is an overwintering crop, emergence year set to previous year. Crop is growing at the beginning of

### Metadata Change

**CLA- For soil horizon #3, the horizon thickness (THKNS) is listed as 90 cm in the PRZM summary file and as 80 cm in the documentation.**

EFED- The summary file is correct; this thickness was selected to match AMXDR (see 5. above).

# SRC- All soil parameters were revised with data from Soil Data Mart. (10/31/05)

**CLA- The core depth is listed as 110 cm in the PRZM summary file and as 100 cm in the**

EFED- The summary file is correct; the core depth (CORED) was set equal to the maximum rooting depth (AMXDR) of wheat, which for this area is 110 cm (see summary file under CORED for details)

# SRC- All soil parameters were revised with data from Soil Data Mart. (10/31/05)

**CLA- The USLE LS factor is listed as 0.103365 in the documentation (0.103 in the PRZM summary**

EFED- The summary file is correct; too many significant figures in documentation.

# SRC- USLELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\frac{1}{72.6})^m)((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) . (10/31/05)

**CLA- The maximum interception storage of the crop (CINTCP) is listed as 0.1 in the PRZM summary file and 0.2 in the documentation.**

EFED- The summary file is correct; the range in Table 5.4 is 0.0-0.15.

# SRC- Documentation changed to 0.1 to correspond with summary file. (10/31/05)

**CLA- The surface condition of initial crop (ISCOND) is listed as residue in the PRZM summary file and fallow in the documentation.**

EFED- The summary file is correct; residue is left on the surface before planting, as indicated in the summary file.

# SRC- Documentation changed to 3 (residue) to correspond with summary file. (10/31/05)

~~~~~End of TXwheatC Revisions ~~~~~

## WAbean

### Both Meta and Summary

# ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)

# Changed harvest date in scenario and metadata from Spt-10 to Spt-02 to harmonize with ORsnapbean scenario. (10/31/05)

# Crop specific parameters for bean scenarios were harmonized. Advice of OR extension agent was obtained. COVMAX changed from 80 to 100. AMXDR changed from 18 to 38. HTMAX changed from 50

- # Emergence date changed from June 11 to June 16 as per new guidance to associate emergence date with first RUSLE date (see RUSLE guidance). (10/31/05)
- # Metadata indicates that slopes range from 0-25%. Since the maximum >12%, the value should be set to 6% for row crops. Therefore, the value was changed from 12.5% to 6%. (01/11/06)
- # SFAC changed from 0.2 to 0.36 in accordance with PRZM Guidance, Rev. July 2004. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- # USLEP: Changed practice factor to be consistent for 3-8% slopes in EPA 2004 PRZM scenario QAQC guidance. (02/24/06)

#### Metadata Change

- # ISCOND listed incorrectly in metadata. Updated to be consistent with summary file and similar scenarios. (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and CN=87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-16 is the first date. (10/31/05)
- # USLEC: Inconsistency existed between the metadata and the scenario file for mannings values and USLEC values. Cited file for WA onions in centralia WA was used to confirm that metadata values were correct. Scenario values were altered to correspond to source data and metadata. Record 9E was altered appropriately to correspond to guidance. (02/22/06)

~~~~~End of WAbean Revisions ~~~~~

## **WAonion**

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Maximum rainfall interception storage of crop (CINTCP) changed from 0.5 to 0.05. Original value was "Taken from CA onion scenario" which is 0.05 (not 0.5). "0.05" is within the range of Table 5.4 of PRZM
- # Metadata indicates that slopes range from 0-25%. Since the maximum >12%, the value should be set to 6% for row crops. Therefore, the value was changed from 12.5% to 6%. (01/11/06)
- # SFAC changed from 0.2 to 0.36 in accordance with PRZM Guidance, Rev. July 2004. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # ISCOND listed incorrectly in metadata. Updated to be consistent with summary file and similar scenarios. (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=86 for cropping prd and CN=87 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that Jun-01 is the first date. (10/31/05)
- # USLEC: Inconsistency existed between the metadata and the scenario file for mannings values and USLEC values. Cited file for WA onions in centralia WA was used to confirm that metadata values were correct. Scenario values were altered to correspond to source data and metadata. Record 9E was altered appropriately to correspond to guidance. (02/22/06)

~~~~~End of WAonion Revisions ~~~~~

## **WAorchard**

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Crop specific parameters changed to be consistent with OR apple scenario. Changes included AMXDR (from 45 to 68), COVMAX (98 to 75), HTMAX (240 to 425), and emergence, maturity and harvest dates. Record 9E was changed according to new emergence and harvest dates. (02/03/06)
- # DPN of Horizon 3 changed from 2 to 4. (10/31/05)



- # Metadata indicates that slopes range from 0-45%. Since the maximum >12%, the value should be set to 12% for orchard crops. Therefore, the value was changed from 3.5% to 12%. (01/11/06)
- # SFAC changed from 0.2 to 0.16 in accordance with PRZM Guidance (July, 2004) and Table 5.1 of the PRZM manual for orchard crops. (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .

#### Metadata Change

- # Added BD for HORIZ4 in metadata (from summary file) (10/31/05)
- # COVMAX: inconsistencies with other apple scenarios justified in metadata as being due to different sources. (02/03/06)
- # Updated THKNS in Horizon 4 metadata frim 28 to 20, to the correct value in summary file for HORIZ.

#### Summary File Change

- # RECORD9E inserted using CN=82 for cropping prd and CN=84 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that April-01 is the first date. (10/31/05)
- # THETO of Horizon 3 changed from 0.16 to 0.32. (10/31/05)

~~~~~End of WAorchard Revisions ~~~~~

## **WApotato**

#### Both Meta and Summary

- # ANETD changed from 17 to 17.5 as per PRZM Guidance rev. July 2004 (10/31/05)
- # Metadata indicates that slopes range from 0-30%. Since the maximum >12%, the value should be set to 6% for row crops. Therefore, the value was changed from 2.5% to 6%. (01/11/06)
- # SFAC changed from 0.2 to 0.36 in accordance with PRZM Guidance, Rev. July 2004 (10/31/05)
- # USELS recalculated according to Haan and Barfield (1978) equation:  $LS = ((\lambda/72.6))^m((430x^2 + 30x + 0.43)/6.613)$ . This equation is modified from EPA 2004 guidance, but consistent with table 5-5 (Carsel) .
- # USLEP factor inconsistent with guidance. Changed from 0.6 to 0.5 to be consistent with slope and EPA 2004 guidance for PRZM scenario QAQC. (10/31/05)

#### Metadata Change

- # AMXDR: parameter value was changed to be consistent other potato scenarios and to justify inconsistencies. (01/16/06)
- # ISCOND listed incorrectly in metadata. Updated to be consistent with summary file and similar scenarios. (10/31/05)

#### Summary File Change

- # RECORD9E inserted using CN=89 for cropping prd and CN=91 for non-cropping prd. (10/31/05)
- # RUSLE dates and C factors moved so that May-01 is the first date. (10/31/05)
- # THEFC of HORIZN 1 was changed from 32 to 0.32. (10/31/05)

~~~~~End of WApotato Revisions ~~~~~