

APPENDIX A

PROPOSED SURVEY QUESTIONNAIRE

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Central States Regional Air Planning Association (CENRAP)
Telephone Interview
Project #1002

INTRO1: Hello, my name is _____. I'm calling on behalf of the Central States Regional Air Planning Association or CENRAP. CENRAP is an organization of states, tribes, federal agencies, and other interested parties that studies and addresses regional haze and visibility issues. Your state is participating in CENRAP and as such, your county has been randomly selected to participate in an important air quality study.

Q1a. Our records show that this is a cooperative agricultural extension office in _____ county in the state of _____. Is that correct?

- | | |
|----------------|-------------|
| [1] Yes | (Go to Qa2) |
| [2] No | (Go to Q1b) |
| [8] DON'T KNOW | (Terminate) |
| [9] REFUSED | (Terminate) |

Q1b. What office have I called? _____ (Go to Q2a)

Q2a. I would like to speak with the person who would be most knowledgeable about your county's tilling practices and agricultural burning practices.

- | | |
|---|------------------|
| [1] I am that person | (Go to INTRO3a) |
| [2] I am that person, but I only know tilling | (Go to INTRO3a) |
| [3] I am that person, but I only know about burning | (Go to Q3a) |
| [4] I'll get him/her | (Go to INTRO2) |
| [5] No one is available now | (Go to CALLBACK) |
| [6] No such person | (Terminate) |
| [8] DON'T KNOW | (Terminate) |
| [9] REFUSED | (Terminate) |

INTRO2: Hello, my name is _____. I'm calling on behalf of the Central States Regional Air Planning Association or CENRAP. CENRAP is an organization of states, tribes, federal agencies, and other interested parties that studies and addresses regional haze and visibility issues. Your state is participating in CENRAP and as such, your county has been randomly selected to participate in an important air quality study (Go to Q2b).

Q2b. Are you the person who is most knowledgeable about your county's tilling practices and agricultural burning practices.

- | | |
|---|-----------------|
| [1] I am that person | (Go to INTRO3a) |
| [2] I am that person, but I only know tilling | (Go to INTRO3a) |
| [3] I am that person, but I only know about burning | (Go to Q3a) |
| [8] DON'T KNOW | (Terminate) |
| [9] REFUSED | (Terminate) |

INTRO3a: The interview will take about 10 minutes. Your responses will be kept confidential and will not be connected to your name. Can I begin the interview? <Go to Q3a1>

Q3a. What agency or agencies would have information about tilling practices in your county? (Probe: Is that a state or county agency?) Can I get their telephone number as well?

- 1. _____
- 2. _____

777 = NOT APPLICABLE
888 = DON'T KNOW
999 = REFUSED

<Go to INTRO3b>

INTRO3b: The interview will take about 10 minutes. Your responses will be kept confidential and will not be connected to your name. Can I begin the interview? <Go to Q3a1>

CALLBACK: When would be a good time for us to call back to talk with someone about agricultural burning in your county? Who should we ask for? <Interviewer Note: If told you have reached the incorrect agency, ask for correct agency name and telephone number>

TERMINATE: Thank you for your time. Goodbye.

<If Q1a Eq 2, go to Q3a2. If Q1a Eq 1, go to Q3a1>

Q3a1. What is the name of this office? _____

88888 = DON'T KNOW
9999 = REFUSED

Q3a2. What is your name? _____

8888 = DON'T KNOW
9999 = REFUSED

Q3a3. What is your telephone number beginning with the area code? () _____

8888888 = DON'T KNOW
9999999 = REFUSED

Q3b. I'm now going to read you a list of crops and I'd like you to tell me whether these crops are grown in your county? (Programmer note: 1 data output column only; Yes=1, No=2)

- 1. Corn _____
- 2. Wheat _____
- 3. Sorghum _____
- 4. Rice _____
- 5. Other cereal crops _____
- 6. Soybeans _____
- 7. Sugarcane _____
- 8. Hay or alfalfa _____
- 9. Cotton _____
- 10. Other crops not previously mentioned _____
- 11. Grazed rangelands _____

8 = DON'T KNOW

9 = REFUSED

<If Q2a or Q2b Eq 1 or 2, go to Q4. If Q2a or Q2b Eq 3, go to Q14>

Agricultural Dust Questions

<Note: Show selected crop names from Q3b for Questions #4 through #12 with the exception of showing Q3b11. Only show Q3b11 for questions #14 through #19>

Q4. How many plantings of each crop type are normally completed during a year? Let's start with (name of 1st crop). Typically, how many plantings per year are made for (name of 1st crop)? How about for (name of 2nd crop)? For (name of 3rd crop)? Read list of remaining selected crops.

- a. Corn _____
- b. Wheat _____
- c. Sorghum _____
- d. Rice _____
- e. Other cereal crops _____
- f. Soybeans _____
- g. Sugarcane _____
- h. Hay or alfalfa _____
- i. Cotton _____
- j. Other crops not previously mentioned _____

88 = DON'T KNOW

99 = REFUSED

Q5. In your county, are tilling passes typically made on each crop before planting and after harvesting or are harvesting and planting completed in one pass? Let's start with (name of 1st crop). Typically, when are tilling passes made for (name of 1st crop)? Is it before planting and after harvesting or is tilling completed in one pass? How about for (name of 2nd crop)? Read list of remaining selected crops.

- 1 = Yes, passes are made before planting and after harvesting
- 2 = Tilling passes are completed at the same time
- 88 = DON'T KNOW
- 99 = REFUSED

	<u>Passes</u>
a. Corn	_____
b. Wheat	_____
c. Sorghum	_____
d. Rice	_____
e. Other cereal crops	_____
f. Soybeans	_____
g. Sugarcane	_____
h. Hay or alfalfa	_____
i. Cotton	_____
j. Other crops not previously mentioned	_____

<If Q5a through Q5j Eq 2, 8, or 9, go to Q6. If Q5a through Q5j Eq 1, go to Q7>

Q6. How many tilling passes are typically made on each crop in your county? Let's start with (name of 1st crop). Typically, how many tilling passes are made for (name of 1st crop)? How about for (name of 2nd crop)? Read list of remaining selected crops.

	<u>Passes</u>
a. Corn	_____
b. Wheat	_____
c. Sorghum	_____
d. Rice	_____
e. Other cereal crops	_____
f. Soybeans	_____
g. Sugarcane	_____
h. Hay or alfalfa	_____
i. Cotton	_____
j. Other crops not previously mentioned	_____

- 88 = DON'T KNOW
- 99 = REFUSED

<Go to Q8>

Q7. How many tilling passes are typically made on each crop before planting and after harvesting in your county? Let's start with (name of 1st crop). Typically, how many passes are made for (name of 1st crop) before planting? How about for (name of 2nd crop)? Read list of remaining selected crops.

Let's now turn to harvesting. Typically, how many passes are made for (name of 1st crop) after harvesting? For (name of 2nd crop)? Read list of remaining selected crops.

	<u>1. Planting</u>	<u>2. Harvesting</u>
a. Corn	_____	_____
b. Wheat	_____	_____
c. Sorghum	_____	_____
d. Rice	_____	_____
e. Other cereal crops	_____	_____
f. Soybeans	_____	_____
g. Sugarcane	_____	_____
h. Hay or alfalfa	_____	_____
i. Cotton	_____	_____
j. Other crops not previously mentioned	_____	_____

88 = DON'T KNOW

99 = REFUSED

Q8. Do farmers use any special tilling practices such a no-till, low-till, ridge-till, or mulch-till farming in your county? Let's start with (name of 1st crop), are no-till, low-till, ridge-till, or mulch-till tilling practices typically used for this crop?

What about for (name of 2nd crop)? Are no-till, low-till, ridge-till, or mulch-till practices typically used for this crop? Read list of remaining selected crops.

(Yes=1, No=2)

	<u>1. No-till</u>	<u>2. Low-till</u>	<u>3. Ridge-till</u>	<u>4. Mulch-till</u>
a. Corn	_____	_____	_____	_____
b. Wheat	_____	_____	_____	_____
c. Sorghum	_____	_____	_____	_____
d. Rice	_____	_____	_____	_____
e. Other cereal crops	_____	_____	_____	_____
f. Soybeans	_____	_____	_____	_____
g. Sugarcane	_____	_____	_____	_____
h. Hay or alfalfa	_____	_____	_____	_____
i. Cotton	_____	_____	_____	_____
j. Other types of crop not previously mentioned	_____	_____	_____	_____

8 = DON'T KNOW

9 = REFUSED

<If Q5a through Q5j Eq 2, 8, or 9, go to Q10. If Q5a through Q5j Eq 1, go to Q9>

Q9. For each crop, please tell me how many days before planting and after harvesting does tilling typically occur in your county. Let's start with (name of 1st crop). Typically, how many days before planting does tilling occur for (name of 1st crop)? How about for (name of 2nd crop)? Read list of remaining selected crops.

Let's now turn to harvesting. Typically, how many days after harvesting does tilling occur for (name of 1st crop)? For (name of 2nd crop)? Read list of remaining selected crops.

	<u>1. Before Planting</u>	<u>2. After Harvesting</u>
a. Corn	_____	_____
b. Wheat	_____	_____
c. Sorghum	_____	_____
d. Rice	_____	_____
e. Other cereal crops	_____	_____
f. Soybeans	_____	_____
g. Sugarcane	_____	_____
h. Hay or alfalfa	_____	_____
i. Cotton	_____	_____
j. Other crops not previously mentioned	_____	_____

888 = DON'T KNOW

999 = REFUSED

Q10. For each crop, please tell me whether tilling usually occurs on weekdays, weekends, or both weekdays and weekends? (Programmer note: 1 data output column only; Weekdays=1, Weekends=2, Both=3)

a. Corn	_____
b. Wheat	_____
c. Sorghum	_____
d. Rice	_____
e. Other cereal crops	_____
f. Soybeans	_____
g. Sugarcane	_____
h. Hay or alfalfa	_____
i. Cotton	_____
j. Other crops not previously mentioned	_____

8 = DON'T KNOW

9 = REFUSED

Q11. For each crop, please tell me whether tilling usually occurs during daytime, nighttime, or both daytime and nighttime hours? (Programmer note: 1 data output column only; Daytime=1, Nighttime=2, Both=3)

- a. Corn _____
- b. Wheat _____
- c. Sorghum _____
- d. Rice _____
- e. Other cereal crops _____
- f. Soybeans _____
- g. Sugarcane _____
- h. Hay or alfalfa _____
- i. Cotton _____
- j. Other crops not previously mentioned _____

8 = DON'T KNOW

9 = REFUSED

<If Q11a through Q11j Eq 3 go to Q12. If Q11a through Q11j Eq 1, 2, 8, or, 9 go to Q13>

Q12. For each crop, please tell me what percent of tilling occurs during daytime and nighttime hours? Let's start with (name of first crop). What percent of tilling for this crop occurs in the daytime and what percent occurs in the nighttime?

- | | <u>1. % Daytime</u> | <u>2. % Nighttime</u> |
|---|---------------------|-----------------------|
| a. Corn | _____ | _____ |
| b. Wheat | _____ | _____ |
| c. Sorghum | _____ | _____ |
| d. Rice | _____ | _____ |
| e. Other cereal crops | _____ | _____ |
| f. Soybeans | _____ | _____ |
| g. Sugarcane | _____ | _____ |
| h. Hay or alfalfa | _____ | _____ |
| i. Cotton | _____ | _____ |
| j. Other crops not previously mentioned | _____ | _____ |

888 = DON'T KNOW

999 = REFUSED

<NOTE: For Q12a1 through Q12j2, daytime % and nighttime % must add to 100% or question must be re-asked>

<If Q2a or Q2b Eq 2, go to Q13>

<If Q2a or Q2b Eq 1, go to Q14>

Q13. What agency should I contact concerning agricultural burning in your county? (Probe: Is that a state or county agency?) Can I get the telephone number as well?

- a. _____
- b. _____

888 = DON'T KNOW

999 = REFUSED

<Go to THANK YOU>

Agricultural Burning Questions

<Note: Show selected crop names from Q3b for Questions #14 through #19>

Q14. For each crop, what percent of the total acreage is typically burned each year in your county? Let's start with (name of 1st crop). What percent of (name of 1st crop) is burned each year? Read list of remaining selected crops.

- a. Corn _____ %
- b. Wheat _____ %
- c. Sorghum _____ %
- d. Rice _____ %
- e. Other cereal crops _____ %
- f. Soybeans _____ %
- g. Sugarcane _____ %
- h. Hay or alfalfa _____ %
- i. Cotton _____ %
- j. Other crops not previously mentioned _____ %
- k. Grazed rangelands _____ %

888 = DON'T KNOW

999 = REFUSED

Q15. For each crop, please tell me how many days before planting and after harvesting does agricultural burning typically occur in your county. Let's start with (name of 1st crop). Typically, how many days before planting does agricultural burning occur for (name of 1st crop)? How about for (name of 2nd crop)? Read list of remaining selected crops.

Let's now turn to harvesting. Typically, how many days after harvesting does agricultural burning occur for (name of 1st crop)? For (name of 2nd crop)? Read list of remaining selected crops.

- | | <u>1. Before Planting</u> | <u>2. After Harvesting</u> |
|---|---------------------------|----------------------------|
| a. Corn | _____ | _____ |
| b. Wheat | _____ | _____ |
| c. Sorghum | _____ | _____ |
| d. Rice | _____ | _____ |
| e. Other cereal crops | _____ | _____ |
| f. Soybeans | _____ | _____ |
| g. Sugarcane | _____ | _____ |
| h. Hay or alfalfa | _____ | _____ |
| i. Cotton | _____ | _____ |
| j. Other crops not previously mentioned | _____ | _____ |
| k. Grazed rangelands | _____ | _____ |

888 = DON'T KNOW

999 = REFUSED

Q16. For each crop, please tell me whether agricultural burning usually occurs during weekdays, weekends, or both weekdays and weekends? (Programmer note: 1 data output column only; Weekdays=1, Weekends=2, Both=3)

- a. Corn _____
- b. Wheat _____
- c. Sorghum _____
- d. Rice _____
- e. Other cereal crops _____
- f. Soybeans _____
- g. Sugarcane _____
- h. Hay or alfalfa _____
- i. Cotton _____
- j. Other crops not previously mentioned _____
- k. Grazed rangelands _____

8 = DON'T KNOW

9 = REFUSED

Q17. For each crop, please tell me whether crop residue is typically burned in your county during daytime, nighttime, or both daytime and nighttime hours? (Programmer note: 1 data output column only; Daytime=1, Nighttime=2, Both=3)

- a. Corn _____
- b. Wheat _____
- c. Sorghum _____
- d. Rice _____
- e. Other cereal crops _____
- f. Soybeans _____
- g. Sugarcane _____
- h. Hay or alfalfa _____
- i. Cotton _____
- j. Other crops not previously mentioned _____
- k. Grazed rangelands _____

8 = DON'T KNOW

9 = REFUSED

<If Q17 Eq 3, go to Q18. If Q17 Eq 1, 2, 8, or 9, go to Q19>

Q18. For each crop, please tell me what percent of crop residue is burned during daytime and nighttime hours? Let's start with (name of first crop). What percent of crop residue burning for this crop occurs in the daytime and what percent occurs in the nighttime?

	<u>1. % Daytime</u>	<u>2. % Nighttime</u>
a. Corn	_____	_____
b. Wheat	_____	_____
c. Sorghum	_____	_____
d. Rice	_____	_____
e. Other cereal crops	_____	_____
f. Soybeans	_____	_____
g. Sugarcane	_____	_____
h. Hay or alfalfa	_____	_____
i. Cotton	_____	_____
j. Other crops not previously mentioned	_____	_____
k. Grazed rangelands	_____	_____

888 = DON'T KNOW
 999 = REFUSED

<NOTE: For Q18a1 through Q18k2, daytime % and nighttime % must add to 100% or question must be re-asked>

Q19. For the following crops, please tell me whether headfires, backfires, or both types of fires are used. Headfires are burning in the direction of the wind and backfires are burning in a direction opposite to the wind. (Programmer note: 1 data output column only; Headfire=1, Backfire=2, Both=3)

- a. Hay or alfalfa _____
- b. Soybeans _____
- c. Wheat _____

8 = DON'T KNOW
 9 = REFUSED

Q20. What agency or agencies regulate agricultural burning in your county? (Probe: Is that a state or county agency?) Can I get the telephone number as well?

- a. _____
- b. _____

888 = DON'T KNOW
 999 = REFUSED

<Go to THANK YOU>

THANK YOU: Those are all the questions. Thank you for your time. Goodbye.

APPENDIX B

VEGETATION CROSS-WALKS

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List of Crops included in the BELD Database for each CENRAP State

STATE	ST_NAME	INDEX	GENUS
05	ARKANSAS	24	CORN
05	ARKANSAS	25	COTTON
05	ARKANSAS	27	HAY
05	ARKANSAS	28	MISC_CROP
05	ARKANSAS	29	OATS
05	ARKANSAS	31	PEANUTS
05	ARKANSAS	32	POTATOES
05	ARKANSAS	33	RICE
05	ARKANSAS	35	SORGHUM
05	ARKANSAS	36	SOYBEANS
05	ARKANSAS	38	WHEAT
19	IOWA	23	BARLEY
19	IOWA	24	CORN
19	IOWA	27	HAY
19	IOWA	28	MISC_CROP
19	IOWA	29	OATS
19	IOWA	32	POTATOES
19	IOWA	34	RYE
19	IOWA	35	SORGHUM
19	IOWA	36	SOYBEANS
19	IOWA	38	WHEAT
20	KANSAS	22	ALFALFA
20	KANSAS	23	BARLEY
20	KANSAS	24	CORN
20	KANSAS	27	HAY
20	KANSAS	28	MISC_CROP
20	KANSAS	29	OATS
20	KANSAS	34	RYE
20	KANSAS	35	SORGHUM
20	KANSAS	36	SOYBEANS
20	KANSAS	37	TOBACCO
20	KANSAS	38	WHEAT
22	LOUISIANA	24	CORN
22	LOUISIANA	25	COTTON
22	LOUISIANA	27	HAY
22	LOUISIANA	28	MISC_CROP
22	LOUISIANA	29	OATS
22	LOUISIANA	31	PEANUTS
22	LOUISIANA	32	POTATOES
22	LOUISIANA	33	RICE
22	LOUISIANA	35	SORGHUM
22	LOUISIANA	36	SOYBEANS
22	LOUISIANA	38	WHEAT
27	MINNESOTA	22	ALFALFA
27	MINNESOTA	23	BARLEY
27	MINNESOTA	24	CORN
27	MINNESOTA	27	HAY
27	MINNESOTA	28	MISC_CROP
27	MINNESOTA	29	OATS
27	MINNESOTA	32	POTATOES
27	MINNESOTA	33	RICE
27	MINNESOTA	34	RYE
27	MINNESOTA	36	SOYBEANS
27	MINNESOTA	38	WHEAT

Unique Crops
ALFALFA
BARLEY
CORN
COTTON
HAY
MISC_CROP
OATS
PEANUTS
POTATOES
RICE
RYE
SORGHUM
SOYBEANS
TOBACCO
WHEAT

List of Crops included in the BELD Database for each CENRAP State

STATE	ST_NAME	INDEX	GENUS
29	MISSOURI	23	BARLEY
29	MISSOURI	24	CORN
29	MISSOURI	25	COTTON
29	MISSOURI	27	HAY
29	MISSOURI	28	MISC_CROP
29	MISSOURI	29	OATS
29	MISSOURI	31	PEANUTS
29	MISSOURI	32	POTATOES
29	MISSOURI	33	RICE
29	MISSOURI	34	RYE
29	MISSOURI	35	SORGHUM
29	MISSOURI	36	SOYBEANS
29	MISSOURI	37	TOBACCO
29	MISSOURI	38	WHEAT
31	NEBRASKA	22	ALFALFA
31	NEBRASKA	23	BARLEY
31	NEBRASKA	24	CORN
31	NEBRASKA	27	HAY
31	NEBRASKA	28	MISC_CROP
31	NEBRASKA	29	OATS
31	NEBRASKA	32	POTATOES
31	NEBRASKA	34	RYE
31	NEBRASKA	35	SORGHUM
31	NEBRASKA	36	SOYBEANS
31	NEBRASKA	38	WHEAT
40	OKLAHOMA	22	ALFALFA
40	OKLAHOMA	23	BARLEY
40	OKLAHOMA	24	CORN
40	OKLAHOMA	25	COTTON
40	OKLAHOMA	27	HAY
40	OKLAHOMA	28	MISC_CROP
40	OKLAHOMA	29	OATS
40	OKLAHOMA	31	PEANUTS
40	OKLAHOMA	32	POTATOES
40	OKLAHOMA	34	RYE
40	OKLAHOMA	35	SORGHUM
40	OKLAHOMA	36	SOYBEANS
40	OKLAHOMA	38	WHEAT
48	TEXAS	22	ALFALFA
48	TEXAS	23	BARLEY
48	TEXAS	24	CORN
48	TEXAS	25	COTTON
48	TEXAS	27	HAY
48	TEXAS	28	MISC_CROP
48	TEXAS	29	OATS
48	TEXAS	31	PEANUTS
48	TEXAS	32	POTATOES
48	TEXAS	33	RICE
48	TEXAS	34	RYE
48	TEXAS	35	SORGHUM
48	TEXAS	36	SOYBEANS
48	TEXAS	38	WHEAT

Unique Crops

Cross-walk of BELD Vegetation Types to FOFEM Forest Classification Types

BELD	Genus	Species	FOFEM ID	FOFEM Cover Description
26	GRASSLAND	----	SRM 215	Valley Grassland (Annual Grassland)
30	RANGELAND	----	SRM 215	Valley Grassland (Annual Grassland)
39	ACACIA	----	SAF 70	Longleaf Pine - rough age 3
40	AILANTHUS	ALTISSIMA	SAF 70	Longleaf Pine - rough age 3
41	ALNUS	RUBRA	NVCS 1371	Alnus rubra Forest
42	MALUS	----	SAF 70	Longleaf Pine - rough age 3
43	FRAXINUS	AMERICANA	NVCS 2030	Acer saccharinum - Fraxinus americana - Tilia americana Forest
44	TILIA	AMERICANA	NVCS 1360	Acer saccharum - Tilia americana - (Quercus rubra) Forest
45	FAGUS	GRANDIFOLIA	NVCS 1420	Fagus grandifolia - Acer saccharum - (Liriodendron tulipifera) Forest
46	BETULA	NIGRA	SAF 70	Longleaf Pine - rough age 3
47	BUMELIA	LANUGINOSA	SAF 70	Longleaf Pine - rough age 3
48	MELALEUCA	QUINQUENERVIA	SAF 70	Longleaf Pine - rough age 3
49	UMBELLULARIA	CALIFORNICA	SAF 70	Longleaf Pine - rough age 3
51	CASTANEA	DENTATA	SAF 70	Longleaf Pine - rough age 3
52	CATALPA	----	SAF 70	Longleaf Pine - rough age 3
53	CHAMAECYPARIS	NOOTKATENSIS	NVCS 660	Chamaecyparis nootkatensis Forest
54	THUJA	OCCIDENTALIS	SAF 83	Longleaf Pine - Slash Pine - rough age 3
55	AESCULUS	OCTANDRA	SAF 70	Longleaf Pine - rough age 3
56	MELIA	AZEDARACH	SAF 70	Longleaf Pine - rough age 3
58	TAXODIUM	MUCRONATUM	SAF 70	Longleaf Pine - rough age 3
59	CORNUS	FLORIDA	SAF 70	Longleaf Pine - rough age 3
60	PSEUDOTSUGA	MENZIESII	SAF 70	Longleaf Pine - rough age 3
61	OSTRYA	VIRGINIANA	NVCS 5370	Juniperus virginiana - (Fraxinus americana, ostrya virginiana) Woodland
63	ULMUS	AMERICANA	NVCS 2310	Quercus texana, Celtis laevigata, Ulmus (americana, crassifolia), Gleditsia tricanthos)
64	EUCALYPTUS	----	SAF 70	Longleaf Pine - rough age 3
65	ABIES	BALSAMEA	SAF 51	White Pine - Chestnut Oak
66	ABIES	MAGNIFICA	NVCS 631	Abies magnifica Forest
67	ABIES	LASIOCARPA	NVCS 881	Abies lasiocarpa Forest
69	ABIES	GRANDIS	NVCS 621	Abies grandis Forest
70	ABIES	PROCERA	SAF 70	Longleaf Pine - rough age 3
71	ABIES	AMABILIS	NVCS 570	Abies amabilis - Abies concolor Forest
73	ABIES	MAGNIFICA SHASTENSIS	SAF 70	Longleaf Pine - rough age 3
74	ABIES	----	SAF 70	Longleaf Pine - rough age 3
75	ABIES	LASIOCARPA ARIZONICA	SAF 70	Longleaf Pine - rough age 3
76	ABIES	CONCOLOR	NVCS 570	Abies amabilis - Abies concolor Forest
77	GLEDITSIA	TRICANTHOS	SAF 70	Longleaf Pine - rough age 3
78	CELTIS	OCCIDENTALIS	SRM 604	Bluestem - Grama Prairie
79	CRATAEGUS	----	SAF 70	Longleaf Pine - rough age 3

Cross-walk of BELD Vegetation Types to FOFEM Forest Classification Types

BELD	Genus	Species	FOFEM ID	FOFEM Cover Description
80	TSUGA	----	SAF 70	Longleaf Pine - rough age 3
81	CARYA	OVATA	NVCS 1380	Carya (glabra, ovata) - Fraxinus americana - Quercus (alba, rubra) Forest
82	ILEX	OPACO	SAF 70	Longleaf Pine - rough age 3
83	CARPINUS	CAROLINIANA	SAF 70	Longleaf Pine - rough age 3
84	CALOCEDRUS	DECURRENS	NVCS 650	Calocedrus decurrens - Pseudotsuga menziesii Forest
85	JUNIPERUS	VIRGINIANA	NVCS 5370	Juniperus virginiana - (Fraxinus americana, ostrya virginiana) Woodland
86	GYMNOCLADUS	DIOICUS	SAF 70	Longleaf Pine - rough age 3
87	LARIX	LARICINA	SAF 98	Pond Pine
88	GORDONIA	LASIANTHUS	SAF 70	Longleaf Pine - rough age 3
89	ARBUTUS	MENZIESII	NVCS 790	Pseudotsuga menziesii - Arbutus menziesii Forest
90	MAGNOLIA	GRANDIFLORA	SRM 910	Hairgrass
91	CERCOCARPUS	LEDIFOLIUS	NVCS 6461	Cercocarpus ledifolius Shrubland
92	ACER	GRANDIDENTATUM	NVCS 1301	Acer grandidentatum Lowland Forest
93	ACER	MACROPHYLLUM	NVCS 3350	Pseudotsuga menziesii - Acer macrophyllum Forest
94	ACER	NIGRUM	SAF 27	Sugar Maple
95	ACER	NEGUNDO	SRM 404	Threetip Sagebrush
96	ACER	BARBATUM	SAF 70	Longleaf Pine - rough age 3
97	ACER	SPICATUM	SAF 70	Longleaf Pine - rough age 3
98	ACER	PLATANOIDES	SAF 70	Longleaf Pine - rough age 3
99	ACER	RUBRUM	NVCS 5270	Acer rubrum Saturated Woodland
100	ACER	GLABRUM	SAF 70	Longleaf Pine - rough age 3
101	ACER	SACCHARINUM	NVCS 2030	Acer saccharinum - Fraxinus americana - Tilia americana Forest
103	ACER	PENSYLVANICUM	SAF 70	Longleaf Pine - rough age 3
104	ACER	SACCHARUM	NVCS 1320	Acer saccharum - Betula alleghaniensis - (Fagus grandifolia) Forest
105	PROSOPIS	----	SAF 70	Longleaf Pine - rough age 3
106	MISCELLANEOUS	HD SPP	SAF 70	Longleaf Pine - rough age 3
108	SORBUS	AMERICANA	SAF 70	Longleaf Pine - rough age 3
109	MORUS	RUBRA	SAF 70	Longleaf Pine - rough age 3
110	NYSSA	SYLVATICA	SAF 70	Longleaf Pine - rough age 3
111	QUERCUS	ARIZONICA	SAF 70	Longleaf Pine - rough age 3
112	QUERCUS	ILICIFOLIA	NVCS 7200	Quercus ilicifolia Shrubland
113	QUERCUS	VELUTINA	NVCS 3320	Pinus virginiana - Quercus (alba, stellata, falcata, velutina) Forest
114	QUERCUS	MARILANDICA	NVCS 3000	Juniperus virginiana - Quercus (stellata, velutina, marilandica) Forest
115	QUERCUS	DOUGLASII	SAF 70	Longleaf Pine - rough age 3
116	QUERCUS	INCANA	NVCS 5320	Quercus hemisphaerica - Quercus margarettiae - Quercus incana Woodland
117	QUERCUS	MACROCARPA	NVCS 11951	Quercus macrocarpa - (Quercus alba) Wooded Herbland
118	QUERCUS	KELLOGGII	NVCS 5130	Quercus kelloggii Temporarily Flooded Woodland
119	QUERCUS	AGRIFOLIA	SAF 70	Longleaf Pine - rough age 3

Cross-walk of BELD Vegetation Types to FOFEM Forest Classification Types

BELD	Genus	Species	FOFEM ID	FOFEM Cover Description
120	QUERCUS	LOBATA	NVCS 4940	Quercus lobata Woodland
121	QUERCUS	CHRYSOLEPIS	SAF 59	Yellow Poplar - White Oak - Northern Red Oak
122	QUERCUS	PRINUS	NVCS 3330	Pinus virginiana - Quercus (coccinea, prinus) Forest
123	QUERCUS	MUEHLENBERGII	NVCS 2990	Juniperus virginiana - Quercus (muehlenbergii, stellata) Forest
124	QUERCUS	STELLATA	NVCS 2990	Juniperus virginiana - Quercus (muehlenbergii, stellata) Forest
125	QUERCUS	DURANDII	SAF 70	Longleaf Pine - rough age 3
126	QUERCUS	EMORYI	SAF 70	Longleaf Pine - rough age 3
127	QUERCUS	ENGELMANNII	SAF 70	Longleaf Pine - rough age 3
128	QUERCUS	----	SAF 70	Longleaf Pine - rough age 3
129	QUERCUS	GAMBELII	NVCS 7181	Quercus gambelii Shrubland
130	QUERCUS	WISLIZENNI	SAF 70	Longleaf Pine - rough age 3
131	QUERCUS	LAURIFOLIA	NVCS 3460	Pinus taeda - Quercus (phellos, nigra, laurifolia)
132	QUERCUS	VIRGINIANA	SAF 22	White Pine - Hemlock
133	QUERCUS	OBLONGIFOLIA	SAF 70	Longleaf Pine - rough age 3
134	QUERCUS	ELLIPSOIDALIS	NVCS 11960	Quercus velutina - (Quercus ellipsoidalis) Wooded Herbland
135	QUERCUS	RUBRA	NVCS 1360	Acer saccharum - Tilia americana - (Quercus rubra) Forest
136	QUERCUS	NUTTALLII	SAF 70	Longleaf Pine - rough age 3
137	QUERCUS	GARRYANA	NVCS 5510	Pseudotsuga menziesii - Quercus garryana Woodland
138	QUERCUS	LYRATA	NVCS 2550	Quercus lyrata - (Carya aquatica) Seasonally Flooded Forest
139	QUERCUS	PALUSTRIS	NVCS 2560	Quercus palustris - (Quercus bicolor) Seasonally Flooded Forest
140	QUERCUS	STELLATA	NVCS 1570	Quercus alba - Quercus (falcata, stellata) Forest
141	QUERCUS	COCCINEA	NVCS 1590	Quercus coccinea - Quercus falcata Forest
142	QUERCUS	----	SAF 70	Longleaf Pine - rough age 3
143	QUERCUS	IMBRICARIA	SAF 70	Longleaf Pine - rough age 3
144	QUERCUS	SHUMARDII	NVCS 3450	Pinus taeda - Quercus (pagoda, michauxii, shumardii)
145	QUERCUS	HYPOLEUCOIDES	SAF 70	Longleaf Pine - rough age 3
146	QUERCUS	FALCATA	NVCS 3280	Pinus taeda - Quercus (alba, falcata, stellata) Forest
147	QUERCUS	----	SAF 70	Longleaf Pine - rough age 3
148	QUERCUS	MICHAUXII	NVCS 2760	Quercus michauxii - Quercus pagoda Saturated Forest
149	QUERCUS	FALCATA	NVCS 3200	Pinus palustris, Pinus (echinata, taeda), Quercus (incana, margarettiae, falcata, laevis)
150	QUERCUS	BICOLOR	NVCS 2260	Quercus macrocarpa - Quercus bicolor - (Carya laciniosa)
151	QUERCUS	LAEVIS	NVCS 1610	Quercus laevis Forest
152	QUERCUS	NIGRA	NVCS 3460	Pinus taeda - Quercus (phellos, nigra, laurifolia)
153	QUERCUS	ALBA	NVCS 1540	Quercus alba - (Quercus nigra) Forest
154	QUERCUS	PHELLOS	NVCS 2300	Quercus phellos - Ulmus crassifolia
155	MACLURA	POMIFERA	SAF 70	Longleaf Pine - rough age 3
156	PAULOWNIA	TOMENTOSA	SAF 70	Longleaf Pine - rough age 3
157	ASIMINA	TRILOBA	SAF 70	Longleaf Pine - rough age 3

Cross-walk of BELD Vegetation Types to FOFEM Forest Classification Types

BELD	Genus	Species	FOFEM ID	FOFEM Cover Description
158	DIASPYROS	VIRGINIANA	SAF 70	Longleaf Pine - rough age 3
162	PINUS	MURICATA	SAF 70	Longleaf Pine - rough age 3
164	PINUS	ARISTATA	NVCS 3931	Pinus aristata Woodland
165	PINUS	LEIOPHYLLA	SAF 70	Longleaf Pine - rough age 3
166	PINUS	COULTERI	SAF 70	Longleaf Pine - rough age 3
167	PINUS	SABINIANA	SAF 70	Longleaf Pine - rough age 3
168	PINUS	STROBUS	NVCS 530	Pinus strobus Forest
169	PINUS	BALFOURIANA	SAF 70	Longleaf Pine - rough age 3
170	PINUS	BANKSIANA	NVCS 390	Pinus banksiana Forest
171	PINUS	JEFFERYI	SAF 70	Longleaf Pine - rough age 3
172	PINUS	ATTENUATA	NVCS 3940	Pinus attenuata Woodland
173	PINUS	FLEXILIS	NVCS 4051	Pinus flexilis Woodland
174	PINUS	TAEDA	NVCS 550	Pinus taeda Forest
175	PINUS	CONTORTA	NVCS 411	Pinus contorta Forest
176	PINUS	PALUSTRIS	NVCS 3200	Pinus palustris, Pinus(echinata,taeda), Quercus(incana,margarettae,falcata,laevis
177	PINUS	RADIATA	SAF 84	Slash Pine - rough age 3
178	PINUS	MONOPHYLLA	NVCS 4091	Pinus monophylla Woodland
179	PINUS	DISCOLOR	NVCS 4011	Pinus discolor Woodland
180	PINUS	EDULIS	NVCS 431	Pinus edulis Forest
181	PINUS	RIGIDA	NVCS 4230	Pinus virginiana - Pinus rigida Woodland
182	PINUS	SEROTINA	NVCS 4620	Pinus palustris - Pinus serotina Saturated Woodland
183	PINUS	PONDEROSA	NVCS 481	Pinus ponderosa - Pseudotsuga menziesii Forest
184	PINUS	RESINOSA	NVCS 510	Pinus resinosa Forest
185	PINUS	CLAUSA	NVCS 400	Pinus clausa Forest
186	PINUS	SYLVESTRIS	SAF 70	Longleaf Pine - rough age 3
187	PINUS	ECHINATA	NVCS 420	Pinus echinata Forest
188	PINUS	ELLIOTTII	NVCS 250	Pinus elliotii Tropical Forest
189	PINUS	GLABRA	SAF 70	Longleaf Pine - rough age 3
190	PINUS	LAMBERTIANA	SAF 70	Longleaf Pine - rough age 3
191	PINUS	STROBIFORMIS	SAF 70	Longleaf Pine - rough age 3
192	PINUS	PUNGENS	SAF 70	Longleaf Pine - rough age 3
193	PINUS	VIRGINIANA	NVCS 3310	Pinus virginiana - Liquidambar styraciflua - Liriodendron tulipifera Forest
195	PINUS	ALBICAULIS	NVCS 381	Pinus albicaulis Forest
196	PINUS	MONTICOLA	NVCS 451	Pinus monticola Forest
198	POPULUS	GRANDIDENTATA	SAF 70	Longleaf Pine - rough age 3
199	PRUNUS	----	SAF 70	Longleaf Pine - rough age 3
200	CERCIS	CANADENSIS	SAF 70	Longleaf Pine - rough age 3
201	ROBINIA	PSEUDOACACIA	SAF 70	Longleaf Pine - rough age 3

Cross-walk of BELD Vegetation Types to FOFEM Forest Classification Types

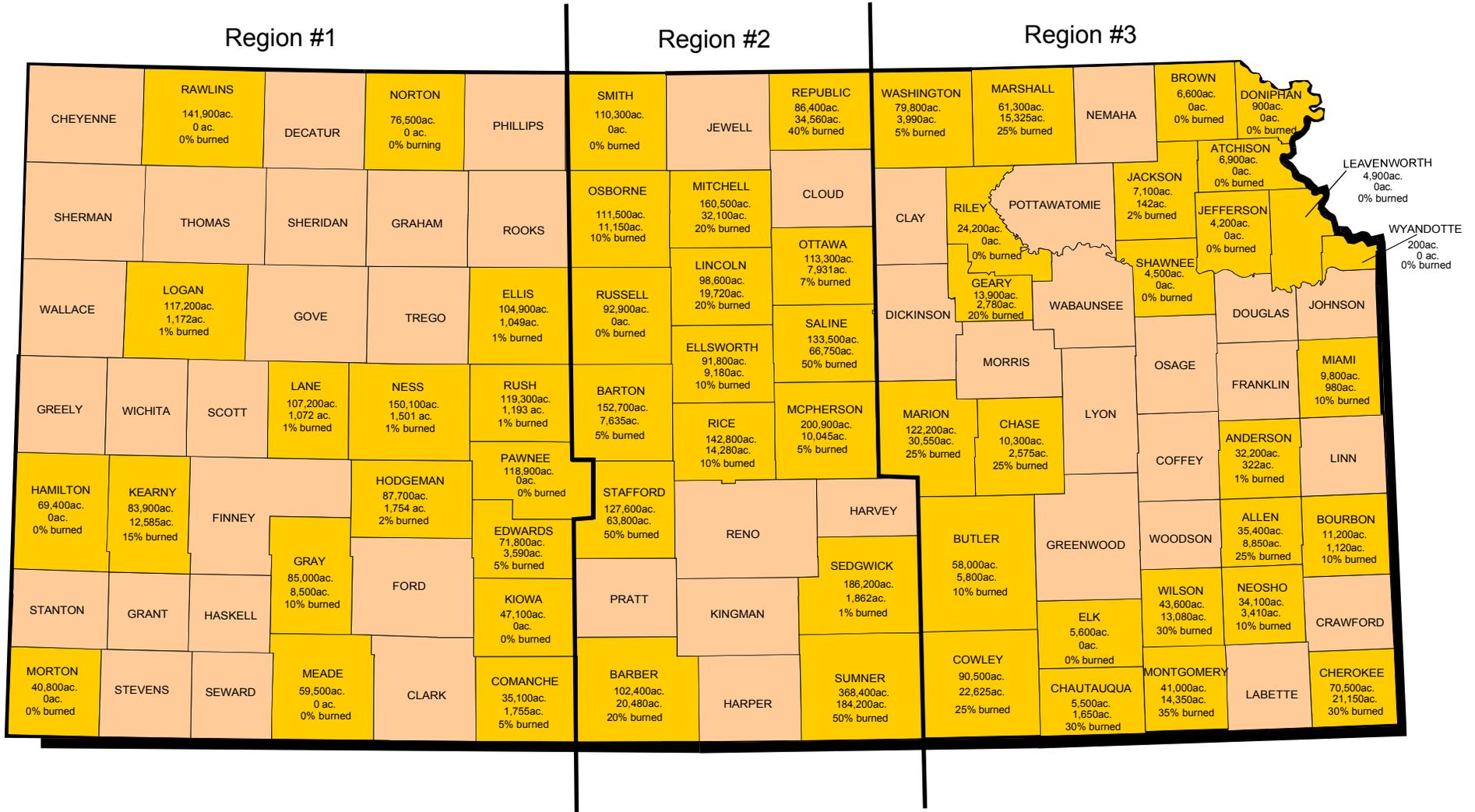
BELD	Genus	Species	FOFEM ID	FOFEM Cover Description
202	SASSAFRAS	ALBIDUM	SAF 70	Longleaf Pine - rough age 3
203	SEQUOIA	SEMPERVIRENS	NVCS 310	Sequoia sempervirens - Tsuga heterophylla Forest
204	AMELANCHIER	ARBOREA	SAF 70	Longleaf Pine - rough age 3
205	HALESIA	----	SAF 70	Longleaf Pine - rough age 3
206	COTINUS	OBOVATUS	SAF 70	Longleaf Pine - rough age 3
207	SAPINDUS	DRUMMONDII	SAF 70	Longleaf Pine - rough age 3
208	OXYDENDRUM	ARBORETUM	SAF 70	Longleaf Pine - rough age 3
209	VACCINIUM	ARBOREUM	SAF 70	Longleaf Pine - rough age 3
210	PICEA	MARIANNA	SAF 70	Longleaf Pine - rough age 3
211	PICEA	PUNGENS	NVCS 731	Picea pungens Forest
212	PICEA	BREWERIANA	SAF 70	Longleaf Pine - rough age 3
213	PICEA	ENGELMANNII	NVCS 691	Picea engelmannii Forest
214	PICEA	ABIES	SAF 70	Longleaf Pine - rough age 3
215	PICEA	RUBENS	SAF 84	Slash Pine - rough age 3
216	PICEA	SITCHENSIS	NVCS 760	Picea sitchensis Forest
217	PICEA	----	SAF 70	Longleaf Pine - rough age 3
218	PICEA	GLAUCA	NVCS 711	Picea glauca Forest
219	LIQUIDAMBAR	STYRACIFLUA	NVCS 3270	Pinus taeda - (Liquidambar styraciflua - Liriodendron tulipifera) Forest
220	PLATANUS	OCCIDENTALIS	NVCS 3440	Pinus taeda - Platanus occidentalis - Acer negundo Temporarily Flooded Forest
221	SAPIUM	SEBIFERUM	SAF 70	Longleaf Pine - rough age 3
222	TAMARIX	CHINENSIS	SAF 70	Longleaf Pine - rough age 3
223	LITHOCARPUS	DENSIFLORUS	SAF 70	Longleaf Pine - rough age 3
224	TORREYA	CALIFORNICA	SAF 70	Longleaf Pine - rough age 3
225	ALEURITES	FORDII	SAF 70	Longleaf Pine - rough age 3
226	UNKNOWN	----	SAF 70	Longleaf Pine - rough age 3
227	JUGLANS	NIGRA	SAF 70	Longleaf Pine - rough age 3
228	PLANERA	AQUATICA	SRM 723	Sea Oats
229	SALIX	NIGRA	SAF 104	Sweetbay - Swamp Tupelo - Redbay
230	LIRIODENDRON	TULIPIFERA	NVCS 1420	Tamarack
231	CLADRASTIS	LUTEA	SAF 70	Longleaf Pine - rough age 3

APPENDIX C

MAPS OF KANSAS AGRICULTURAL SUBREGIONS

KANSAS

Acres of Wheat Burned/Year



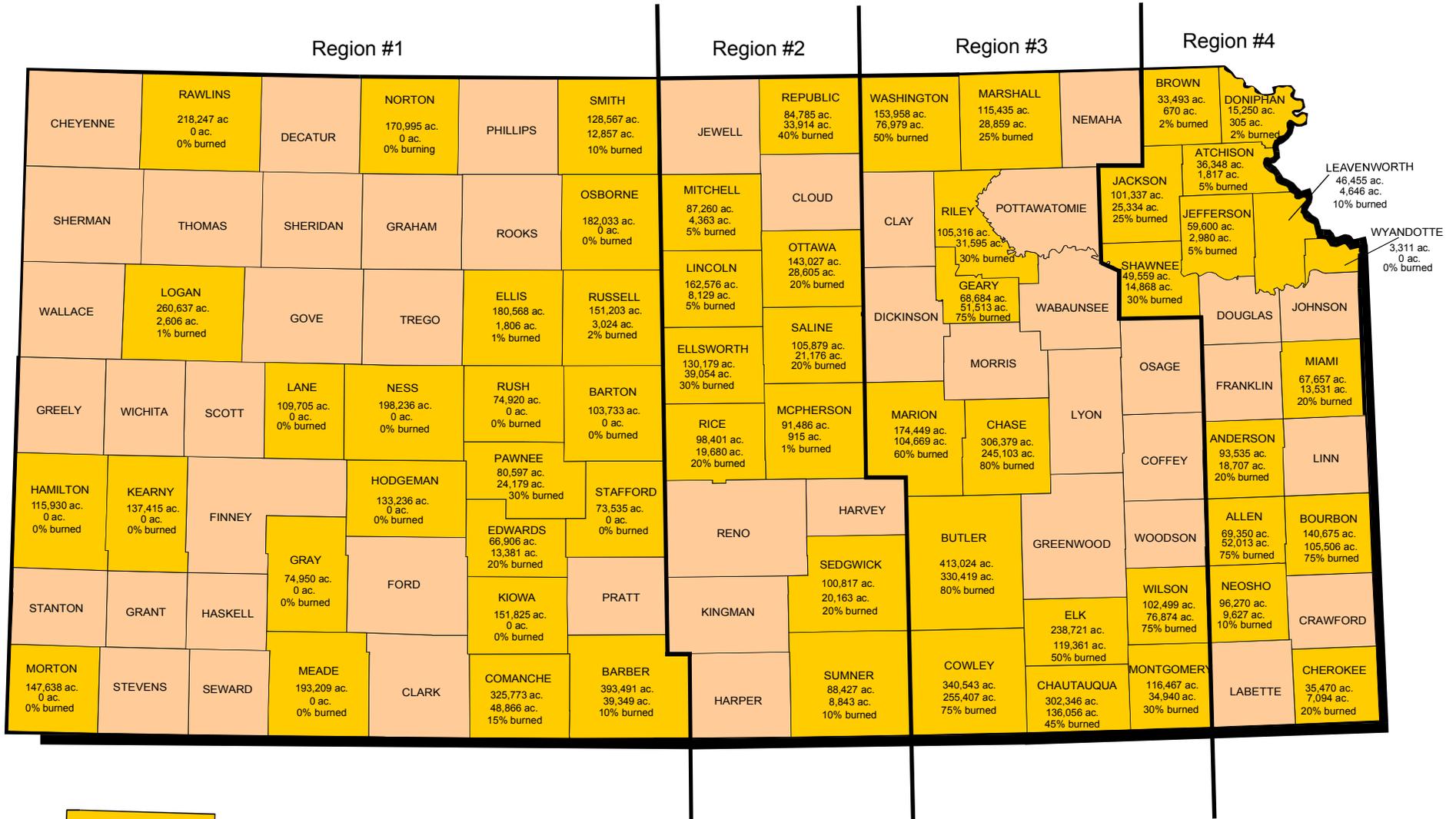
MORTON — County Name
 40,800ac. — Total Wheat in County (acres)
 0ac. — Total Wheat in County Burned (acres)
 0% burned — % Burned

*Note - Data supplied by Sonoma Technology, Inc. April 2004

*Note - Wheat regions verified by Bill Hargrove at Kansas State University Agriculture Extension Office
 Appendix A of Final Report (S11-902514-2516-FR)

KANSAS

Acres of Rangeland Burned/Year



MORTON — County Name
147,638 ac. — Total Rangeland in County (acres)
0 ac. — Total Rangeland in County Burned (acres)
0% burned — % Burned

*Note - Data supplied by Sonoma Technology, Inc
 April 2004
 Appendix A of Final Report (STI-902514-2516-FR)