IOWA SOIL 2000

CONSERVATION FOLDER

distributed by

George Warson

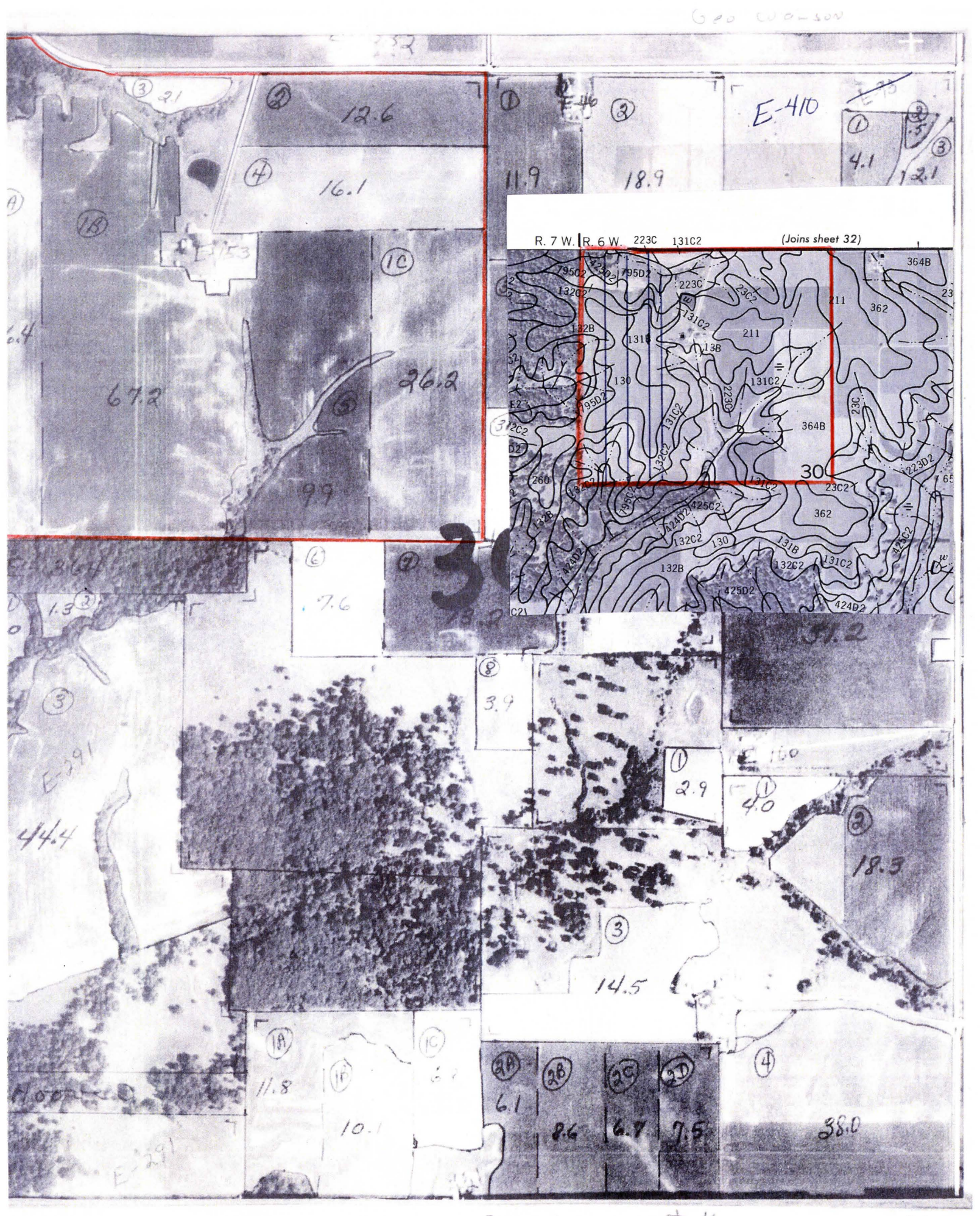
SOIL CONSERVATION DISTRICT

In Cooperation With

IOWA DEPARTMENT OF SOIL CONSERVATION

USDA SOIL CONSERVATION SERVICE

IOWA COOPERATIVE EXTENSION SERVICE



NOT TO SCALE CROP YEAR Lee 3-4 21

SOIL LOSS WORKSHEET

	EXAMPLE	Field No. 1.	Field No. 2.	Field No. 3.	Field No. 4.	Field No. 5.	Field No. 6.	Field No. 7.
Soil Mapping Unit	280B	79502	130	131B	131C2	~~131C2~~ 3648	~~3648~~ 23C2	
Slope Group	B	D		B	C	B	C	
Conservation Practice	Contour	Up-Down	Up-Down	Up-Down	Up-Down	U D	U D	
% Residue Cover	0%	0%	0%	0%	0%	0	0	
Crop Rotation	Continuous Corn	Corn-Beans	Corn Beans	Corn Beans	Corn Beans	C B	C B	
"K" Value	.32	.43	.37	.37	.37	.37	.32	
Soil Loss Limit (tons per acre per year)	4 T/ac/yr	2	4	3-2	3-2	~~3~~ 3	5	
Estimated Soil Loss (average tons per acre per year)	7 T/ac/yr	90	10.1 ~~7~~	20.8 ~~7~~	47.6 ~~3~~	20.8	41.2	
Alternative Farming Method								
Conservation Practice	Contour	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	
% Residue Cover	50%	95%	95%	95%	95%	95%	95%	
Crop Rotation	Continuous Corn	Corn-Beans	C-B	C-B	C-B	C-B	C-B	
Estimated Soil Loss	4 T/ac/yr							

NOTE: While using the SOIL LOSS WORKSHEET, it is necessary to understand that the figures listed are average conditions and will only give you a guide to the soil loss on your farm. For more exact information on soil loss and the treatment needed to correct soil loss problems, contact the Soil Conservation District Field Office.

SOIL MAPPING UNITS FOUND ON YOUR FARM

SOIL MAPPING UNIT	"K" VALUE*	SOIL LOSS LIMIT** (TONS/ACRE/YEAR)
13B	.28 - .32	5
23C2	.32	5
130	.37	4
131B / 131C2	.37	3-2
223C	.43	3
211	.37	4
364B	.37	3
795D2	.43	2
425D2 / 425C2	.37	3

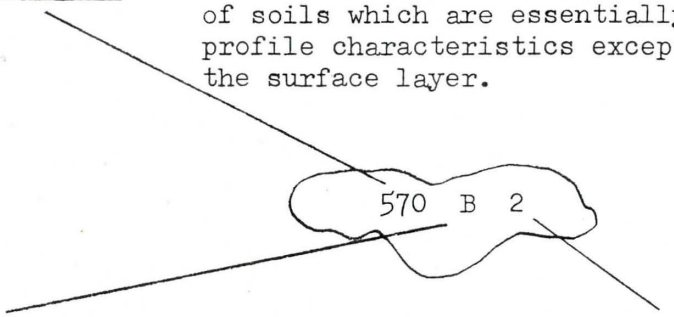
NOTE: Soils on slopes in excess of 14% (D Slope) are not listed, as these are normally non-cropland soils.

* "K" Value - a measurement of the rate at which a soil will erode.

** Soil Loss Limit - an acceptable limit to which actual soil losses can be compared.

EXPLANATION OF "SOIL MAPPING UNIT"

Soil Series - a basic unit of soil classification consisting of soils which are essentially alike in all major profile characteristics except for the texture of the surface layer.

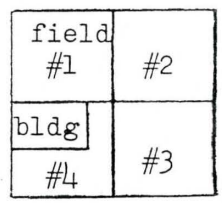
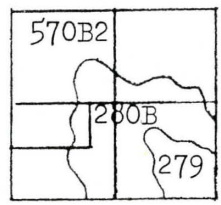


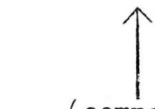
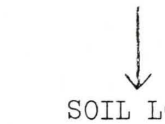
Slope Class - expressed in percentages which equal the number of feet of fall in 100' horitontal distance.

A = 0-2%
B = 2-5%
C = 5-9%
D = 9-14%

Erosion Class - a grouping of erosion conditions based on the amount of topsoil remaining.

0-1 or no symbol	=	slight erosion (average 7" topsoil remaining)
2	=	moderate erosion (average 3" to 7" topsoil remaining)
3	=	severe erosion (less than 3" topsoil remaining)

STEP NO.	GUIDE TO ESTIMATING SOIL LOSS (Work through example first)	EXAMPLE
1.	Sketch field boundaries on Planning Map enclosed.	 Planning Map
2.	Resketch field boundaries on the Soils Map enclosed.	 Soils Map
3.	Examine the symbols on Soils Map to determine Soil Mapping Unit which occupies the most area in field #1. Enter the symbol for the selected Soil Mapping Unit on "Soil Loss Worksheet" (page 4).	570B2
4.	Record the Slope Class (A through D) for the selected Soil Mapping Unit on "Soil Loss Worksheet".	B

STEP NO.	EXAMPLE
5. Determine which conservation practice you use on the field. Record the selected option on the "Soil Loss Worksheet". (Use "contour" for example problem.) Options: Up-downhill Terrace Contour	Contour
6. Estimate the percentage of the field covered with last year's crop residue after you planted this year's crop. Record the estimated percent on the "Soil Loss Worksheet". (Use "0%" for example problem.) Options: 0% 25% 50% 75% 95%	0%
7. Determine which crop rotation you use on the field and record the selected option on the "Soil Loss Worksheet". (Use "continuous corn" for example problem.) Options: Continuous Corn Corn-Soybeans Corn-Corn-Oats-Meadow	Continuous Corn
8. Refer to the soils list on page 3 and record your Soil Mapping Unit's corresponding "K Value" and Soil Loss Limit on the "Soil Loss Worksheet". (Use "K" Value ".32" and Soil Loss Limit "4 T/ac/yr" for example problem.)	"K" Value = .32 SOIL LOSS LIMIT = 4 Ton/acre/year
9. To figure the actual soil loss on this field, select the "Conservation Alternative Table" which corresponds to the "K" value and select the crop rotation for your field. (Example - "K" Value ".32", Continuous Corn) Find your Slope Class (Column 1.) and select your Conservation Practice (Column 2.). Record Soil Loss under appropriate Residue Cover (Columns 3. through 7.) on "Soil Loss Worksheet".	 (compare)  SOIL LOSS = 7 Ton/acre/year

NOTE: If your present farming method results in soil loss in excess of the average Soil Loss Limit for your conservation district, consider what alternative conservation practices you might use to reduce soil loss to acceptable limits. Using different conservation practices, residue covers and/or crop rotations, record these alternate possibilities on the "Soil Loss Worksheet".

10. Follow the same procedure for all cropland fields on your farm and record on the "Soil Loss Worksheet".

K = .43

CONSERVATION ALTERNATIVE TABLE
TONS/ACRE/YEAR

	SLOPE GROUP	CONSERVATION PRACTICE	RESIDUE COVER 95%	75%	50%	25%	0%
Column	1.	2.	3.	4.	5.	6.	7.
CONTINUOUS CORN	A (2%)	Up-downhill	.8	2.6	5.1	7.1	9.1
		Contour	.4	1.3	2.7	3.6	4.6
		Terraced	.4	1.2	2.4	3.4	4.3
	B (4%)	Up-downhill	1.6	5.2	10.5	14.9	18.9
		Contour	.8	2.7	5.4	7.4	9.5
		Terraced	.7	2.0	4.0	5.6	7.3
	C (8%)	Up-downhill	3.6	12.1	24.2	33.7	43.4
		Contour	2.2	7.3	14.5	20.3	26.1
		Terraced	1.1	3.5	7.0	9.8	12.6
	D (12%)	Up-downhill	5.9	19.6	39.3	54.8	70.4
		Contour	3.5	11.7	23.4	32.8	42.3
		Terraced	1.6	5.5	11.0	15.6	19.9
CORN-SOYBEANS	A (2%)	Up-downhill	2.3	3.4	6.2	9.0	11.7
		Contour	1.2	1.6	3.1	4.4	5.9
		Terraced	1.1	1.5	2.8	4.2	5.4
	B (4%)	Up-downhill	4.7	6.9	12.6	18.4	24.2
		Contour	2.4	3.4	6.3	9.3	12.1
		Terraced	1.9	2.7	4.8	7.1	9.3
	C (8%)	Up-downhill	10.9	15.6	28.9	42.2	55.4
		Contour	6.5	9.4	17.3	25.3	33.2
		Terraced	3.1	4.6	8.3	12.2	16.1
	D (12%)	Up-downhill	17.6	25.4	46.9	68.5	90.0
		Contour	10.6	15.3	28.2	41.1	54.0
		Terraced	5.0	7.3	13.3	19.4	25.5
CORN-CORN-OATS-MEADOW	A (2%)	Up-downhill	.8	1.3	1.7	2.3	3.1
		Contour	.4	.7	.9	1.2	1.5
		Terraced	.4	.5	.8	1.1	1.3
	B (4%)	Up-downhill	1.6	2.7	3.6	4.7	6.3
		Contour	.8	1.3	1.9	2.4	3.2
		Terraced	.7	1.1	1.5	1.9	2.4
	C (8%)	Up-downhill	3.6	6.0	8.5	10.9	14.5
		Contour	2.2	3.6	5.1	6.5	8.7
		Terraced	1.1	1.7	2.4	3.1	4.2
	D (12%)	Up-downhill	5.9	9.8	13.7	17.6	23.4
		Contour	3.5	5.9	8.2	10.6	14.1
		Terraced	1.6	2.7	3.9	5.0	6.6

K=.37

CONSERVATION ALTERNATIVE TABLE
TONS/ACRE/YEAR

	SLOPE GROUP	CONSERVATION PRACTICE	RESIDUE COVER 95%	75%	50%	25%	0%
Column	1.	2.	3.	4.	5.	6.	7.
CONTINUOUS CORN	A (2%)	Up-downhill	.7	2.2	4.4	6.1	7.9
		Contour	.3	1.2	2.3	3.1	3.9
		Terraced	.3	1.0	2.1	2.9	3.7
	B (4%)	Up-downhill	1.4	4.5	9.0	12.7	16.3
		Contour	.7	2.3	4.6	6.4	8.2
		Terraced	.6	1.7	3.5	4.9	6.2
	C (8%)	Up-downhill	3.1	10.4	20.8	29.0	37.3
		Contour	1.9	6.2	12.5	17.5	22.4
		Terraced	.9	3.0	6.0	8.4	10.4
	D (12%)	Up-downhill	5.1	16.9	33.8	47.2	60.6
		Contour	3.0	10.1	20.1	28.2	36.4
		Terraced	1.4	4.7	9.5	13.9	17.1
CORN-SOYBEANS	A (2%)	Up-downhill	2.0	2.9	5.3	7.7	10.1
		Contour	1.0	1.4	2.7	3.8	5.1
		Terraced	.9	1.3	2.4	3.6	4.6
	B (4%)	Up-downhill	4.0	5.9	10.9	15.8	20.8
		Contour	2.1	2.9	5.4	8.0	10.4
		Terraced	1.6	2.3	4.2	6.1	8.0
	C (8%)	Up-downhill	9.4	13.4	24.9	36.3	47.6
		Contour	5.6	8.1	14.9	21.7	28.6
		Terraced	2.7	3.9	7.2	10.5	13.9
	D (12%)	Up-downhill	15.1	21.9	40.4	59.0	77.5
		Contour	9.1	13.2	24.3	35.4	41.5
		Terraced	4.3	6.2	11.4	16.7	22.0
CORN-CORN-OATS-MEADOW	A (2%)	Up-downhill	.7	1.2	1.5	2.0	2.7
		Contour	.3	.6	.8	1.0	1.3
		Terraced	.3	.5	.7	.9	1.2
	B (4%)	Up-downhill	1.4	2.3	3.1	4.0	5.4
		Contour	.7	1.2	1.6	2.1	2.8
		Terraced	.6	.9	1.3	1.6	2.1
	C (8%)	Up-downhill	3.1	5.2	7.3	9.4	12.5
		Contour	1.9	3.1	4.4	5.6	7.5
		Terraced	.9	1.5	2.1	2.7	3.6
	D (12%)	Up-downhill	5.1	8.4	11.8	15.1	20.1
		Contour	3.0	5.1	7.1	9.1	12.1
		Terraced	1.4	2.3	3.4	4.3	5.7

K=.32

CONSERVATION ALTERNATIVE TABLE
TONS/ACRE/YEAR

	SLOPE GROUP	CONSERVATION PRACTICE	RESIDUE COVER 95%	75%	50%	25%	0%
Column	1.	2.	3.	4.	5.	6.	7.
CONTINUOUS CORN	A (2%)	Up-downhill	.6	1.9	3.8	5.3	6.8
		Contour	.3	1.0	2.0	2.7	3.4
		Terraced	.3	.9	1.8	2.5	3.2
	B (4%)	Up-downhill	1.2	3.9	7.8	11.0	14.1
		Contour	.6	2.0	4.0	5.5	7.1
		Terraced	.5	1.5	3.0	4.2	5.4
	C (8%)	Up-downhill	2.7	9.0	18.0	25.1	32.3
		Contour	1.6	5.4	10.8	15.1	19.4
		Terraced	.8	2.6	5.2	7.3	9.4
	D (12%)	Up-downhill	4.4	14.6	29.2	40.8	52.4
		Contour	2.6	8.7	17.4	24.4	31.5
		Terraced	1.2	4.1	8.2	11.6	14.8
CORN-SOYBEANS	A (2%)	Up-downhill	1.7	2.5	4.6	6.7	8.7
		Contour	.9	1.2	2.3	3.3	4.4
		Terraced	.8	1.1	2.1	3.1	4.0
	B (4%)	Up-downhill	3.5	5.1	9.4	13.7	18.0
		Contour	1.8	2.5	4.7	6.9	9.0
		Terraced	1.4	2.0	3.6	5.3	6.9
	C (8%)	Up-downhill	8.1	11.6	21.5	31.4	41.2
		Contour	4.8	7.0	12.9	18.8	24.7
		Terraced	2.3	3.4	6.2	9.1	12.0
	D (12%)	Up-downhill	13.1	18.9	34.9	51.0	67.0
		Contour	7.9	11.4	21.0	30.6	40.2
		Terraced	3.7	5.4	9.9	14.4	19.0
CORN-CORN-OATS-MEADOW	A (2%)	Up-downhill	.6	1.0	1.3	1.7	2.3
		Contour	.3	.5	.7	.9	1.1
		Terraced	.3	.4	.6	.8	1.0
	B (4%)	Up-downhill	1.2	2.0	2.7	3.5	4.7
		Contour	.6	1.0	1.4	1.8	2.4
		Terraced	.5	.8	1.1	1.4	1.8
	C (8%)	Up-downhill	2.7	4.5	6.3	8.1	10.8
		Contour	1.6	2.7	3.8	4.8	6.5
		Terraced	.8	1.3	1.8	2.3	3.1
	D (12%)	Up-downhill	4.4	7.3	10.2	13.1	17.4
		Contour	2.6	4.4	6.1	7.9	10.5
		Terraced	1.2	2.0	2.9	3.7	4.9

K=.28

CONSERVATION ALTERNATIVE TABLE
TONS/ACRE/YEAR

	SLOPE GROUP	CONSERVATION PRACTICE	RESIDUE COVER 95%	75%	50%	25%	0%
Column	1.	2.	3.	4.	5.	6.	7.
CONTINUOUS CORN	A (2%)	Up-downhill	.5	1.7	3.3	4.6	6.0
		Contour	.3	.9	1.8	2.4	3.0
		Terraced	.3	.8	1.6	2.2	2.8
	B (4%)	Up-downhill	1.1	3.4	6.9	9.6	12.3
		Contour	.5	1.8	3.5	4.8	6.2
		Terraced	.4	1.3	2.6	3.7	4.7
	C (8%)	Up-downhill	2.4	7.9	15.8	22.0	28.3
		Contour	1.4	4.7	9.5	13.2	17.0
		Terraced	.7	2.3	4.6	6.4	8.2
	D (12%)	Up-downhill	3.9	12.8	25.6	35.7	45.9
		Contour	2.3	7.6	15.2	21.4	27.6
		Terraced	1.1	3.6	7.2	10.2	13.0
CORN-SOYBEANS	A (2%)	Up-downhill	1.5	2.2	4.0	5.9	7.6
		Contour	.8	1.1	2.0	2.9	3.9
		Terraced	.7	1.0	1.8	2.7	3.5
	B (4%)	Up-downhill	3.1	4.5	8.2	12.0	15.8
		Contour	1.6	2.2	4.1	6.0	7.9
		Terraced	1.2	1.8	3.2	4.6	6.0
	C (8%)	Up-downhill	7.1	10.2	18.8	27.5	36.1
		Contour	4.2	6.1	11.3	16.5	21.6
		Terraced	2.0	3.0	5.4	8.0	10.5
	D (12%)	Up-downhill	11.5	16.5	30.5	44.6	58.6
		Contour	6.9	10.0	18.4	26.8	35.2
		Terraced	3.2	4.7	8.7	12.6	16.6
CORN-CORN-OATS-MEADOW	A (2%)	Up-downhill	.5		1.1	1.5	2.0
		Contour	.3	.4	.6	.8	1.0
		Terraced	.3	.4	.5	.7	.9
	B (4%)	Up-downhill	1.1	1.8	2.4	3.1	4.1
		Contour	.5	.9	1.2	1.6	2.1
		Terraced	.4	.7	1.0	1.2	1.6
	C (8%)	Up-downhill	2.4	3.9	5.5	7.1	9.5
		Contour	1.4	2.4	3.3	4.2	5.7
		Terraced	.7	1.1	1.6	2.0	2.7
	D (12%)	Up-downhill	3.9	6.4	8.9	11.5	15.2
		Contour	2.3	3.9	5.3	6.9	9.2
		Terraced	1.1	1.8	2.5	3.2	4.3