



# Optimum Crop Productivity Ratings for Illinois Soil

University of Illinois  
at Urbana-Champaign

College of Agricultural, Consumer  
and Environmental Sciences

Office of Research



**ILLINOIS**

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Bulletin 811  
August 2000

Bulletin 811

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This publication was prepared by K.R. Olson, Professor of Soil Conservation, Soil Management and Pedology (NRES), and J.M. Lang, Associate Agronomist (NRES).

The authors gratefully acknowledge the contributions and support of members of the Departments of Crop Sciences (CS), Natural Resources and Environmental Sciences (NRES), and Agricultural and Consumer Economics (ACE); Illinois Department of Revenue (IDR); Illinois Farm Bureau (IFB); and Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture.

Funding for the project was provided by the Special Research Initiative of the Office of Research, the Department of Natural Resources and Environmental Sciences, and the Illinois Department of Revenue.



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## Introduction

This publication was prepared as a supplement to the 10-year crop yield estimates under an average level of management presented in Bulletin 810, *Average Crop, Pasture, and Forestry Productivity Ratings for Illinois Soils* (Olson et al., 2000). In the 1990s half of Illinois farmers obtained a lower crop yield and half obtained a higher crop yield than those established in Bulletin 810 for all Illinois soils. The major reasons for the yield differences, in addition to level of management, are most likely a result of variations in regional weather, ranges of soil properties within a soil type, and contrasting soil map unit inclusions. This publication is a supplement to Bulletin 810 and includes an additional set of crop yield estimates for all Illinois soils under an optimum level of management. The *optimum level of management* is defined as the crop yields that were achieved by the top 16% of farmers in Illinois in the 1990s. These 10-year average crop yields under an optimum level of management for most soils are thought to equal approximately 1 standard deviation (SD) above mean crop yields of all farmers. The remaining 84% of farmers had 10-year average crop yields below these optimum crop yields. The optimum crop yield estimates are provided for both private and public use as needed. We anticipate putting this publication, including these optimum level of management crop yields and productivity indices, on a Department of Natural Resources and Environmental Sciences web site at the following location: <http://www.nres.uiuc.edu/soilproductivity>.

## Optimum Level of Management

Crop yields produced by any soil under a given climate depend on the technological inputs used and the capacity of the soil and crop to respond. Management is the selection and application of crop-production technology. Continuing increases in average crop yields result from improved management. Because the impact of management on crop yields is so great, the optimum level of management should be defined for measures of soil productivity to have any meaning. Table S1 gives some representative characteristics of the optimum management level and includes the inputs used for crop production by the top 16% of farmers in Illinois. The optimum level of management includes inputs that are near those required for maximum profit with 1990s technology. Intensive drainage systems with adequate outlets are needed for crops grown on naturally very poorly or poorly drained soils. All crop yield estimates are for dryland conditions, and irrigation is not included as a management technique. Limestone should be applied to highly acid soils. Nitrogen from fertilizers or legumes is essential for corn production. Requirements such as these are met by optimum management (Table S1).

**Table S1. Goals of Optimum Management Level**

Management factor	optimum management
Drainage	parallel or herringbone pattern with closer-than-recommended spacing and adequate outlets
Soil pH	at or above 6.2 for grain; at or above 6.9 for alfalfa and clover
Available phosphorus (P-1 test)	based on soil test and depending on yield goal, at or above 50 pounds per acre
Available potassium	based on soil test and depending on yield goal, at or above 300 pounds per acre
Nitrogen rates per year for corn (or legume equivalent)	based on soil test and depending on yield goal, at or above 175 pounds per acre
Plant population (corn)	at or above 30,000 plants per acre
Crop residues	returned to soil with additional organic materials added as needed
Weed and insect control	timely using an integrated pest management approach
Tillage, planting operations	moldboard plow or conservation tillage <2% slopes; conservation tillage including no-tillage for 2% to 10% slopes
Soil erosion	reduced to below soil tolerances using conservation practices as required

The users should not assume that the optimum level of management is exactly the same as the high management level as defined in Circular 1016, *Productivity of Illinois Soils* (Odell and Oschwald, 1970), and later used in Circular 1156, *Soil Productivity in Illinois* (Fehrenbacher et al., 1978). In Circulars 1016 and 1156, the high management level was considered to be that used by the upper 10% of Illinois farmers, and their 1970s crop yields were assumed to be at or above the high management level provided in Circular 1156. The crop yields (Table S2) under an optimum level of management, as defined in this supplement, represent approximately 1 SD above the mean crop yields under average management. Only 16% of Illinois farmers achieved these 10-year crop yields in the 1990s. The differences between average crop yields and optimum crop yields vary with an individual soil's response to 1990s technology. The optimum

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
2	Cisne silt loam	FAV	135	41	53	0	102	0.00	4.18	109	2
3	Hoyleton silt loam	FAV	132	42	52	0	103	0.00	4.18	108	3
4	Richview silt loam	FAV	137	43	54	0	105	3.50	0.00	111	4
5	Blair silt loam	FAV	124	40	50	0	99	0.00	3.96	104	5
6	Fishhook silt loam	UNF	119	38	46	57	0	0.00	3.50	97	6
7	Atlas silt loam	UNF	106	37	42	49	0	0.00	3.16	90	7
8	Hickory loam	FAV	109	37	44	51	0	0.00	3.62	92	8
9	Sandstone rock land	Crop yield data not available									9
10	Plumfield silty clay loam	FAV	96	32	37	0	81	0.00	3.16	81	10
12	Wynoose silt loam	FAV	115	38	46	0	97	0.00	3.84	97	12
13	Bluford silt loam	FAV	122	40	50	0	99	3.05	0.00	101	13
14	Ava silt loam	UNF	121	39	50	0	96	2.94	0.00	100	14
15	Parke silt loam	FAV	138	43	53	0	104	3.28	0.00	110	15
16	Rushville silt loam	FAV	133	43	55	66	0	0.00	4.18	109	16
17	Keomah silt loam	FAV	145	46	59	75	0	0.00	4.63	119	17
18	Clinton silt loam	FAV	149	46	60	78	0	4.75	0.00	121	18
19	Sylvan silt loam	FAV	136	44	54	63	0	3.62	0.00	111	19
21	Pecatonica silt loam	FAV	139	44	54	69	0	4.07	0.00	113	21
22	Westville silt loam	FAV	137	45	54	67	0	3.73	0.00	113	22
23	Blount silt loam	FAV	125	43	52	59	0	0.00	3.96	105	23
24	Dodge silt loam	FAV	150	48	58	75	0	4.41	0.00	122	24
25	Hennepin loam	UNF	107	37	38	42	0	0.00	3.50	90	25
26	Wagner silt loam	FAV	131	43	54	63	0	0.00	4.18	109	26
27	Miami silt loam	FAV	138	44	54	68	0	3.84	0.00	112	27
28	Jules silt loam	FAV	153	47	57	70	0	4.41	0.00	122	28
29	Dubuque silt loam	UNF	117	38	49	62	0	0.00	3.62	96	29
30	Hamburg silt loam	FAV	132	42	49	57	0	0.00	3.96	107	30
31	Pierron silt loam	FAV	122	39	50	0	98	0.00	4.07	102	31
34	Tallula silt loam	FAV	164	50	61	81	0	4.52	0.00	131	34
35	Bold silt loam	FAV	140	41	51	64	0	0.00	3.96	110	35
36	Tama silt loam	FAV	169	54	66	88	0	6.55	0.00	139	36
37	Worthen silt loam	FAV	175	54	67	92	0	6.33	0.00	142	37
38	Rocher loam	FAV	136	42	52	69	0	3.28	0.00	109	38
40	Dodgeville silt loam	FAV	124	43	55	63	0	3.62	0.00	104	40
41	Muscatine silt loam	FAV	180	57	68	94	0	0.00	5.42	147	41
42	Papineau fine sandy loam	FAV	124	41	50	58	0	0.00	3.84	103	42
43	Ipava silt loam	FAV	172	56	69	90	0	0.00	5.31	142	43
45	Denny silt loam	FAV	143	47	58	69	0	0.00	4.41	118	45
46	Herrick silt loam	FAV	163*	52*	66	85	0	0.00	4.97	133*	46
48	Ebbert silt loam	FAV	155	48	59	0	112	0.00	4.63	125	48
49	Watseka loamy fine sand	FAV	110*	37*	46*	55	0	0.00	3.96	93*	49
50	Virden silty clay loam	FAV	164	53	64	84	0	0.00	4.75	135	50
51	Muscatine silt loam	FAV	180	57	68	94	124	0.00	5.42	147	51
53	Bloomfield fine sand	FAV	104*	33*	44*	53	0	0.00	3.50	85*	53
54	Plainfield sand	FAV	89*	31*	36*	43	0	0.00	3.05	76*	54
55	Sidell silt loam	FAV	163	50	63	86	0	5.31	0.00	132	55

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IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
56	Dana silt loam	FAV	162*	50*	62*	89*	0	5.65	0.00	131*	56
57	Montmorenci silt loam	FAV	141	47	57	69	0	4.41	0.00	117	57
59	Lisbon silt loam	FAV	173	55	68	90	0	0.00	5.09	141	59
60	La Rose silt loam	FAV	143	47	57	67	0	4.52	0.00	118	60
61	Atterberry silt loam	FAV	164	51	64	88	0	0.00	4.97	132	61
62	Herbert silt loam	FAV	161	51	61	82	0	0.00	4.75	131	62
63	Blown-out land	Crop yield data not available									63
64	Parr fine sandy loam	FAV	131	42	54	70	0	4.29	0.00	108	64
67	Harpster silty clay loam	FAV	164	52	61	80	0	0.00	4.86	133	67
68	Sable silty clay loam	FAV	173	57	67	89	0	0.00	5.20	143	68
69	Milford silty clay loam	FAV	154	51	61	79	0	0.00	4.97	128	69
70	Beaucoup silty clay loam	FAV	159	53	62	81	0	0.00	4.86	132	70
71	Darwin silty clay	FAV	134	45	54	64	0	0.00	3.96	111	71
72	Sharon silt loam	FAV	148	48	57	75	0	4.29	0.00	122	72
73	Ross loam	FAV	163	53	64	80	0	0.00	4.86	134	73
74	Radford silt loam	FAV	167	53	66	89	0	0.00	4.97	136	74
75	Drury silt loam	FAV	156	48	61	77	0	5.20	0.00	126	75
76	Otter silt loam	FAV	168	55	64	84	0	0.00	5.09	139	76
77	Huntsville silt loam	FAV	174	55	67	90	0	6.78	0.00	143	77
78	Arenzville silt loam	FAV	161	50	60	81	0	5.31	0.00	130	78
79	Menfro silt loam	FAV	149	46	57	0	110	4.41	0.00	120	79
81	Littleton silt loam	FAV	175	55	67	90	0	0.00	5.42	142	81
82	Millington loam	FAV	154	49	59	71	0	0.00	4.63	125	82
83	Wabash silty clay	FAV	141	46	55	67	0	0.00	4.29	116	83
84	Okaw silt loam	FAV	116	38	50	60	0	0.00	3.39	96	84
85	Jacob clay	FAV	95	35	38	42	0	0.00	3.05	82	85
86	Osco silt loam	FAV	172	54	68	92	0	6.22	0.00	141	86
87	Dickinson sandy loam	FAV	128	42	51	67	0	3.05	0.00	104	87
88	Sparta loamy sand	FAV	107*	37*	45*	52	0	0.00	3.62	92*	88
89	Maumee fine sandy loam	FAV	112*	38*	47*	55	0	2.94	0.00	94*	89
90	Bethalto silt loam	FAV	165	51	64	0	118	0.00	4.97	134	90
91	Swygert silty clay loam	UNF	143	47	57	71	0	0.00	4.07	118	91
92	Sarpy sand	FAV	100*	34*	37	42	0	0.00	3.39	84*	92
93	Rodman gravelly loam	UNF	98*	35*	37	41	0	0.00	3.28	84*	93
94	Limestone rock land	Crop yield data not available									94
95	Shale rock land	Crop yield data not available									95
96	Eden silty clay loam	UNF	98	33	29	0	87	0.00	3.50	81	96
97	Houghton peat	FAV	149	47	0	0	0	0.00	0.00	121	97
98	Ade loamy fine sand	FAV	122*	42*	52*	63	0	0.00	3.84	103*	98
100	Palms muck	FAV	145	46	0	0	0	0.00	0.00	118	100
102	La Hogue loam	FAV	146	47	64	72	0	0.00	4.75	121	102
103	Houghton muck	FAV	158	52	0	0	0	0.00	0.00	130	103
104	Virgil silt loam	FAV	164	50	63	87	0	0.00	4.97	132	104
105	Batavia silt loam	FAV	159	50	61	85	0	5.20	0.00	129	105
107	Sawmill silty clay loam	FAV	170	54	64	87	0	0.00	5.20	139	107
108	Bonnie silt loam	FAV	134	44	53	66	0	0.00	4.18	111	108



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109	Raccoon silt loam	FAV	130	41	51	0	103	3.50	0.00	106	109
111	Rubio silt loam	FAV	139	44	57	70	0	0.00	4.29	114	111
112	Cowden silt loam	FAV	143	45	57	0	107	0.00	4.41	117	112
113	Oconee silt loam	FAV	148	45	57	0	107	0.00	4.75	119	113
115	Dockery silt loam	FAV	156	51	62	77	0	0.00	4.52	128	115
116	Whitson silt loam	FAV	142	45	54	68	0	0.00	4.29	116	116
119	Elco silt loam	FAV	136	45	53	68	0	3.84	0.00	112	119
120	Huey silt loam	UNF	98	38	38	0	86	0.00	3.16	89	120
122	Colp silt loam	UNF	121	38	51	64	0	0.00	3.84	98	122
123	Riverwash	Crop yield data not available									123
125	Selma loam	FAV	157	51	62	80	0	0.00	4.75	129	125
127	Harrison silt loam	FAV	161	50	63	84	0	5.20	0.00	130	127
128	Douglas silt loam	FAV	157	48	62	84	0	4.86	0.00	127	128
131	Alvin fine sandy loam	FAV	135	44	53	67	0	3.39	0.00	111	131
132	Starks silt loam	FAV	147	46	57	76	0	4.63	0.00	119	132
134	Camden silt loam	FAV	149	46	58	78	0	4.29	0.00	119	134
136	Brooklyn silt loam	FAV	136	44	54	67	0	0.00	4.07	112	136
138	Shiloh silty clay loam	FAV	158	52	62*	79	0	0.00	4.86	130*	138
141	Wesley fine sandy loam	FAV	137	45	53	70	0	0.00	4.29	113	141
142	Patton silty clay loam	FAV	160	52	61	77	0	0.00	4.86	132	142
145	Saybrook silt loam	FAV	162	51	62	86	0	5.65	0.00	132	145
146	Elliott silt loam	FAV	151	50	61	78	0	0.00	4.52	125	146
147	Clarence silty clay loam	UNF	126	44	53	59	0	0.00	3.96	107	147
148	Proctor silt loam	FAV	166	52	63	89	0	5.76	0.00	135	148
149	Brenton silt loam	FAV	176	54	67	95	0	0.00	5.09	141	149
150	Onarga sandy loam	FAV	134	43	55	69	0	3.73	0.00	110	150
151	Ridgeville fine sandy loam	FAV	136	46	57	70	0	0.00	4.52	114	151
152	Drummer silty clay loam	FAV	175	57	66	90	0	0.00	5.09	144	152
153	Pella silty clay loam	FAV	165	54	63	82	0	0.00	4.75	136	153
154	Flanagan silt loam	FAV	175	56	69	92	0	0.00	5.31	144	154
155	Stockland loam	UNF	108	38	45	51	0	0.00	3.73	92	155
157	Symerton loam	FAV	159	49	61	85	0	5.20	0.00	128	157
159	Pillot silt loam	FAV	146	48	58	73	0	4.18	0.00	120	159
162	Gorham silty clay loam	FAV	158	52	61	80	0	0.00	4.63	130	162
164	Stoy silt loam	FAV	131	42	52	0	102	0.00	4.18	109	164
165	Weir silt loam	FAV	127	41	51	0	101	0.00	4.07	106	165
166	Cohoctah loam	FAV	159	54	67	84	0	0.00	4.41	133	166
171	Catlin silt loam	FAV	168	53	66	89	0	6.10	0.00	138	171
172	Hoopeston sandy loam	FAV	132	43	53	66	0	0.00	4.29	109	172
173	McGary silt loam	UNF	119	40	51	58	0	0.00	3.84	100	173
174	Chaseburg silt loam	FAV	148	47	57	75	0	4.52	0.00	121	174
175	Lamont fine sandy loam	FAV	118	39	49	61	0	2.94	0.00	98	175
176	Marissa silt loam	FAV	150	48	62	80	0	0.00	4.86	123	176
178	Ruark fine sandy loam	FAV	118	40	50	58	0	0.00	3.96	99	178
179	Minneiska loam	FAV	125	42	47	52	0	0.00	4.07	104	179

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IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
180	Dupo silt loam	FAV	164	51	61	84	0	0.00	4.63	131	180
182	Peotone mucky silty clay loam, marl substratum	FAV	149	46	64	79	0	0.00	4.18	120	182
183	Shaffton loam	FAV	140	46	54	72	0	0.00	4.63	116	183
184	Roby fine sandy loam	FAV	131	45	52	63	0	0.00	4.18	111	184
188	Beardstown loam	FAV	137	45	57	70	0	4.41	0.00	114	188
189	Martinton silt loam	FAV	156	52	63	79	0	0.00	4.86	130	189
191	Knight silt loam	FAV	146	48	58	76	0	4.75	0.00	121	191
192	Del Rey silt loam	FAV	136	45	55	67	0	0.00	4.18	113	192
193	Mayville silt loam	FAV	134	44	54	69	0	3.62	0.00	110	193
194	Morley silt loam	FAV	125	42	52	60	0	3.05	0.00	104	194
197	Troxel silt loam	FAV	172	54	66	90	0	6.22	0.00	140	197
198	Elburn silt loam	FAV	178	55	67	85	0	0.00	5.20	143	198
199	Plano silt loam	FAV	175	54	67	93	0	6.33	0.00	142	199
200	Orio sandy loam	FAV	133	43	53	64	0	0.00	4.18	110	200
201	Gilford fine sandy loam	FAV	133	44	53	66	0	0.00	4.07	110	201
204	Ayr sandy loam	FAV	132	43	54	64	0	4.18	0.00	109	204
205	Metea silt loam	FAV	118	39	47	54	0	3.05	0.00	97	205
206	Thorp silt loam	FAV	153	50	60	79	0	0.00	4.63	126	206
208	Sexton silt loam	FAV	142	45	57	71	0	0.00	4.41	116	208
210	Lena muck	FAV	154	49	0	0	0	0.00	0.00	126	210
212	Thebes silt loam	FAV	136	44	53	70	0	3.62	0.00	111	212
213	Normal silt loam	FAV	163	52	63	84	0	0.00	5.09	133	213
214	Hosmer silt loam	UNF	126	41	52	0	99	3.28	0.00	105	214
216	Stookey silt loam	FAV	144	44	53	0	106	3.96	0.00	115	216
217	Twomile silt loam	FAV	127	42	52	63	0	0.00	3.84	106	217
218	Newberry silt loam	FAV	139	44	54	0	107	0.00	4.29	114	218
219	Millbrook silt loam	FAV	159	50	62	84	0	0.00	4.75	129	219
221	Parr silt loam	FAV	144	47	58	61	0	4.86	0.00	119	221
223	Varna silt loam	FAV	142	45	58	71	0	4.41	0.00	116	223
224	Strawn silt loam	FAV	127	42	51	55	0	3.16	0.00	105	224
225	Holton silt loam	FAV	122	39	45	0	95	0.00	3.84	100	225
226	Wirt silt loam	FAV	131	42	50	0	101	3.16	0.00	106	226
227	Argyle silt loam	FAV	148	48	59	76	0	4.52	0.00	122	227
228	Nappanee silt loam	UNF	104	37	41	44	0	0.00	3.62	89	228
229	Monee silt loam	FAV	120	39	50	58	0	0.00	3.62	99	229
230	Rowe silty clay	FAV	133	44	53	63	0	0.00	3.84	111	230
231	Evansville silt loam	FAV	163	50	59	0	116	0.00	4.52	129	231
232	Ashkum silty clay loam	FAV	154	51	59	77	0	0.00	4.63	127	232
233	Birkbeck silt loam	FAV	151	47	60	79	0	4.63	0.00	122	233
234	Sunbury silt loam	FAV	162	51	63	84	0	0.00	4.97	131	234
235	Bryce silty clay	FAV	146	49	58	73	0	0.00	4.29	121	235
236	Sabina silt loam	FAV	151	47	59	78	0	0.00	4.63	122	236
238	Rantoul silty clay	FAV	130	45	51	58	0	0.00	3.73	109	238
239	Dorchester silt loam	FAV	161	47	58	79	0	5.09	0.00	127	239
240	Plattville silt loam	FAV	145	47	59	80	0	4.52	0.00	120	240

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
241	Chatsworth silt loam	UNF	91	32	33	36	0	0.00	2.94	77	241
242	Kendall silt loam	FAV	155	48	60	80	0	0.00	4.75	125	242
243	St. Charles silt loam	FAV	151	47	59	78	0	4.63	0.00	122	243
244	Hartsburg silty clay loam	FAV	164	53	61	80	0	0.00	4.86	134	244
248	McFain silty clay	FAV	146	47	57	71	0	0.00	4.07	119	248
249	Edinburg silty clay loam	FAV	155	50	61	77	0	0.00	4.52	127	249
250	Velma loam	FAV	138	45	57	69	0	3.96	0.00	113	250
256	Pana silt loam	FAV	140	46	57	70	0	3.73	0.00	115	256
257	Clarksdale silt loam	FAV	157	50	62	80	0	0.00	4.75	128	257
259	Assumption silt loam	FAV	147	47	59	75	0	4.29	0.00	119	259
261	Niota silt loam	FAV	118	39	50	59	0	0.00	3.73	98	261
262	Denrock silt loam	FAV	141	45	58	73	0	3.84	0.00	115	262
264	El Dara sandy loam	FAV	122	41	52	58	0	2.94	0.00	101	264
265	Lomax loam	FAV	139	46	55	71	0	4.07	0.00	115	265
266	Disco sandy loam	FAV	130	44	52	63	0	3.39	0.00	108	266
267	Caseyville silt loam	FAV	154	47	59	0	112	0.00	4.75	126	267
268	Mt. Carroll silt loam	FAV	165	52	63	84	0	5.54	0.00	134	268
271	Timula silt loam	FAV	140	45	53	66	0	3.39	0.00	114	271
272	Edgington silt loam	FAV	150	49	59	76	0	0.00	4.75	124	272
274	Seaton silt loam	FAV	150	46	58	77	0	4.07	0.00	120	274
275	Joy silt loam	FAV	178	55	68	93	0	0.00	5.42	144	275
277	Port Byron silt loam	FAV	177	55	68	94	0	6.33	0.00	144	277
278	Stronghurst silt loam	FAV	154	48	60	78	0	0.00	4.75	125	278
279	Rozetta silt loam	FAV	148	46	59	76	0	4.75	0.00	120	279
280	Fayette silt loam	FAV	150	47	60	77	0	4.75	0.00	122	280
282	Chute fine sand	FAV	88*	31*	34*	40	0	0.00	3.05	75*	282
283	Downsouth silt loam	FAV	166	52	63	0	115	5.76	0.00	136	283
284	Tice silty clay loam	FAV	166	51	63	86	0	0.00	5.09	134	284
286	Carmi sandy loam	FAV	131	40	54	69	0	3.84	0.00	106	286
287	Chauncey silt loam	FAV	145	46	57	0	105	4.29	0.00	119	287
288	Petrolia silty clay loam	FAV	146	44	55	71	0	0.00	4.41	117	288
290	Warsaw silt loam	FAV	145	46	58	73	0	4.63	0.00	119	290
291	Xenia silt loam	FAV	146	45	58	75	0	4.07	0.00	118	291
292	Walkill silt loam	FAV	151	48	57	72	0	0.00	4.29	123	292
293	Andres silt loam	FAV	166	53	64	87	0	0.00	4.86	135	293
294	Symerton silt loam	FAV	161	50	62	82	0	5.65	0.00	131	294
295	Mokena silt loam	FAV	155	49	60	79	0	0.00	4.41	126	295
296	Washtenaw silt loam	FAV	162	51	61	84	0	0.00	4.52	131	296
297	Ringwood silt loam	FAV	158	51	62	82	0	5.09	0.00	129	297
298	Beecher silt loam	FAV	137	46	55	71	0	0.00	4.18	114	298
300	Westland clay loam	FAV	148	48	57	76	0	0.00	4.29	121	300
301	Grantsburg silt loam	UNF	120	41	50	0	94	2.94	0.00	102	301
302	Ambraw clay loam	FAV	138	45	55	68	0	0.00	4.52	114	302
304	Landes fine sandy loam	FAV	121	41	50	55	0	3.05	0.00	100	304
306	Allison silty clay loam	FAV	166	52	63	85	0	6.22	0.00	136	306
307	Iona silt loam	FAV	145	46	58	72	0	4.29	0.00	118	307

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
308	Alford silt loam	FAV	150	46	59	0	108	4.52	0.00	121	308
310	McHenry silt loam	FAV	141	45	55	70	0	3.84	0.00	115	310
311	Ritchey silt loam	UNF	100	34	42	52	0	0.00	3.16	84	311
312	Edwards muck	FAV	132	44	0	0	0	0.00	0.00	110	312
313	Rodman loam	UNF	98*	35*	37	41	0	0.00	3.28	84*	313
314	Joliet silty clay loam	FAV	117	40	47	61	0	0.00	3.28	98	314
315	Channahon silt loam	UNF	103	35	44	55	0	0.00	3.28	87	315
316	Romeo silt loam	UNF	55	20	31	40	0	0.00	2.03	49	316
317	Millsdale silty clay loam	FAV	129	45	54	68	0	0.00	3.96	109	317
318	Lorenzo loam	UNF	129	42	52	63	0	3.05	0.00	105	318
319	Aurelius muck	FAV	111	41	0	0	0	0.00	0.00	97	319
320	Frankfort silt loam	UNF	120	41	52	55	0	0.00	3.62	101	320
321	Du Page silt loam	FAV	153	49	59	73	0	4.75	0.00	125	321
322	Russell silt loam	FAV	144	45	57	73	0	4.07	0.00	116	322
323	Casco silt loam	UNF	126	41	50	59	0	2.60	0.00	103	323
324	Ripon silt loam	FAV	135	44	55	77	0	3.96	0.00	111	324
325	Dresden silt loam	FAV	142	46	55	73	0	3.73	0.00	116	325
326	Homer silt loam	FAV	140	44	53	69	0	0.00	4.18	114	326
327	Fox silt loam	FAV	134	43	53	66	0	3.16	0.00	109	327
328	Holly silt loam	FAV	132	43	49	0	101	0.00	3.84	109	328
329	Will silty clay loam	FAV	157	52	61	79	0	0.00	4.41	129	329
330	Peotone silty clay loam	FAV	148	49	55	70	0	0.00	4.52	123	330
331	Haymond silt loam	FAV	163	51	63	82	0	5.20	0.00	132	331
332	Billett sandy loam	FAV	121	40	49	58	0	2.71	0.00	99	332
333	Wakeland silt loam	FAV	157	51	61	77	0	0.00	4.63	128	333
334	Birds silt loam	FAV	141	46	55	68	0	4.41	0.00	117	334
335	Robbs silt loam	FAV	122	41	50	0	97	0.00	3.96	104	335
336	Wilbur silt loam	FAV	156	50	60	76	0	4.86	0.00	128	336
337	Creal silt loam	FAV	136	43	53	0	106	3.62	0.00	110	337
338	Hurst silt loam	UNF	121	39	50	61	0	0.00	3.73	100	338
339	Wellston silt loam	UNF	107	37	43	50	0	0.00	3.28	90	339
340	Zanesville silt loam	UNF	112	38	47	55	0	0.00	3.50	94	340
341	Ambraw silty clay loam, sandy substratum	FAV	139	45	54	68	0	0.00	4.29	114	341
342	Matherton silt loam	FAV	139	45	57	70	0	0.00	4.29	114	342
343	Kane silt loam	FAV	152	49	61	78	0	0.00	4.41	125	343
344	Harvard silt loam	FAV	154	48	60	79	0	4.97	0.00	125	344
345	Elvers silt loam	FAV	145	46	55	71	0	0.00	3.84	118	345
346	Dowagiac silt loam	FAV	137	45	57	69	0	3.50	0.00	112	346
347	Canisteo silt loam	FAV	152	49	60	73	0	0.00	4.75	125	347
348	Wingate silt loam	FAV	149	46	61	82	0	4.86	0.00	121	348
349	Zumbro sandy loam	FAV	120*	40*	49*	59	0	2.83	0.00	98*	349
350	Drummer silty clay loam, gravelly substratum	FAV	168	55	63	87	0	0.00	4.75	138	350
351	Elburn silt loam, gravelly substratum	FAV	169	52	60	89	0	0.00	4.97	136	351

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
352	Palms silty clay loam, overwash	FAV	156	49	0	0	0	0.00	0.00	126	352
353	Toronto silt loam	FAV	156	50	62	84	0	0.00	4.75	128	353
354	Hononegah loamy coarse sand	FAV	103*	33*	42*	51	0	0.00	3.16	84*	354
355	Binghampton sandy loam	FAV	128	40	53	68	0	0.00	4.29	105	355
356	Elpaso silty clay loam	FAV	176	57	60	92	0	0.00	5.20	144	356
357	Vanpetten loam	FAV	132	41	55	72	0	3.50	0.00	107	357
359	Fayette silt loam, till substratum	FAV	148	45	58	72	0	4.29	0.00	119	359
360	Slacwater silt loam	FAV	142	43	54	67	0	0.00	4.18	113	360
361	Kidder silt loam	FAV	124	41	51	58	0	3.16	0.00	102	361
362	Whitaker variant loam	FAV	144	47	58	71	0	0.00	4.41	118	362
363	Griswold loam	FAV	141	47	58	69	0	4.29	0.00	117	363
365	Aptakisc silt loam	FAV	140	45	54	71	0	0.00	4.41	115	365
366	Alganssee fine sandy loam	FAV	114*	37*	47*	55	0	0.00	3.39	94*	366
367	Beach sand	Crop yield data not available									
368	Raveenwash silty clay loam	FAV	133	42	50	60	0	3.39	0.00	107	368
369	Waupecan silt loam	FAV	170	53	67	92	0	6.22	0.00	139	369
370	Saylesville silt loam	FAV	128	43	53	62	0	3.62	0.00	106	370
371	St. Charles silt loam, sandy substratum	FAV	140	44	55	70	0	3.62	0.00	113	371
372	Kendall silt loam, sandy substratum	FAV	144	45	57	72	0	0.00	4.41	117	372
373	Camden silt loam, sandy substratum	FAV	135	43	52	67	0	3.05	0.00	109	373
374	Proctor silt loam, sandy substratum	FAV	149	48	59	79	0	4.29	0.00	122	374
375	Rutland silt loam	FAV	162	52	64	87	0	0.00	4.97	133	375
376	Cisne silt loam, bench	FAV	135	41	53	0	102	0.00	4.18	109	376
377	Hoyleton silt loam, bench	FAV	132	42	52	0	103	0.00	4.18	108	377
378	Lanier fine sandy loam	FAV	98*	33*	36*	42	0	0.00	3.16	81*	378
379	Dakota silt loam	FAV	135	45	55	67	0	3.96	0.00	112	379
380	Fieldon silt loam	FAV	136	46	54	71	0	0.00	4.52	114	380
381	Craigmile sandy loam	FAV	138	47	54	67	0	0.00	4.07	115	381
382	Belknap silt loam	FAV	141	47	57	68	0	0.00	4.41	117	382
383	Newvienna silt loam	FAV	166	52	63	87	0	0.00	4.86	134	383
384	Edwardsville silt loam	FAV	175	54	68	0	123	0.00	5.20	141	384
385	Mascoutah silty clay loam	FAV	175	55	64	0	122	0.00	5.20	141	385
386	Downs silt loam	FAV	165	52	63	87	0	5.76	0.00	134	386
387	Ockley silt loam	FAV	140	45	55	71	0	4.86	0.00	115	387
388	Wenona silt loam	FAV	156	51	61	82	0	4.97	0.00	129	388
389	Hesch loamy sand, shallow variant	UNF	66	24	29	33	0	0.00	1.81	56	389
390	Hesch fine sandy loam	UNF	121	41	50	59	0	2.60	0.00	100	390

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
391	Blake silty clay loam	FAV	146	44	54	72	0	0.00	4.29	116	391
392	Urban land, loamy Orthents complex	Crop yield data not available									392
393	Marseilles silt loam, gravelly substratum	UNF	126	45	50	63	0	0.00	3.84	108	393
394	Haynie silt loam	FAV	147	47	54	72	0	3.50	0.00	118	394
395	Ceresco loam	FAV	140	48	57	68	0	0.00	4.29	118	395
396	Vesser silt loam	FAV	151	48	58	76	0	0.00	4.63	123	396
397	Boone loamy fine sand	UNF	81*	28*	37*	44	0	0.00	2.71	69*	397
398	Wea silt loam	FAV	159	50	62	84	0	5.76	0.00	130	398
400	Calco silty clay loam	FAV	167	54	62	81	0	0.00	4.97	137	400
401	Okaw silty clay loam	FAV	107	34	41	0	93	0.00	3.39	88	401
402	Colo silty clay loam	FAV	169	54	63	84	0	0.00	4.97	138	402
403	Elizabeth silt loam	UNF	71	25	29	34	0	0.00	2.49	61	403
404	Titus silty clay loam	FAV	143	47	55	68	0	0.00	4.41	118	404
405	Zook silty clay	FAV	137	47	54	69	0	0.00	4.29	116	405
406	Paxico silt loam	FAV	150	46	57	77	0	0.00	4.29	120	406
407	Udifulvents, loamy	Crop yield data not available									407
408	Aquents, loamy	Crop yield data not available									408
409	Aquents, clayey	Crop yield data not available									409
410	Woodbine silt loam	FAV	119	39	51	61	0	3.16	0.00	98	410
411	Ashdale silt loam	FAV	153	48	61	84	0	4.75	0.00	125	411
412	Ogle silt loam	FAV	159	51	63	86	0	5.31	0.00	131	412
413	Gale silt loam	FAV	121	40	49	62	0	0.00	3.62	100	413
414	Myrtle silt loam	FAV	153	49	59	78	0	4.29	0.00	125	414
415	Orion silt loam	FAV	162	51	60	80	0	0.00	4.52	131	415
416	Durand silt loam	FAV	152	51	61	79	0	4.86	0.00	127	416
417	Derinda silt loam	UNF	115	38	46	57	0	0.00	3.39	95	417
418	Schapville silt loam	UNF	127	44	52	66	0	2.94	0.00	106	418
419	Flagg silt loam	FAV	146	47	57	75	0	4.52	0.00	119	419
420	Piopolis silty clay loam	FAV	128	44	53	61	0	0.00	3.96	108	420
421	Kell silt loam	FAV	112	37	43	0	88	0.00	3.50	93	421
422	Cape silty clay loam	FAV	123	42	52	58	0	0.00	3.84	103	422
423	Millstadt silt loam	FAV	140	41	50	0	104	0.00	4.52	110	423
424	Shoals silt loam	FAV	157	49	62	79	0	0.00	4.75	127	424
425	Muskingum stony silt loam	UNF	79	29	33	36	0	0.00	2.37	69	425
426	Karnak silty clay	FAV	121	41	47	53	0	0.00	3.62	101	426
427	Burnside silt loam	FAV	116	39	46	54	0	2.83	0.00	96	427
428	Coffeen silt loam	FAV	163	52	61	81	0	0.00	4.86	132	428
429	Palsgrove silt loam	FAV	127	41	53	66	0	3.73	0.00	105	429
430	Raddle silt loam	FAV	170	53	66	87	0	5.88	0.00	138	430
431	Genesee silt loam	FAV	154	48	59	72	0	4.86	0.00	125	431
432	Geff silt loam	FAV	136	42	51	0	104	0.00	4.41	110	432
433	Floraville silt loam	FAV	125	38	50	0	99	0.00	4.07	102	433
434	Ridgway silt loam	FAV	148	45	55	0	107	4.07	0.00	117	434

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
435	Streator silty clay loam	FAV	160	52	62	82	0	0.00	4.63	131	435
436	Meadowbank silt loam	FAV	171	52	64	0	118	5.65	0.00	137	436
437	Redbud silt loam	FAV	140	44	57	0	104	4.18	0.00	114	437
438	Aviston silt loam	FAV	167	52	64	0	119	5.88	0.00	137	438
439	Jasper silt loam, sandy substratum	FAV	142	46	58	75	0	4.18	0.00	117	439
440	Jasper silt loam	FAV	158	51	64	85	0	5.20	0.00	130	440
441	Wakenda silt loam	FAV	168	53	66	0	120	5.99	0.00	139	441
442	Mundelein silt loam	FAV	169	54	67	89	0	0.00	4.86	138	442
443	Barrington silt loam	FAV	158	51	62	85	0	5.31	0.00	130	443
445	Newhaven loam	FAV	155	47	61	0	113	0.00	4.75	125	445
446	Springerton loam	FAV	162	51	63	0	118	0.00	4.86	132	446
447	Canisteo silt loam, sandy substratum	FAV	144	47	57	69	0	0.00	4.29	119	447
448	Mona silt loam	FAV	146	46	57	75	0	3.84	0.00	118	448
450	Brouillett silt loam	FAV	162	53	63	81	0	0.00	4.97	133	450
451	Lawson silt loam	FAV	171	55	66	87	0	0.00	5.20	140	451
452	Riley silty clay loam	FAV	155	50	60	78	0	0.00	4.52	127	452
453	Muren silt loam	FAV	147	45	55	0	108	4.63	0.00	119	453
454	Iva silt loam	FAV	155	47	58	0	112	0.00	4.75	124	454
455	Mixed alluvial land	Crop yield data not available									
456	Ware silt loam	FAV	143	46	57	70	0	4.63	0.00	118	456
457	Booker silty clay	FAV	105	37	40	43	0	0.00	3.50	89	457
458	Fayette silt loam, sandy substratum	FAV	145	46	58	78	0	3.84	0.00	118	458
459	Tama silt loam, sandy substratum	FAV	165	52	63	82	0	5.76	0.00	135	459
460	Ginat silt loam	FAV	128	44	53	61	0	0.00	3.96	108	460
461	Weinbach silt loam	FAV	126	42	53	61	0	0.00	4.18	105	461
462	Sciotoville silt loam	FAV	126	42	53	63	0	3.62	0.00	105	462
463	Wheeling silt loam	FAV	132	43	53	64	0	3.39	0.00	108	463
464	Walkkill silty clay loam	FAV	133	44	53	64	0	0.00	3.73	110	464
465	Montgomery silty clay loam	FAV	133	44	52	61	0	0.00	4.07	110	465
466	Bartelso silt loam	FAV	158	49	58	0	108	0.00	4.41	127	466
467	Markland silt loam	UNF	126	42	53	63	0	0.00	3.73	105	467
468	Lakaskia silt loam	FAV	152	47	55	0	107	0.00	4.29	121	468
469	Emma silty clay loam	FAV	134	44	53	64	0	4.07	0.00	110	469
470	Keller silt loam	UNF	137	46	55	59	0	0.00	4.18	114	470
471	Clarksville cherty silt loam	UNF	70	26	27	31	0	0.00	2.60	61	471
472	Baylis silt loam	FAV	134	43	53	70	0	2.83	0.00	108	472
473	Roszburg loam	FAV	160	52	63	80	0	5.20	0.00	132	473
474	Piasa silt loam	UNF	122	43	47	60	0	0.00	3.62	104	474
475	Elsah cherty silt loam	FAV	132	44	51	61	0	3.73	0.00	110	475
476	Biddle silt loam	UNF	141	46	57	68	0	0.00	4.41	116	476
477	Winfield silt loam	FAV	146	45	57	0	111	4.52	0.00	119	477

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
479	Aurelius muck, sandy substratum	FAV	122	43	0	0	0	0.00	0.00	104	479
480	Moundprairie silty clay loam	FAV	146	45	55	71	0	0.00	4.18	117	480
481	Raub silt loam	FAV	165*	52*	66	92	0	0.00	5.09	134*	481
482	Uniontown silt loam	FAV	145	46	55	68	0	4.29	0.00	117	482
483	Henshaw silt loam	FAV	144	45	54	0	105	0.00	4.41	117	483
484	Harco silt loam	FAV	171	55	67	87	0	0.00	5.09	140	484
485	Richwood silt loam	FAV	168	52	64	92	0	5.88	0.00	136	485
486	Bertrand silt loam	FAV	141	45	55	73	0	3.50	0.00	114	486
487	Joyce silt loam	FAV	162	51	63	86	0	0.00	4.97	132	487
488	Hooppole loam	FAV	147	48	58	70	0	0.00	4.52	121	488
489	Hurst silt loam, sandy substratum	UNF	113	38	41	0	87	0.00	3.50	94	489
490	Odell silt loam	FAV	158	51	61	81	0	0.00	4.63	129	490
491	Ruma silt loam	FAV	146	44	54	0	110	4.41	0.00	116	491
492	Normandy silt loam	FAV	151	48	60	75	0	0.00	4.52	124	492
493	Bonfield silt loam	FAV	148	49	58	75	0	0.00	4.29	122	493
494	Kankakee fine sandy loam	FAV	138	46	58	69	0	4.52	0.00	115	494
495	Corwin silt loam	FAV	147	48	60	73	0	5.20	0.00	122	495
496	Fincastle silt loam	FAV	150	47	59	77	0	0.00	4.52	121	496
499	Fella silty clay loam	FAV	165	53	62	84	0	0.00	4.86	135	499
501	Morocco fine sand	FAV	101*	35*	45*	53	0	0.00	3.96	87*	501
503	Rockton loam	FAV	121	41	53	68	0	3.50	0.00	101	503
504	Sogn silt loam	UNF	73	24	32	42	0	0.00	2.37	61	504
505	Dunbarton silt loam	UNF	88	30	36	45	0	0.00	2.83	74	505
506	Hitt silt loam	FAV	142	47	57	75	0	4.18	0.00	118	506
508	Selma loam, bedrock substratum	FAV	153	50	59	78	0	0.00	4.63	126	508
509	Whalan loam	FAV	111	35	45	59	0	2.71	0.00	90	509
511	Dunbarton silt loam, cherty variant	UNF	70	25	28	32	0	0.00	2.37	60	511
512	Danabrook silt loam	FAV	168	53	66	90	0	5.76	0.00	138	512
513	Granby loamy sand	FAV	125*	45*	54*	61	0	0.00	3.96	108*	513
515	Bunkum silty clay loam	FAV	132	45	51	0	102	3.50	0.00	110	515
516	Faxon clay loam	FAV	139	46	53	73	0	0.00	4.07	115	516
517	Marine silt loam	FAV	130	40	51	0	102	3.05	0.00	104	517
518	Rend silt loam	FAV	141	44	54	0	104	4.07	0.00	114	518
523	Dunham silty clay loam	FAV	160	52	62	81	0	0.00	4.75	132	523
524	Zipp silty clay loam	FAV	123	42	47	54	0	0.00	3.84	103	524
526	Grundelein silt loam	FAV	168	55	64	88	0	0.00	4.75	138	526
527	Kidami silt loam	FAV	142	45	53	69	0	4.07	0.00	115	527
528	Lahoguess loam	FAV	153	50	59	79	0	0.00	4.63	126	528
529	Selmass loam	FAV	147	48	58	76	0	0.00	4.63	121	529
530	Ozaukee silt loam	FAV	135	42	54	72	0	3.39	0.00	109	530



**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
531	Markham silt loam	FAV	140	45	55	71	0	3.73	0.00	114	531
533	Urban land	Crop yield data not available									533
534	Urban land, clayey Orthents complex	Crop yield data not available									534
535	Orthents, stony	Crop yield data not available									535
536	Dumps, mine	Crop yield data not available									536
537	Hesch fine sandy loam, gray subsoil variant	UNF	135	44	55	68	0	0.00	4.18	112	537
538	Emery silt loam	FAV	156	49	59	78	0	0.00	4.52	126	538
539	Wenona silt loam, loamy substratum	FAV	159	52	62	84	0	5.31	0.00	131	539
540	Frankville silt loam	FAV	119	38	49	66	0	3.05	0.00	97	540
541	Graymont silt loam	FAV	165	52	64	85	0	5.42	0.00	134	541
542	Rooks silt loam	FAV	172	53	64	88	0	0.00	4.97	138	542
543	Piscasaw silt loam	FAV	152	47	58	78	0	4.18	0.00	122	543
544	Torox silt loam	FAV	152	48	57	78	0	0.00	4.41	123	544
545	Windere silt loam	FAV	156	49	60	81	0	4.63	0.00	126	545
546	Keltner silt loam	FAV	144	47	55	75	0	3.84	0.00	117	546
547	Eleroy silt loam	FAV	129	42	47	63	0	3.05	0.00	105	547
548	Marseilles silt loam, moderately wet	UNF	130	42	52	68	0	3.28	0.00	107	548
549	Marseilles silt loam	UNF	129	43	52	68	0	3.28	0.00	107	549
551	Gosport silt loam	UNF	101	35	42	51	0	0.00	3.16	85	551
552	Drummer silty clay loam, till substratum	FAV	167	53	62	87	0	0.00	4.86	136	552
553	Bryce-Calamine variant complex	FAV	140	47	56	70	0	0.00	4.20	117	553
554	Kernan silt loam	FAV	138	45	55	70	0	0.00	4.18	113	554
555	Shadeland silt loam	FAV	116	38	50	63	0	0.00	3.84	96	555
556	High Gap loam	UNF	113	39	49	62	0	2.49	0.00	95	556
557	Millstream silt loam	FAV	161	51	62	84	0	0.00	4.63	130	557
558	Breeds silty clay loam	FAV	143	47	57	73	0	4.29	0.00	118	558
559	Lindley loam	FAV	112	38	44	50	0	0.00	3.50	93	559
560	St. Clair silt loam	UNF	111	38	49	52	0	0.00	3.62	94	560
561	Whalan and NewGlarus silt loams	FAV	118	38	47	61	0	0.00	2.98	96	561
562	Port Byron silt loam, sandy substratum	FAV	160	51	62	80	0	4.86	0.00	130	562
563	Seaton silt loam, sandy substratum	FAV	141	45	55	70	0	3.16	0.00	114	563
564	Waukegan silt loam	FAV	146	47	57	73	0	3.96	0.00	119	564
565	Tell silt loam	FAV	137	45	54	69	0	3.50	0.00	112	565
566	Rockton and Dodgeville soils	FAV	122	42	54	66	0	3.55	0.00	103	566
567	Elkhart silt loam	FAV	154	49	59	73	0	4.75	0.00	125	567
568	Niota silty clay loam, clayey subsurface variant	FAV	104	36	44	47	0	0.00	3.39	88	568

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
569	Medary silty clay loam	FAV	102	35	43	46	0	0.00	3.50	86	569
570	Martinsville silt loam	FAV	140	44	57	68	0	4.07	0.00	114	570
571	Whitaker silt loam	FAV	147	46	55	0	111	0.00	4.52	120	571
572	Loran silt loam	FAV	147	48	58	76	0	0.00	4.41	121	572
573	Tuscola loam	FAV	122	42	52	59	0	3.50	0.00	102	573
574	Ogle silt loam, silt loam subsoil variant	FAV	140	46	57	75	0	3.84	0.00	116	574
575	Joy silt loam, sandy substratum	FAV	164	53	63	84	0	0.00	4.97	134	575
576	Zwingle silt loam	FAV	127	43	52	62	0	0.00	3.84	106	576
577	Terrace escarpment	Crop yield data not available									577
578	Dorchester silt loam, cobbly substratum	FAV	131	40	49	60	0	4.07	0.00	105	578
579	Beavercreek loam	UNF	101	35	37	41	0	0.00	3.05	85	579
580	Fayette silty clay loam, karst	FAV	134	43	54	66	0	3.73	0.00	109	580
581	Tamalco silt loam	UNF	105	39	43	0	89	0.00	3.16	93	581
582	Homen silt loam	FAV	135	43	51	0	103	3.39	0.00	109	582
583	Pike silt loam	FAV	145	44	57	0	107	3.84	0.00	116	583
584	Grantfork silty clay loam	UNF	100	37	37	0	85	0.00	2.94	88	584
585	Negley loam	FAV	122	40	46	0	97	0.00	3.96	102	585
587	Terril loam	FAV	160	51	63	84	0	5.76	0.00	132	587
588	Sparta loamy sand, loamy substratum	FAV	115*	37*	47*	59	0	2.71	0.00	94*	588
589	Bowdre silty clay	FAV	137	43	52	69	0	0.00	4.07	111	589
590	Cairo silty clay	FAV	143	48	55	71	0	0.00	4.29	119	590
591	Fulfs silty clay	FAV	140	45	53	0	106	0.00	4.18	115	591
592	Nameoki silty clay	FAV	147	46	57	0	111	0.00	4.52	120	592
593	Chatauqua silty clay loam	FAV	145	47	60	69	0	4.75	0.00	120	593
594	Reddick silty clay loam	FAV	159	51	60	80	0	0.00	4.63	130	594
595	Coot loam	FAV	133	44	53	67	0	0.00	4.07	110	595
596	Marbletown silt loam	FAV	162	49	61	85	0	5.31	0.00	130	596
597	Armiesburg silty clay loam	FAV	160	51	62	78	0	5.99	0.00	132	597
598	Bedford silt loam	FAV	112	38	47	57	0	0.00	3.28	93	598
599	Baxter cherty silt loam	FAV	96	34	40	43	0	0.00	3.39	82	599
600	Huntington silt loam	FAV	167	54	66	87	0	6.22	0.00	138	600
601	Nolin silty clay loam	FAV	143	46	54	0	108	3.50	0.00	116	601
602	Newark silty clay loam	FAV	121	40	52	0	105	0.00	4.29	104	602
603	Blackoar silt loam	FAV	161	52	60	79	0	0.00	4.86	131	603
604	Sandy alluvial land	Crop yield data not available									604
605	Ursa silt loam	UNF	102	35	42	45	0	0.00	3.39	86	605
606	Goss gravelly silt loam	UNF	76	27	27	31	0	0.00	2.71	65	606
607	Monterey silty clay loam	FAV	157	50	59	76	0	0.00	4.75	128	607
608	Mudhen clay loam	FAV	130	43	51	63	0	0.00	3.84	108	608
609	Crane silt loam	FAV	152	48	60	78	0	0.00	4.75	124	609

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
611	Sepo silty clay loam	FAV	157	50	59	77	0	0.00	4.97	129	611
614	Chenoa silt loam	FAV	156	51	61	82	0	0.00	4.63	129	614
615	Vanmeter silty clay loam	FAV	92	31	36	0	85	0.00	3.16	78	615
618	Senachwine silt loam	FAV	132	43	52	63	0	3.16	0.00	107	618
619	Parkville silty clay	FAV	156	47	57	76	0	0.00	4.52	124	619
620	Darmstadt silt loam	UNF	107	39	40	0	89	0.00	3.28	93	620
621	Coulterville silt loam	UNF	137	43	51	0	96	0.00	3.73	110	621
622	Wyandot silt loam	FAV	145	47	59	71	0	4.75	0.00	120	622
623	Kishwaukee silt loam	FAV	164	52	64	87	0	5.99	0.00	135	623
624	Caprell silt loam	FAV	142	45	54	69	0	3.96	0.00	115	624
625	Geryune silt loam	FAV	167	53	64	89	0	5.76	0.00	137	625
626	Kish loam	FAV	153	48	59	76	0	0.00	4.63	124	626
627	Miami fine sandy loam	FAV	128	41	51	61	0	3.05	0.00	104	627
628	Lax silt loam	FAV	111	36	45	57	0	0.00	3.62	92	628
629	Crider silt loam	FAV	138	45	55	71	0	3.96	0.00	113	629
630	Navlys silty clay loam	FAV	126	41	50	57	0	0.00	4.18	104	630
631	Princeton fine sandy loam	FAV	132	42	51	0	103	3.84	0.00	108	631
632	Copperas silty clay loam	FAV	147	48	57	70	0	0.00	4.63	121	632
633	Traer silt loam	FAV	144	46	57	71	0	0.00	4.18	117	633
634	Blyton silt loam	FAV	154	50	60	75	0	0.00	4.63	126	634
635	Lismod silt loam	FAV	169	54	66	90	0	0.00	4.97	138	635
636	Parmod silt loam	FAV	152	48	59	78	0	5.09	0.00	125	636
637	Muskego silty clay loam, overwash	FAV	156	50	0	0	0	0.00	0.00	128	637
638	Muskego muck	FAV	152	49	0	0	0	0.00	0.00	125	638
639	Wynoose silt loam, bench	FAV	115	36	46	0	94	0.00	3.84	95	639
640	Bluford silt loam, bench	FAV	122	40	50	0	99	3.05	0.00	101	640
641	Quiver silty clay loam	FAV	126	43	49	54	0	0.00	3.73	106	641
647	Lawler loam	FAV	141	47	57	69	0	0.00	4.75	118	647
648	Clyde clay loam	FAV	168	56	69	90	0	0.00	4.97	139	648
649	Nachusa silt loam	FAV	165	55	66	85	0	0.00	4.75	137	649
650	Prairieville silt loam	FAV	159	51	63	86	0	5.76	0.00	131	650
651	Keswick loam	FAV	100	34	37	47	0	0.00	3.16	84	651
652	Passport silt loam	FAV	113	38	50	57	0	0.00	3.73	95	652
656	Octagon silt loam	FAV	143	47	58	70	0	4.52	0.00	118	656
657	Burksville silt loam	FAV	130	43	50	0	101	0.00	3.84	108	657
658	Sonsac very cobbly silt loam	UNF	90	33	36	0	89	0.00	3.16	80	658
660	Coatsburg silt loam	UNF	116	39	46	55	0	0.00	3.50	97	660
661	Atkinson loam	FAV	137	45	55	72	0	4.41	0.00	113	661
662	Barony silt loam	FAV	155	48	60	80	0	4.97	0.00	125	662
663	Clare silt loam	FAV	164	51	63	87	0	5.76	0.00	134	663
665	Stonelick fine sandy loam	FAV	129	39	49	58	0	3.28	0.00	103	665
667	Kaneville silt loam	FAV	161	49	61	85	0	3.84	0.00	128	667
668	Somonauk silt loam	FAV	147	44	57	76	0	0.00	4.63	117	668
669	Saffell gravelly sandy loam	UNF	86	34	36	0	84	0.00	3.05	80	669
670	Aholt silty clay	FAV	110	37	42	45	0	0.00	3.50	92	670

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
671	Biggsville silt loam	FAV	176	55	64	92	0	0.00	5.31	142	671
673	Onarga fine sandy loam, till substratum	FAV	137	43	54	72	0	3.39	0.00	111	673
675	Greenbush silt loam	FAV	166	52	63	87	0	0.00	4.86	134	675
678	Mannon silt loam	FAV	164	51	61	85	0	5.31	0.00	133	678
681	Dubuque-Orthents-Fayette complex	Crop yield data not available									681
682	Medway silty clay loam	FAV	159	51	62	77	0	5.09	0.00	131	682
683	Lawndale silt loam	FAV	178	55	67	97	0	0.00	5.31	144	683
684	Broadwell silt loam	FAV	169	53	66	90	0	6.10	0.00	138	684
685	Middletown silt loam	FAV	146	44	59	76	0	4.18	0.00	117	685
689	Coloma loamy sand*	FAV	92*	29*	41*	47	0	0.00	3.28	76*	689
690	Brookside stony silty clay loam	UNF	112	36	43	0	90	0.00	3.73	93	690
691	Beasley silt loam	FAV	99	35	36	43	0	0.00	3.62	85	691
695	Fosterburg silt loam	FAV	149	49	58	0	113	0.00	4.52	124	695
696	Zurich silt loam	FAV	147	46	54	70	0	3.96	0.00	119	696
697	Wauconda silt loam	FAV	163	51	60	85	0	5.31	0.00	132	697
698	Grays silt loam	FAV	151	49	59	78	0	4.63	0.00	124	698
699	Timewell silt loam	FAV	167*	54*	67*	86*	0	0.00	4.97	138*	699
700	Westmore silt loam	FAV	121	40	49	61	0	2.71	0.00	99	700
706	Boyer sandy loam	FAV	121	40	47	54	0	2.71	0.00	99	706
709	Osceola silt loam	FAV	141	45	55	73	0	3.84	0.00	115	709
718	Marsh	Crop yield data not available									718
723	Reeseville silt loam	FAV	152	49	59	76	0	0.00	4.52	124	723
727	Waukee loam	FAV	133	44	53	67	0	3.62	0.00	109	727
728	Winnebago silt loam	FAV	148	48	60	76	0	4.29	0.00	122	728
731	Nasset silt loam	FAV	137	44	55	73	0	4.07	0.00	113	731
732	Appleriver silt loam	FAV	128	41	52	64	0	0.00	4.07	105	732
740	Darroch silt loam	FAV	159	50	62	82	0	0.00	4.63	129	740
741	Oakville fine sand	FAV	96*	34*	42*	47	0	0.00	3.28	82*	741
742	Dickinson sandy loam, loamy substratum	FAV	133	42	49	68	0	3.62	0.00	108	742
743	Ridott silt loam	FAV	136	44	54	68	0	0.00	4.18	112	743
745	Shullsburg silt loam	UNF	134	46	58	69	0	0.00	4.07	113	745
746	Calamine silt loam	FAV	132	44	53	64	0	0.00	4.07	110	746
750	Skelton fine sandy loam	FAV	130	41	50	0	105	3.50	0.00	105	750
751	Crawleyville fine sandy loam	FAV	129	41	51	0	102	0.00	3.96	107	751
752	Oneco silt loam	FAV	132	44	55	69	0	3.73	0.00	109	752
753	Massbach silt loam	FAV	136	44	54	70	0	3.50	0.00	111	753
755	Lamoille silt loam	FAV	103	34	42	47	0	0.00	3.28	85	755
759	Udolpho loam, sandy substratum	FAV	123	40	47	64	0	0.00	3.73	101	759
760	Marshan loam, sandy substratum	FAV	147	50	59	73	0	0.00	4.18	123	760
761	Eleva sandy loam	UNF	102	35	41	44	0	0.00	3.05	86	761
763	Joslin silt loam	FAV	159	51	64	85	0	5.42	0.00	130	763

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
764	Coyne fine sandy loam	FAV	128	42	53	63	0	3.28	0.00	105	764
765	Trempealeau silt loam	FAV	136	46	54	70	0	3.28	0.00	113	765
767	Prophetstown silt loam	FAV	171	53	63	85	0	0.00	4.75	138	767
768	Backbone loamy sand	FAV	103	35	43	49	0	0.00	3.28	87	768
769	Edmund silt loam	UNF	106	37	50	58	0	2.60	0.00	89	769
770	Udolpho loam	FAV	124	41	50	66	0	0.00	3.73	103	770
771	Hayfield loam	FAV	137	45	53	67	0	0.00	4.29	114	771
772	Marshan loam	FAV	150	50	58	73	0	0.00	4.29	124	772
774	Saude loam	FAV	132	44	50	64	0	3.05	0.00	108	774
776	Comfrey clay loam	FAV	166	55	62	80	0	0.00	4.97	138	776
777	Adrian muck	FAV	132	44	0	0	0	0.00	0.00	110	777
779	Chelsea loamy fine sand	FAV	95*	29*	42*	49	0	0.00	3.28	77*	779
780	Grellton sandy loam	FAV	128	42	53	66	0	3.28	0.00	105	780
781	Friesland sandy loam	FAV	143	47	58	72	0	4.41	0.00	119	781
782	Juneau silt loam	FAV	163	49	61	85	0	5.20	0.00	131	782
783	Flagler sandy loam	FAV	116	39	46	54	0	2.60	0.00	96	783
784	Berks loam	UNF	71	27	29	33	0	0.00	2.26	63	784
785	Lacrescent cobbly silty clay loam	FAV	98	34	35	41	0	0.00	3.39	83	785
786	Frondorf loam	UNF	102	34	40	0	85	0.00	3.39	87	786
787	Banlic silt loam	FAV	128	42	51	61	0	0.00	4.18	106	787
789	Ambraw-Ceresco-Sarpy complex	FAV	131*	44	52	62*	0	0.00	4.23	110*	789
791	Rush silt loam	FAV	159	49	61	82	0	5.54	0.00	129	791
792	Bowes silt loam	FAV	159	50	63	86	0	5.65	0.00	130	792
800	Psamments	Crop yield data not available									800
801	Orthents, silty	Crop yield data not available									801
802	Orthents, loamy	Crop yield data not available									802
803	Orthents	Crop yield data not available									803
804	Orthents, acid	Crop yield data not available									804
805	Orthents, clayey	Crop yield data not available									805
806	Orthents, clayey-skeletal	Crop yield data not available									806
807	Aquents-Orthents complex	Crop yield data not available									807
808	Orthents, sandy-skeletal	Crop yield data not available									808
810	Oil-brine damaged land	Crop yield data not available									810
811	Aquolls	Crop yield data not available									811
812	Typic Hapludalfs	Crop yield data not available									812
815	Udorthents, silty	Crop yield data not available									815
816	Stookey-Timula-Orthents complex	Crop yield data not available									816
819	Hennepin-Vanmeter complex	UNF	101	35	38	0	97	0.00	3.37	86	819
820	Hennepin-Casco complex	UNF	114	39	43	49	0	0.00	3.14	95	820
821	Morristown silt loam	FAV	95	32	36	40	0	0.00	3.28	80	821
823	Schuline silt loam	FAV	120	39	42	0	102	2.94	0.00	97	823
824	Swanwick silt loam	FAV	111	36	41	0	94	0.00	3.62	92	824
825	Lenzburg silt loam, acid substratum	FAV	79	27	31	34	0	0.00	2.71	67	825

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
829	Biggsville-Mannon silt loams	FAV	171	54	63	89	0	0.00	5.31	139	829
844	Ava-Blair complex	UNF	122	40	50	0	97	0.00	3.34	102	844
850	Hickory-Hosmer silt loams	UNF	115	39	47	0	102	0.00	3.21	98	850
851	Alford-Ursa silt loams	UNF	131	41	52	0	107	0.00	4.07	108	851
852	Alford-Wellston silt loams	UNF	133	42	52	0	94	0.00	4.02	108	852
853	Alford-Westmore silt loams	FAV	139	43	55	0	104	3.80	0.00	112	853
855	Timewell and Ipava soils	FAV	169*	55*	68*	88*	0	0.00	5.11	139*	855
856	Stookey and Timula soils	FAV	143	45	53	0	114	3.73	0.00	115	856
857	Strawn-Hennepin loams	UNF	118	41	46	50	0	0.00	3.30	99	857
858	Port Byron-Mt. Carroll-Urban land	Crop yield data not available									858
859	Blair-Ursa silt loams	UNF	115	38	47	0	101	0.00	3.73	98	859
860	Hosmer-Ursa silt loams	UNF	116	38	48	0	101	0.00	3.32	98	860
861	Ursa-Hickory complex	UNF	104	36	43	47	0	0.00	3.30	88	861
862	Pits, sand	Crop yield data not available									862
863	Pits, clay	Crop yield data not available									863
864	Pits, quarries	Crop yield data not available									864
865	Pits, gravel	Crop yield data not available									865
866	Dumps, slurry	Crop yield data not available									866
867	Oil-waste land	Crop yield data not available									867
868	Pits, organic	Crop yield data not available									868
869	Pits, quarries-Orthents complex	Crop yield data not available									869
870	Blake-Beaucoup complex	FAV	151	48	57	76	0	0.00	4.52	123	870
871	Lenzburg silt loam	FAV	108	36	41	44	0	0.00	3.62	90	871
872	Rapatee silty clay loam	FAV	132	45	53	62	0	3.28	0.00	110	872
873	Dunbarton-Dubuque complex	UNF	99	34	41	52	0	0.00	3.14	84	873
874	Dickinson-Hamburg complex	FAV	129	42	50	63	0	0.00	3.41	106	874
875	Lenzlo silty clay loam	FAV	116	38	43	49	0	0.00	3.62	96	875
876	Lenzwheel silty clay loam	FAV	102	34	38	45	0	0.00	3.39	85	876
878	Coulterville-Grantfork silty clay loams	UNF	123	41	45	0	92	0.00	3.41	101	878
880	Coulterville-Darmstadt complex	UNF	125	42	46	0	93	0.00	3.55	104	880
881	Coulterville-Hoyleton-Darmstadt complex	UNF	129	42	49	0	97	0.00	3.77	106	881
882	Oconee-Darmstadt-Coulterville silt loams	UNF	133	43	50	0	100	0.00	4.10	110	882
883	Oconee-Coulterville-Darmstadt silt loams	UNF	137	43	51	0	100	0.00	4.15	111	883
884	Bunkum-Coulterville silty clay loams	UNF	134	44	51	0	99	0.00	3.59	111	884
885	Virden-Fosterburg silt loams	FAV	158	51	62	0	116	0.00	4.66	131	885
886	Ruma-Ursa silty clay loams	UNF	128	40	49	0	107	0.00	4.00	105	886
887	Darmstadt-Grantfork complex	UNF	104	39	39	0	87	0.00	3.14	91	887

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
888	Passport-Grantfork complex	UNF	108	37	45	0	100	0.00	3.41	94	888
889	Bluford-Darmstadt complex	UNF	116	40	46	0	95	0.00	3.14	98	889
890	Ursa-Atlas complex	UNF	104	36	42	47	0	0.00	3.30	88	890
891	Cisne-Piasa complex	UNF	129	42	51	0	108	0.00	3.96	108	891
892	Sawmill-Lawson complex	FAV	170	55	65	87	0	0.00	5.20	139	892
893	Catlin-Saybrook complex	FAV	166	52	64	88	0	5.92	0.00	136	893
894	Herrick-Biddle-Piasa silt loams		148*	49	59	75	0	0.00	4.53	122*	894
895	Fayette-Westville complex	FAV	145	47	58	73	0	4.34	0.00	119	895
896	Wynoose-Huey complex	UNF	108	38	43	0	93	0.00	3.57	94	896
897	Bunkum-Atlas silty clay loams	UNF	122	42	47	0	104	0.00	3.37	104	897
898	Hickory-Sylvan complex	FAV	119	40	48	56	0	0.00	3.62	99	898
899	Raddle-Sparta complex	FAV	145*	46*	58*	73	0	0.00	4.97	120*	899
900	Hickory-Wellston silt loams	UNF	108	37	44	50	0	0.00	3.48	91	900
901	Ipava-Tama complex	FAV	171	56	68	89	0	0.00	5.81	142	901
902	Ipava-Sable complex	FAV	173	57	68	90	0	0.00	5.27	143	902
903	Muskego and Houghton mucks	FAV	155	50	0	0	0	0.00	0.00	127	903
904	Muskego and Peotone soils, ponded	FAV	151	49	0	0	0	0.00	0.00	124	904
905	NewGlarus-Lamoille complex	FAV	119	39	47	57	0	0.00	3.34	98	905
906	Redbud-Hurst silty clay loams	UNF	132	42	54	0	103	0.00	4.00	110	906
907	Redbud-Colp silty clay loams	UNF	132	41	54	0	102	0.00	4.05	109	907
908	Hickory-Kell silt loams	FAV	110	37	44	0	98	0.00	3.57	94	908
909	Coulterville-Oconee silt loams	UNF	142	44	53	0	101	0.00	4.14	114	909
910	Timula-Miami complex	FAV	139	45	54	66	0	3.57	0.00	113	910
911	Timula-Hickory complex	FAV	127	42	49	60	0	0.00	3.48	105	911
912	Hoyleton-Darmstadt complex	UNF	121	41	47	0	97	0.00	3.82	103	912
913	Marseilles-Hickory complex	UNF	121	41	49	61	0	0.00	3.41	101	913
914	Atlas-Grantfork complex	UNF	104	37	40	0	98	0.00	3.07	90	914
915	Elco-Ursa silt loams	UNF	123	40	49	59	0	0.00	3.66	101	915
916	Darmstadt-Oconee silt loams	UNF	123	42	46	0	97	0.00	3.86	104	916
917	Oakville-Tell complex	FAV	113*	38*	46*	56	0	0.00	3.37	95*	917
918	Marseilles-Atlas complex	UNF	120	41	48	60	0	0.00	3.23	100	918
919	Rodman-Fox complex	UNF	113*	38*	44	51	0	0.00	3.23	94*	919
920	Rushville-Huey silt loams	UNF	119	41	49	0	102	0.00	3.77	103	920
921	Faxon-Ripon complex	FAV	138	45	54	75	0	0.00	4.02	114	921
922	Alford-Hurst silty clay loams	UNF	139	43	55	0	106	0.00	4.20	113	922
923	Urban land-Markham-Ashkum complex		Crop yield data not available								923
924	Urban land-Milford-Martinton complex		Crop yield data not available								924
925	Urban land-Frankfort-Bryce complex		Crop yield data not available								925
926	Urban land-Drummer-Barrington complex		Crop yield data not available								926

**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
927	Blair-Atlas silt loams	UNF	117	39	47	0	102	0.00	3.64	99	927
928	NewGlarus-Palsgrove silt loams	FAV	129	41	52	64	0	0.00	3.53	105	928
929	Ava-Hickory complex	UNF	116	39	47	0	99	0.00	3.21	98	929
930	Goss-Alford complex	UNF	106	34	40	0	96	0.00	3.44	88	930
931	Seaton-Goss complex	UNF	120	39	45	58	0	0.00	3.53	98	931
932	Clinton-El Dara complex	FAV	138	44	57	70	0	4.02	0.00	113	932
933	Hickory-Clinton complex	FAV	125	41	50	62	0	0.00	4.07	103	933
934	Blair-Grantfork complex	UNF	115	39	45	0	94	0.00	3.55	98	934
935	Miami-Hennepin complex	UNF	125	41	48	57	0	0.00	3.71	103	935
936	Fayette-Hickory complex	FAV	134	43	54	66	0	0.00	4.29	110	936
937	Seaton-Hickory complex	FAV	133	43	52	66	0	0.00	3.89	109	937
938	Miami-Casco complex	UNF	133	43	52	64	0	3.34	0.00	108	938
939	Rodman-Warsaw complex	UNF	113*	40*	45	54	0	0.00	3.82	98*	939
940	Zanesville-Westmore silt loams	UNF	115	39	48	58	0	0.00	3.19	96	940
941	Virden-Piasa silt loams	UNF	147	49	58	74	0	0.00	4.29	122	941
942	Seaton-Oakville complex	FAV	128*	42*	51*	66*	0	0.00	3.75	105*	942
943	Seaton-Timula silt loams	FAV	146	46	56	72	0	3.80	0.00	118	943
944	Velma-Coatsburg silt loams	UNF	129	43	52	64	0	0.00	3.77	107	944
945	Hickory-High Gap silt loams	UNF	110	38	46	55	0	0.00	3.16	93	945
946	Hickory-Atlas complex	UNF	108	37	43	50	0	0.00	3.44	91	946
947	Lamont, Tell, and Bloomfield soils	FAV	121*	40*	50	62	0	0.00	3.22	99*	947
948	Fayette-Clarksville complex	UNF	118	39	47	58	0	0.00	3.89	98	948
949	Eleroy and Derinda soils	UNF	123	40	47	61	0	0.00	3.19	101	949
950	Dubuque and Palsgrove soils	UNF	121	39	50	64	0	0.00	3.66	100	950
951	Palsgrove and Woodbine soils	FAV	124	40	52	64	0	3.50	0.00	101	951
952	Tell-Lamont complex	FAV	130	43	52	66	0	3.28	0.00	107	952
953	Hosmer-Lax silt loams	UNF	120	39	49	0	99	0.00	3.41	100	953
954	Alford-Baxter complex	FAV	129	41	51	0	103	0.00	4.07	106	954
955	Muskingum and Berks soils	UNF	76	28	31	35	0	0.00	2.33	66	955
956	Brandon and Saffell soils	UNF	108	39	43	0	90	0.00	3.12	94	956
957	Elco-Atlas silt loams	UNF	125	41	49	60	0	0.00	3.57	103	957
958	Hickory and Hennepin soils	UNF	108	37	42	47	0	0.00	3.57	91	958
959	Strawn-Chute complex	FAV	111*	37*	44*	49	0	0.00	3.12	93*	959
960	Hickory-Sylvan-Fayette silt loams	FAV	125	41	50	60	0	0.00	3.84	104	960
961	Burkhardt-Saude complex	FAV	116*	35*	45*	55	0	0.00	3.53	93*	961
962	Sylvan-Bold complex	FAV	137	43	53	64	0	0.00	3.75	110	962
963	Hickory and Sylvan soils	FAV	119	40	48	56	0	0.00	3.62	99	963
964	Hennepin and Miami soils	UNF	119	40	45	52	0	0.00	3.64	99	964
965	Tallula-Bold silt loams	FAV	154	46	57	75	0	0.00	4.29	122	965
966	Miami-Russell silt loams	FAV	141	45	55	70	0	3.93	0.00	114	966
967	Hickory-Gosport complex	UNF	106	36	43	51	0	0.00	3.44	89	967
968	Birkbeck-Miami silt loams	FAV	145	46	58	75	0	4.32	0.00	118	968



**Table S2. Productivity of Illinois Soils Under Optimum Management, Slightly Eroded, 0% to 2% Slopes**

IL map symbol	Soil type name	Subsoil rooting <sup>a</sup>	Corn bu/ac	Soybeans bu/ac	Wheat bu/ac	Oats <sup>b</sup> bu/ac	Sorghum <sup>c</sup> bu/ac	Alfalfa <sup>d</sup> hay ton/ac	Grass-legume <sup>e</sup> hay ton/ac	Crop productivity index for optimum management	IL map symbol
969	Rodman-Casco complex	UNF	110*	37*	42	47*	0	0.00	3.01	92*	969
970	Keller-Coatsburg complex	UNF	129	43	52	57	0	0.00	3.91	107	970
971	Fishhook-Atlas complex	UNF	114	38	45	53	0	0.00	3.37	94	971
972	Casco-Fox complex	UNF	129	42	51	61	0	2.83	0.00	105	972
973	Dubuque and Dunbarton soils	UNF	105	35	44	55	0	0.00	3.30	88	973
974	Dickinson-Onarga complex	FAV	130	42	53	68	0	3.32	0.00	106	974
975	Alvin-Lamont complex	FAV	128	42	51	64	0	3.21	0.00	105	975
976	Neotoma-Rock outcrop complex		Crop yield data not available								976
977	Neotoma-Wellston complex	UNF	97	34	39	44	0	0.00	3.68	83	977
978	Wauconda and Beecher silt loams	FAV	152	49	58	79	0	0.00	4.86	125	978
979	Grays and Markham silt loams	FAV	147	47	57	75	0	4.27	0.00	120	979
980	Zurich and Morley silt loams	FAV	138	45	53	66	0	3.59	0.00	113	980
981	Wauconda and Frankfort silt loams	UNF	146	47	57	73	0	0.00	4.63	119	981
982	Aptakisic and Nappanee silt loams	UNF	126	42	49	60	0	0.00	4.09	104	982
983	Zurich and Nappanee silt loams	UNF	130	42	49	60	0	0.00	3.82	106	983
984	Barrington and Varna silt loams	FAV	152	49	60	79	0	4.95	0.00	125	984
985	Alford-Bold complex	FAV	146	43	56	0	121	0.00	4.29	116	985
986	Wellston-Berks complex	UNF	93	33	38	43	0	0.00	2.87	79	986
987	Atlas-Grantfork variant complex	UNF	99	36	39	0	96	0.00	3.16	87	987
988	Westmore-Neotoma complex	UNF	109	37	44	53	0	0.00	3.21	91	988
989	Mundelein and Elliott soils	FAV	165	52	64	85	0	0.00	4.72	134	989
990	Stokey-Bodine complex	UNF	119	40	49	0	97	0.00	3.59	102	990
991	Cisne-Huey complex	UNF	120	40	47	0	95	0.00	3.77	102	991
992	Hoyleton-Tamalco complex	UNF	121	40	48	0	97	0.00	3.77	102	992
993	Cowden-Piasa complex	UNF	134	44	53	0	111	0.00	4.09	112	993
994	Oconee-Tamalco complex	UNF	131	42	51	0	100	0.00	4.11	109	994
995	Herrick-Piasa complex	UNF	147	49	59*	75	0	0.00	4.43	121*	995
996	Velma-Walshville complex	UNF	123	42	50	0	99	0.00	3.59	105	996
997	Hickory-Hennepin complex	UNF	108	37	42	47	0	0.00	3.57	91	997
998	Hickory-Negley complex	FAV	114	38	45	0	101	0.00	3.75	97	998
999	Alford-Hickory complex	FAV	134	42	53	0	107	0.00	4.16	110	999

\*Values were revised to reflect current conditions.

<sup>a</sup>UNF = unfavorable; FAV = favorable

<sup>b</sup>Soils in the southern region were not rated for oats and are shown with a zero, 0.

<sup>c</sup>Soils in the northern region or in both the northern and southern regions were not rated for grain sorghum and are shown with a zero, 0.

<sup>d</sup>Soils in the poorly drained group were not rated for alfalfa and are shown with zeros, 0.00.

10-year corn yields were from 6 bu/ac to 21 bu/ac greater than average 10-year corn yields depending on soil type and the response of that soil to optimum management. The standard deviation presented for most soils was approximately a 13% increase from the 10-year crop yields under an average level of management (Olson et al., 2000). This approach was also used for the other crops to convert the crop yield estimates from an average level of management to an optimum level of management. It should be noted that crop yield data from three or four sources were used to develop the crop yield estimates by soil type under average management and only limited data exist to support the crop yield estimates under an optimum level of management.

Optimum crop yield estimates are based on some statistical assumptions. We anticipate that two-thirds (67%) of farmers of a soil will obtain 10-year crop yield averages within 1 SD of the mean value provided in Bulletin 810 (Olson et al., 2000). We expect approximately 16% of farmers of a soil to obtain 10-year crop yields above the mean crop yield of all farmers plus approximately 1 SD for most soils.

A total of 90 soil types (Appendix S1) were selected and checked using 1,800 farmer fields or separate map units (on 14,000 acres) under an optimum level of management. These fields or map units were measured for 3 to 5 years for soybeans and corn. Yields were measured by field with known soil types and recorded using geographical information systems (GIS) or by global positioning systems (GPS) and crop yield monitors on combines. The corn and soybean yields for 90 soil types under optimum management were compared with the corn and soybean yields in Table S2 to check for outliers and validate estimates. For the 90 soil types (Appendix S1), the farmer-field-measured corn yield data under an optimum level of management were within 6 bu/ac of the 10-year crop yields provided in Table S2, and the farmer-field-measured soybean yield data under an optimum level of management were within 2 bu/ac of the 10-year crop yields shown in Table S2, which appears to validate the statistical procedure used to calculate the optimum crop yields from the average crop yields for all farmers.

### **Estimated Ten-Year Average Crop Yields in Illinois Under an Optimum Level of Management**

Estimated 10-year average yields under optimum management for the five major grain crops (corn, soybeans, wheat, grain sorghum, and oats) and hay (alfalfa and legume-grass mixture) in Illinois under dryland conditions are shown in Table S2. If you know the soil name but not the soil number, it can be obtained from the alphabetical list given in Appendix S2. All the soils for which 10-year crop yields are given have been

established as part of the Illinois Cooperative Soil Survey program. Yields are not given for some crops on soils where these crops are not well adapted, including oat yields on soils restricted to southern Illinois. Similarly, grain sorghum yields are not given for northern Illinois soils. Yield ratings for oats, wheat, grain sorghum, and hay for the organic soils were not provided because these soils are seldom used for those crops.

### **Crop Productivity Indices for Illinois Soils Under an Optimum Level of Management**

Soil productivity is strongly influenced by the capacity of a soil to supply the nutrients and soil-stored water needs of a growing crop in a given climate. Productivity also depends in part on the adaptation of a particular crop to specific growing conditions and level of management. It is often necessary to compare soils that differ in suitability for particular crops or in response to management. Estimated crop yields are not suitable for these comparisons because yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management, such as the optimum level (Table S2).

### **Calculation of Productivity Indices for Grain and Hay Crops Under an Optimum Level of Management**

Productivity indices for grain and forage crops grown in Illinois under optimum management are reflected as a single percentage of the average yields obtained under average management for one of the most productive soils in the state (Olson et al., 2000), which is used as the base. This soil type is Muscatine silt loam (no. 51) and was previously identified in Circular 1156 and mapped in many northern and central Illinois counties as Muscatine (no. 41). Under average management, the 10-year average yields used as the base yields to calculate a productivity index (PI) are as follows: corn, 159 bu/ac; soybeans, 51 bu/ac; wheat, 60 bu/ac; oats, 83 bu/ac; and hay, 4.80 hay ton/ac. Muscatine silt loam under an average level of management was assigned an average PI of 130 in Bulletin 810 (Olson et al., 2000). This number was chosen because it represented the highest average PI (basic management PI + high management PI / 2) in Circular 1156, *Soil Productivity in Illinois* (Fehrenbacher et al., 1978). The highest possible basic management level PI was 100, whereas the highest possible high management PI was 160 (Fehrenbacher et al., 1978). Muscatine silt loam under an optimum level of management has an optimum PI of 147, which was calculated using the optimum crop yields shown in Table S2.

Line	Tama silt loam (no. 36) Optimum management Northern and central Illinois Favorable subsoil for rooting				
	Corn	Soybeans	Wheat	Oats	Hay
1. Estimated yield under optimum level of management, bu/ac	169	54	66	88	6.55
2. Base yield (Muscatune under average management), bu/ac	159	51	60	83	4.80
3. Relative yield (line 1/ line 2 × 130)	138	138	143	138	177
4. Fraction of total crop acreage (northern region)	0.52	0.40	0.03	0.01	0.04
5. Weighted relative yield (line 3 × line 4)	72	55	4	1	7
6. Optimum productivity index (sum of line 5 data)	139				

An example of calculating the productivity index for Tama silt loam under optimum management using the crop yields in Table S2 is given above.

Wheat and oats are relatively minor crops in northern and central Illinois, where Tama soils occur. In the 1990s, according to the Illinois Agricultural Statistics Service, corn was grown on 52%, soybeans on 40%, wheat on 3%, oats on 1%, and hay on 4% of the total agricultural crop acreage in northern and central Illinois. In Illinois, crop acreage distributions affect the soil's calculated optimum PI.

Organic soils in the northern region are not normally used for oats, hay, or wheat. Its crop acreage distribution, presumably, for calculating an optimum PI, was 56% corn and 44% soybeans. These soils are assumed to have already been drained and used in crop production. Undrained organic soils would qualify as hydric soils and wetlands and therefore would not be suited for crop use and subject to land-use change restrictions.

These percentages or fractions were used to weight the relative yields of the crops (line 5 above). In southern Illinois, the 1990s crop acreage distribution pattern was as follows: corn, 32%; soybeans, 44%; wheat, 15%; grain sorghum, 3%; and hay, 6%. As used here, the term *southern Illinois* means the 36 southernmost counties of the state, bounded on the north by Madison, Bond, Fayette, Effingham, Cumberland, and Clark counties.

An example of calculating a productivity index at the optimum level of management for Grantsburg silt loam using the crop yields in Table S2 is on page 2.

Productivity indices have no units because they are relative and not absolute measures of productive capacity. The optimum PIs for all the approximately 800 soil types vary from 47 to 147 (Table S2).

### Adjustments in Crop Yields and Productivity Indices

It is necessary to make adjustments in crop yield estimates and productivity indices for conditions other than those used in Table S2 (0% to 2% slopes, slightly eroded). Crop yields, for example, decrease as slope increases and erosion becomes more severe. Some adjustments, such as for flood damage, may be extremely variable and require local knowledge for a reasonable assessment of the situation.

### Adjustments for Increasing Slope and Erosion

The crop yield estimates and productivity indices given in Table S2 are for 0% to 2% slopes and slightly eroded conditions (Fehrenbacher et al., 1978). It should be emphasized that most Illinois soils occur on 0% to 2% slopes. The ranges in slope gradients for all soils in

Line	Grantsburg silt loam (no. 301) Optimum management Southern Illinois Unfavorable subsoil for rooting				
	Corn	Soybeans	Wheat	Sorghum	Hay
1. Estimated yield under optimum level of management, bu/ac	120	41	50	94	2.94
2. Base yield (Muscatune under average management), bu/ac	159	51	60	110	4.80
3. Relative yield (line 1/ line 2 × 130)	98	104	108	111	80
4. Fraction of total crop acreage (southern region)	0.32	0.44	0.15	0.03	0.06
5. Weighted relative yield (line 3 × line 4)	31	46	17	3	5
6. Optimum productivity index (sum of line 5 data)	102				

Illinois are given in the alphabetical index of soils in Appendix S2. The term *slightly eroded* is meant to include a range from no erosion to slight erosion (soil lost is less than 25% of the original A horizon or upper 8 in.). Because yields were estimated and productivity indices were calculated for these conditions on all soils, however, adjustments for slope and erosion are always reductions in the values given in Table S2.

The two erosion classes for which adjustments are suggested here are moderate erosion (lost 25% to 75% of the original A horizon or upper 8 in.) and severe erosion (lost more than 75% of the original A horizon or upper 8 in.). *Moderate erosion* is defined as significant erosion with subsoil materials evident in the plow layer in much of the moderately eroded areas that have been recently plowed. Enough subsoil has been mixed with the surface soil to change the behavior of the plow layer from that occurring in uneroded or slightly eroded areas. *Severe erosion* is defined as extreme erosion, a condition in which all or nearly all of the surface soil (or A horizon) and probably some of the subsoil have been removed. Management problems are usually severe depending on the nature of the exposed subsoil.

Table S3 shows the percentage adjustments for common slope groups and erosion conditions. Adjustments for steeper slopes and greater erosion are given as percentages of yields and productivity indices for 0% to

2% slopes, slightly eroded conditions under an optimum level of management for both favorable (FAV) and unfavorable (UNF) subsoils for rooting. The subsoil ratings for all soils are provided in a column in Table S2. Figure S1 also shows the slope and erosion adjustments for both soils under an optimum level of management with favorable and unfavorable subsoils for rooting. On sloping soils that are subject to erosion, greater reductions for slope and erosion are made on those soils that have unfavorable subsoils for root growth (Fehrenbacher et al., 1978). Unfavorable subsoils or other shallow subsurface layers include those with high clay content, weak soil structure, high gravel (rock fragment) content, dense pans (fragipans), high sodium content, and massive bedrock. The sloping soils with unfavorable subsoils that are subject to erosion are indicated in Table S2 by unfavorable subsoil rooting.

The decimal adjustments given in Table S3 for various slope groups and erosion conditions with favorable or unfavorable subsoils under an optimum level of management are plotted in Figure S1. Table S3 can be used to obtain the decimal adjustments in yields and productivity indices on all soils for any slope group and erosion combination.

For example, to calculate the grain yields and productivity index under an optimum level of management for soil type no. 280, Fayette silt loam; 5% to 10% slopes;

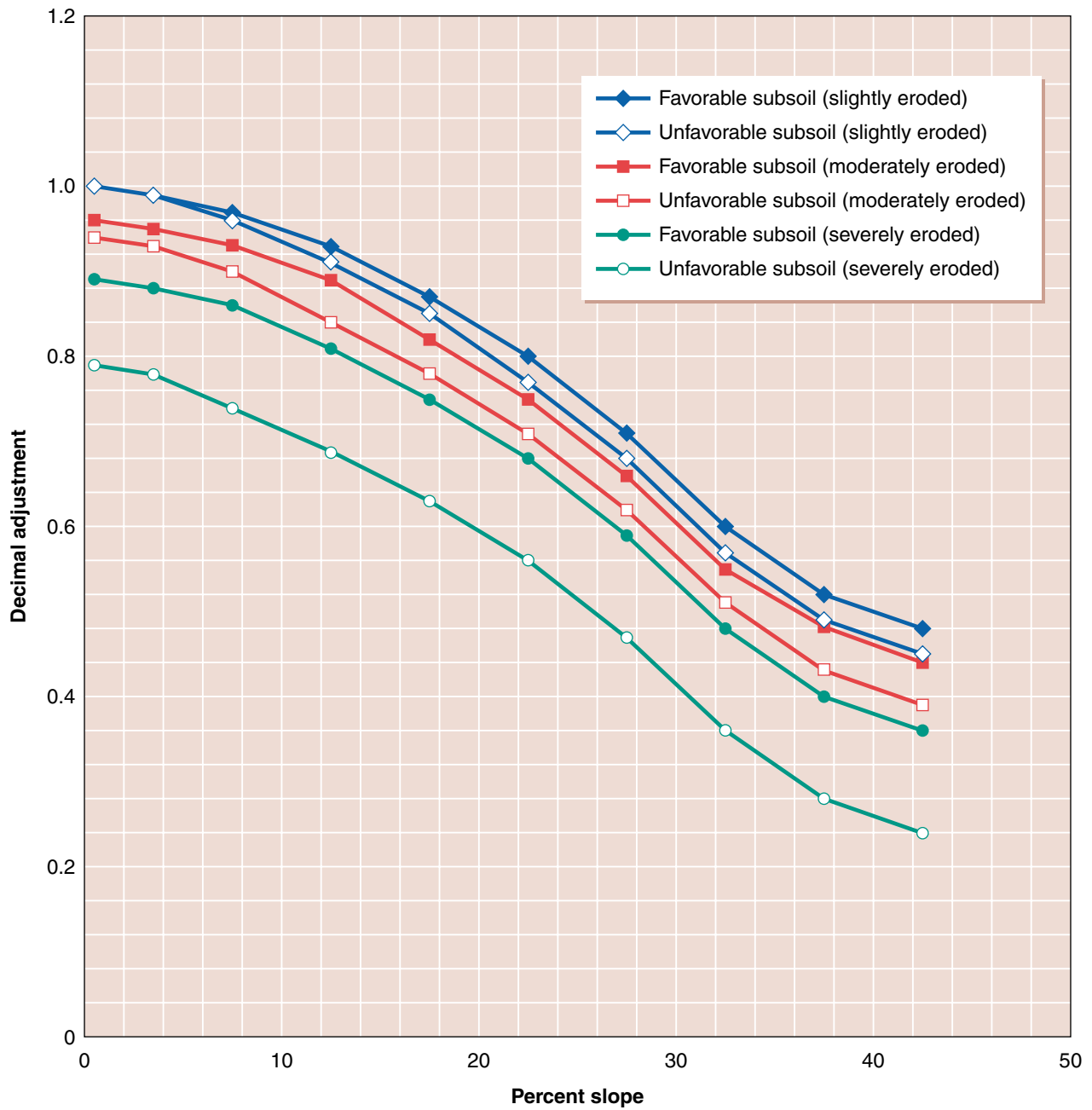


Figure S1. Adjustments in yields and productivity indices for various slope groups and erosion phases with favorable and unfavorable subsoils under an optimum level of management.

**Table S3. Decimal Adjustments in Crop Yields and Productivity Indices Under an Optimum Level of Management for Various Slope Groups and Erosion Phases**

Slope class %	Optimum management Favorable subsoils			Optimum management Unfavorable subsoils		
	Slightly eroded	Moderately eroded	Severely eroded	Slightly eroded	Moderately eroded	Severely eroded
0–2	1.00	0.96	0.89	1.00	0.94	0.79
2–5	0.99	0.95	0.88	0.99	0.93	0.78
5–10	0.97	0.93	0.86	0.96	0.90	0.74
10–15	0.93	0.89	0.81	0.91	0.84	0.69
15–20	0.87	0.82	0.75	0.85	0.78	0.63
20–25	0.80	0.75	0.68	0.77	0.71	0.56
25–30	0.71	0.66	0.59	0.68	0.62	0.47
30–35	0.60	0.55	0.48	0.57	0.51	0.36
35–40	0.52	0.48	0.40	0.49	0.43	0.28
43+	0.48	0.44	0.36	0.45	0.39	0.24

severely eroded, favorable subsoils, obtain the optimum yields for Fayette silt loam (given in Table S2) for 0% to 2% slopes, slightly eroded conditions: 150 bu/ac for corn, 47 bu/ac for soybeans, 60 bu/ac for wheat, 77 bu/ac for oats, and 4.75 ton/ac for hay. The crop-productivity index under optimum management is 122. Place the midpoint of the 5% to 10% slope group, 7 1/2 percent, on the horizontal axis of Figure S1 (optimum management), and follow down to the curved line for severe erosion and favorable subsoil; then follow horizontally to the left, and read on the vertical axis the decimal by which the base yields and productivity index in Table S2 should be multiplied to make the adjustment. In this example, the crop yields and productivity index in Table S2 should be multiplied by a number (0.86) expressed as a decimal to make the adjustment. The optimum yields and productivity index for Fayette silt loam, 5% to 10% slopes, severely eroded, are 129 bu/ac for corn, 40 bu/ac for soybeans, 52 bu/ac for wheat, 66 bu/ac for oats, and 4.08 ton/ac for hay, and the crop-productivity index is 105. Similar adjustments could also have been obtained using the columns in Table S3 for 5% to 10% slopes, severely eroded, with favorable subsoils.

The curves in Figure S1 include adjustments for slopes to 43%. Yields of grain crops are seldom given for slopes greater than about 15% because of the problems of controlling erosion and otherwise obtaining good crop yields on the steeper slopes. The portion of the curves from the 15% to about 43% slope is useful mainly for adjusting productivity indices on steep slopes for land-valuation purposes. The shapes of the curves indicate that yields and productivity indices decrease slowly on gentle slopes up to about 6% to 8% slope, decrease sharply to about 35% slope, and then begin to level off, with little change beyond about 40% slope. In most cases, it is likely that slopes much greater than 43% do not affect productivity indices much differently from those slopes near 43%. For this reason, it is suggested that the decimal

adjustments in Figure S1 for 43% slopes be used for all slope groups having a midpoint (average slope) greater than 43%.

### Relationships Among Soil Prefixes, Soil Numbers, and Soil Names

The soil numbers in Table S2 are listed in numerical sequence from 2 to 999 and are linked to the soil name and associated crop yields. Soil numbers above 1000 are not listed in Table S2, and their crop yields and productivity indices are the same as the similar one- to three-digit soil number. These numbers above 1000 have been used in soil survey reports and were formed by adding a single-digit prefix (0s for spacing) to the soil number of the similar soil name below 1000. The prefixes are used in the following manner and with the meaning as indicated.

Prefix 1	Wet phase	1000–1999
Prefix 2	Urban land-soil complex	2000–2999
Prefix 3	Frequently flooded phase	3000–3999
Prefix 4	Ponded phase	4000–4999
Prefix 5	Karst phase (also mine sinks)	5000–5999
Prefix 6	Variant of series (no longer in use)	6000–6999
Prefix 7	Rarely flooded phase	7000–7999
Prefix 8	Occasionally flooded phase	8000–8999
Prefix 9	Not assigned	9000–9999

An example of how the prefixes are used is as follows: An occasionally flooded phase (prefix 8) of Sawmill silty clay loam (107) would have the symbol 8107 on some of the soil survey maps. The crop, pasture, and timber yields and productivity indices for soil map unit number 8107 (occasionally flooded phase of Sawmill silty clay loam) can be obtained from soil symbol number 107 (Sawmill silty clay loam). The productivity ratings are considered to be the same for both map units.

## Adjustment for Flooding

Estimated yields and productivity indices given in Table S2 for bottomland soils apply to soils that are protected from flooding or a prolonged high water table during the cropping season because of high water in stream valleys. Soils that are subject to flooding are less productive than soils that are protected by levees. The frequency and severity of flooding are often governed by landscape characteristics and management of the watershed in which a soil occurs. For this reason, factors used to adjust productivity indices for flooding must be based on knowledge of the characteristics and history of the specific site. Wide variation in the flooding hazard, sometimes within short distances in a given valley, requires that each situation be assessed locally.

If the history of flooding in a valley is known to have caused 2 years of essentially total crop failures and 2 years of 50% crop losses out of 10 years, for example, the estimated yields and productivity indices of the bottomland soils could be reduced to 70% of those given in Table S2. Estimated crop yields and productivity indices for upland soils subject to crop damage from long-duration ponding have already been reduced accordingly in Table S2.

## Adjustments for Soil Complexes and Soil Associations

A soil complex consists of two or more soils occurring together in a pattern that is too intricate for the individual soils to be delineated on the soil maps at the scale being used. Crop yield estimates and productivity indices of a soil-complex area are averages of the yields and indices of the component soils. For example, Huey silt loam (no. 120), a high-sodium soil, often occurs within some areas of Cisne silt loam (no. 2) in south-central Illinois. These

areas are delineated as a Cisne-Huey complex (no. 991), when the two soils cannot be separated at the scale used in mapping. A weighted productivity index of the complex under an average management level is 102, when the two soils have productivity indices of 109 for Cisne silt loam and 89 for Huey silt loam. If the complex contains three named soils, the soils are weighted 50/30/20, with the first-named soil representing 50%, the second-named soil 30%, and the third-named soil representing 20% of the map unit.

Soil associations are similar to soil complexes in many respects, but they are usually used on general rather than on detailed soil maps. Like soil complexes, soil associations are geographic mixtures of two or more soils. Where the percentages of the various soils are known, crop yield estimates and productivity indices of soil associations are calculated in the same manner as for soil complexes.

## References

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- Odell, R.T., and W.R. Oschwald. 1970. *Productivity of Illinois soils*. University of Illinois at Urbana-Champaign. College of Agriculture. Cooperative Extension Service. Circular 1016. 17 p.
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**Appendix S1. List of Soil Types with Three to Five Years of Measured Corn and Soybean Yields Under an Optimum Level of Management**

IL map symbol	Soil type name	IL map symbol	Soil type name
98	Ade loamy fine sand	60	La Rose silt loam
308	Alford silt loam	304	Landes fine sandy loam
302	Ambraw clay loam	451	Lawson silt loam
78	Arenzville silt loam	81	Littleton silt loam
232	Ashkum silty clay loam	265	Lomax loam
259	Assumption silt loam	549	Marseilles silt loam
7	Atlas silt loam	918	Marseilles-Atlas complex
61	Atterberry silt loam	913	Marseilles-Hickory complex
188	Beardstown loam	682	Medway silty clay loam
70	Beaucoup silty clay loam	27	Miami silt loam
53	Bloomfield fine sand	219	Millbrook silt loam
149	Brenton silt loam	82	Millington loam
171	Catlin silt loam	41	Muscatine silt loam
2	Cisne silt loam	741	Oakville fine sand
257	Clarksdale silt loam	150	Onarga sandy loam
428	Coffeen silt loam	200	Orio sandy loam
776	Comfrey clay loam	415	Orion silt loam
112	Cowden silt loam	100	Palms muck
71	Darwin silty clay	330	Peotone silty clay loam
45	Denny silt loam	54	Plainfield sand
87	Dickinson sandy loam	199	Plano silt loam
266	Disco sandy loam	148	Proctor silt loam
115	Dockery silt loam	430	Raddle silt loam
386	Downs silt loam	74	Radford silt loam
152	Drummer silty clay loam	452	Riley silty clay loam
75	Drury silt loam	93	Rodman gravelly loam
198	Elburn silt loam	279	Rozetta silt loam
119	Elco silt loam	68	Sable silty clay loam
567	Elkhart silt loam	107	Sawmill silty clay loam
146	Elliott silt loam	274	Seaton silt loam
280	Fayette silt loam	943	Seaton-Timula silt loams
6	Fishhook silt loam	125	Selma loam
154	Flanagan silt loam	138	Shiloh silty clay loam
781	Friesland sandy loam	19	Sylvan silt loam
201	Gilford fine sandy loam	962	Sylvan-Bold complex
460	Ginat silt loam	36	Tama silt loam
162	Gorham silty clay loam	206	Thorp silt loam
301	Grantsburg silt loam	284	Tice silty clay loam
8	Hickory loam	404	Titus silty clay loam
946	Hickory-Atlas complex	605	Ursa silt loam
97	Houghton peat	50	Viriden silty clay loam
43	Ipava silt loam	333	Wakeland silt loam
439	Jasper, sandy substratum	290	Warsaw silt loam
17	Keomah silt loam	336	Wilbur silt loam
102	La Hogue loam	37	Worthen silt loam

continued



**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
98	Ade loamy fine sand, 1-12	466	Bartelso silt loam, 0-2
777	Adrian muck, 0-1	105	Batavia silt loam, 0-12
670	Aholt silty clay, 0-2	599	Baxter cherty silt loam, 2-60
308	Alford silt loam, 0-60	472	Baylis silt loam, 8-30
954	Alford-Baxter complex, 0-60	367	Beach sand
985	Alford-Bold complex, 0-75	188	Beardstown loam, 0-4
999	Alford-Hickory complex, 0-70	691	Beasley silt loam, 2-60
922	Alford-Hurst silty clay loams, 0-60	70	Beaucoup silty clay loam, 0-2
851	Alford-Ursa silt loams, 0-60	579	Beavercreek loam, 1-15
852	Alford-Wellston silt loams, 0-60	598	Bedford silt loam, 0-12
853	Alford-Westmore silt loams, 0-70	298	Beecher silt loam, 0-6
366	Algansee fine sandy loam, 0-4	382	Belknap silt loam, 0-4
306	Allison silty clay loam, 0-7	784	Berks loam, 0-80
131	Alvin fine sandy loam, 0-45	486	Bertrand silt loam, 0-35
975	Alvin-Lamont complex, 0-45	90	Bethalto silt loam, 0-5
302	Ambraw clay loam, 0-2	476	Biddle silt loam, 0-2
341	Ambraw silty clay loam, sandy substratum, 0-2	671	Biggsville silt loam, 0-10
789	Ambraw-Ceresco-Sarpy complex, 0-9	829	Biggsville-Mannon silt loams, 0-10
293	Andres silt loam, 0-4	332	Billett sandy loam, 0-20
732	Appleriver silt loam, 2-5	355	Binghampton sandy loam, 0-3
365	Aptakasic silt loam, 0-3	334	Birds silt loam, 0-2
982	Aptakasic and Nappanee silt loams, 0-6	233	Birkbeck silt loam, 0-18
409	Aquents, clayey	856	Birkbeck-Dodge complex, 0-20
408	Aquents, loamy	968	Birkbeck-Miami silt loams, 0-60
807	Aquents-Orthents complex	603	Blackoar silt loam, 0-2
811	Aquolls	5	Blair silt loam, 2-20
78	Arenzville silt loam, 0-5	927	Blair-Atlas silt loams, 2-20
227	Argyle silt loam, 2-18	934	Blair-Grantfork complex, 2-20
597	Armiesburg silty clay loam, 0-2	859	Blair-Ursa silt loams, 2-50
411	Ashdale silt loam, 0-20	391	Blake silty clay loam, 0-2
232	Ashkum silty clay loam, 0-3	870	Blake-Beaucoup complex, 0-2
259	Assumption silt loam, 2-18	53	Bloomfield fine sand, 1-60
661	Atkinson loam, 0-10	23	Blount silt loam, 0-6
7	Atlas silt loam, 2-20	63	Blown-out land
914	Atlas-Grantfork complex, 2-20	13	Bluford silt loam, 0-7
987	Atlas-Grantfork variant complex, 2-12	640	Bluford silt loam, bench, 0-7
61	Atterberry silt loam, 0-6	889	Bluford-Darmstadt complex, 0-10
319	Aurelius muck, 0-2	634	Blyton silt loam, 0-2
479	Aurelius muck, sandy substratum, 0-2	X471	Bodine cherty silt loam, 4-60
14	Ava silt loam, 0-18	35	Bold silt loam, 4-75
844	Ava-Blair complex, 0-20	493	Bonfield silt loam, 0-5
929	Ava-Hickory complex, 0-70	108	Bonnie silt loam, 0-2
438	Aviston silt loam, 2-10	457	Booker silty clay, 0-2
204	Ayr sandy loam, 0-10	397	Boone loamy fine sand, 0-70
768	Backbone loamy sand, 2-18	589	Bowdre silty clay, 0-8
787	Banlic silt loam, 0-3	792	Bowes silt loam, 0-10
662	Barony silt loam, 0-10	706	Boyer sandy loam, 0-50
443	Barrington silt loam, 0-7	X956	Brandon silt loam, 2-50
984	Barrington and Varna silt loams, 0-18	956	Brandon and Saffell soils, 1-60

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
558	Breeds silty clay loam, 0-3	932	Clinton-El Dara complex, 0-60
149	Brenton silt loam, 0-5	648	Clyde clay loam, 0-3
684	Broadwell silt loam, 0-12	660	Coatsburg silt loam, 4-20
136	Brooklyn silt loam, 0-2	428	Coffeen silt loam, 0-2
690	Brookside silty clay loam, 3-60	166	Cohoctah loam, 0-2
690	Brookside silty clay loam, bouldery phase, 3-60	402	Colo silty clay loam, 0-5
450	Brouillett silt loam, 0-2	689	Coloma silt loam, 0-70
235	Bryce silty clay, 0-2	122	Colp silt loam, 0-25
553	Bryce-Calamine variant complex, 0-12	776	Comfrey clay loam, 0-2
515	Bunkum silty clay loam, 2-18	595	Coot loam, 0-3
897	Bunkum-Atlas silty clay loams, 2-20	632	Copperas silty clay loam, 0-2
884	Bunkum-Coulterville silty clay loams, 0-18	495	Corwin silt loam, 0-12
X961	Burkhardt sandy loam, 0-30	621	Coulterville silt loam, 0-10
961	Burkhardt-Saude complex, 1-60	880	Coulterville-Darmstadt complex, 0-10
657	Burksville silt loam, 0-2	878	Coulterville-Grantfork silty clay loams, 0-20
427	Burnside silt loam, 0-4	881	Coulterville-Hoyleton-Darmstadt complex, 0-10
590	Cairo silty clay, 0-4	909	Coulterville-Oconee silt loams, 0-10
746	Calamine silt loam, 0-12	882	Coulterville-Oconee-Darmstadt complex, 0-10
400	Calco silty clay loam, 0-2	112	Cowden silt loam, 0-2
134	Camden silt loam, 0-50	993	Cowden-Piasa complex, 0-2
373	Camden silt loam, sandy substratum, 1-5	764	Coyne fine sandy loam, 0-12
347	Canisteo silt loam, 0-2	381	Craigmile sandy loam, 0-2
447	Canisteo silt loam, sandy substratum, 0-2	609	Crane silt loam, 0-2
422	Cape silty clay loam, 0-1	751	Crawleyville fine sandy loam, 0-2
624	Caprell silt loam, 2-20	337	Creal silt loam, 0-7
286	Carmi sandy loam, 0-10	629	Crider silt loam, 0-30
323	Casco silt loam, 0-70	379	Dakota silt loam, 0-18
972	Casco-Fox complex, 0-70	56	Dana silt loam, 0-12
267	Caseyville silt loam, 0-5	512	Danabrook silt loam, 0-10
171	Catlin silt loam, 0-15	620	Darmstadt silt loam, 0-10
893	Catlin-Saybrook complex, 0-20	887	Darmstadt-Grantfork complex, 0-20
395	Ceresco loam, 0-3	916	Darmstadt-Oconee silt loams, 0-10
315	Channahon silt loam, 1-25	740	Darroch silt loam, 0-3
174	Chaseburg silt loam, 0-15	71	Darwin silty clay, 0-2
241	Chatsworth silt loam, 4-50	192	Del Rey silt loam, 0-7
287	Chauncey silt loam, 0-3	45	Denny silt loam, 0-2
593	Chautauqua silty clay loam, 0-25	262	Denrock silt loam, 0-2
779	Chelsea loamy fine sand, 0-45	417	Derinda silt loam, 4-12
614	Chenoa silt loam, 0-5	87	Dickinson sandy loam, 0-30
282	Chute fine sand, 5-60	742	Dickinson sandy loam, loamy substratum, 0-9
2	Cisne silt loam, 0-2	874	Dickinson-Hamburg complex, 0-90
376	Cisne silt loam, bench, 0-2	974	Dickinson-Onarga complex, 0-30
991	Cisne-Huey complex, 0-2	266	Disco sandy loam, 0-5
891	Cisne-Piasa complex, 0-2	115	Dockery silt loam, 0-5
663	Clare silt loam, 0-5	24	Dodge silt loam, 0-20
147	Clarence silty clay loam, 0-7	40	Dodgeville silt loam, 0-30
257	Clarksdale silt loam, 0-7	239	Dorchester silt loam, 0-5
471	Clarksville cherty silt loam, 1-60	578	Dorchester silt loam, cobbly substratum variant, 0-2
18	Clinton silt loam, 0-25	128	Douglas silt loam, 2-15

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
346	Dowagiac silt loam, 0-12	280	Fayette silt loam, 0-40
386	Downs silt loam, 0-25	458	Fayette silt loam, sandy substratum, 2-25
283	Downsouth silt loam, 2-10	359	Fayette silt loam, till substratum, 10-15
325	Dresden silt loam, 0-30	580	Fayette silty clay loam, karst, 5-15
152	Drummer silty clay loam, 0-2	948	Fayette-Clarksville complex, 0-60
350	Drummer silty clay loam, gravelly substratum, 0-2	936	Fayette-Hickory complex, 0-70
552	Drummer silty clay loam, till substratum, 0-2	895	Fayette-Westville complex, 0-40
75	Drury silt loam, 0-30	499	Fella silty clay loam, 0-2
29	Dubuque silt loam, 2-60	380	Fieldon silt loam, 0-2
973	Dubuque and Dunbarton soils, 2-60	496	Fincastle silt loam, 0-6
950	Dubuque and Palsgrove soils, 2-60	6	Fishhook silt loam, 2-18
681	Dubuque-Orthents-Fayette complex	971	Fishhook-Atlas complex, 2-20
536	Dumps, mine	419	Flagg silt loam, 0-20
866	Dumps, slurry	783	Flagler sandy loam, 0-9
505	Dunbarton silt loam, 2-60	154	Flanagan silt loam, 0-7
511	Dunbarton silt loam, cherty variant, 2-60	433	Floraville silt loam, 0-2
873	Dunbarton-Dubuque complex, 2-60	695	Fosterburg silt loam, 0-2
523	Dunham silty clay loam, 0-2	327	Fox silt loam, 0-35
321	Du Page silt loam, 0-4	320	Frankfort silt loam, 1-12
180	Dupo silt loam, 0-2	540	Frankville silt loam, 0-18
416	Durand silt loam, 1-20	781	Friesland sandy loam, 0-7
48	Ebbert silt loam, 0-2	786	Frondorf loam, 6-60
96	Eden silty clay loam, 2-70	908	Frondorf-Hickory complex, 5-70
272	Edgington silt loam, 0-2	591	Fults silty clay, 0-3
249	Edinburg silty clay loam, 0-2	413	Gale silt loam, 0-60
769	Edmund silt loam, 2-35	432	Geff silt loam, 0-5
312	Edwards muck, 0-6	431	Genesee silt loam, 0-2
384	Edwardsville silt loam, 0-5	625	Geryune silt loam, 0-10
264	El Dara sandy loam, 5-60	201	Gilford fine sandy loam, 0-2
198	Elburn silt loam, 0-5	460	Ginat silt loam, 0-1
351	Elburn silt loam, gravelly substratum, 0-3	162	Gorham silty clay loam, 0-7
119	Elco silt loam, 2-25	551	Gosport silt loam, 5-50
957	Elco-Atlas silt loams, 2-25	606	Goss gravelly silt loam, 2-70
915	Elco-Ursa silt loams, 2-50	930	Goss-Alford complex, 0-70
547	Eleroy silt loam, 2-30	513	Granby loamy sand, 0-3
949	Eleroy and Derinda soils, 2-30	584	Grantfork silty clay loam, 2-20
761	Eleva sandy loam, 1-60	V584	Grantfork variant silt loam, 4-12
403	Elizabeth silt loam, 4-65	301	Grantsburg silt loam, 2-18
567	Elkhart silt loam, 0-18	541	Graymont silt loam, 2-10
146	Elliott silt loam, 0-7	698	Grays silt loam, 0-12
356	Elpaso silty clay loam, 0-2	979	Grays and Markham silt loams, 0-20
475	Elsah cherty silt loam, 0-5	675	Greenbush silt loam, 0-18
345	Elders silt loam, 0-3	780	Grellton sandy loam, 0-20
538	Emery silt loam, 2-10	363	Griswold loam, 0-20
469	Emma silty clay loam, 2-12	526	Grundelein silt loam, 0-2
231	Evansville silt loam, 0-2	30	Hamburg silt loam, 20-90
516	Faxon clay loam, 0-2	484	Harco silt loam, 0-3
921	Faxon-Ripon complex, 0-12	67	Harpster silty clay loam, 0-2
		127	Harrison silt loam, 0-10

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
244	Hartsburg silty clay loam, 0-2	912	Hoyleton-Darmstadt complex, 0-10
344	Harvard silt loam, 0-10	992	Hoyleton-Tamalco complex, 0-7
771	Hayfield loam, 0-3	120	Huey silt loam, 0-2
331	Haymond silt loam, 0-3	600	Huntington silt loam, 0-15
394	Haynie silt loam, 0-5	77	Huntsville silt loam, 0-6
25	Hennepin loam, 10-70	338	Hurst silt loam, 0-15
964	Hennepin and Miami soils, 0-70	489	Hurst silt loam, sandy substratum, 0-6
820	Hennepin-Casco complex, 0-70	307	Iona silt loam, 0-6
819	Hennepin-Vanmeter complex, 5-70	43	Ipava silt loam, 0-5
483	Henshaw silt loam, 0-6	902	Ipava-Sable complex, 0-5
62	Herbert silt loam, 0-3	901	Ipava-Tama complex, 0-20
46	Herrick silt loam, 0-5	454	Iva silt loam, 0-6
894	Herrick-Biddle-Piasa silt loams, 0-5	85	Jacob clay, 0-1
995	Herrick-Piasa complex, 0-5	440	Jasper silt loam, 0-15
390	Hesch fine sandy loam, 0-45	439	Jasper silt loam, sandy substratum, 0-15
537	Hesch fine sandy loam, gray subsoil variant, 0-2	314	Joliet silty clay loam, 0-2
389	Hesch loamy sand, shallow variant, 0-4	763	Joslin silt loam, 0-6
8	Hickory loam, 5-70	275	Joy silt loam, 0-5
958	Hickory and Hennepin soils, 5-70	575	Joy silt loam, sandy substratum, 0-2
963	Hickory and Sylvan soils, 2-70	487	Joyce silt loam, 0-2
946	Hickory-Atlas complex, 2-70	28	Jules silt loam, 0-2
933	Hickory-Clinton complex, 0-70	782	Juneau silt loam, 0-6
908	Hickory-Frondorf complex, 5-70	343	Kane silt loam, 0-3
967	Hickory-Gospport complex, 5-70	667	Kaneville silt loam, 0-10
997	Hickory-Hennepin complex, 5-70	494	Kankakee fine sandy loam, 0-12
945	Hickory-High Gap silt loams, 0-70	426	Karnak silty clay, 0-2
850	Hickory-Hosmer silt loams, 0-70	421	Kell silt loam, 10-60
908	Hickory-Kell silt loams, 5-70	470	Keller silt loam, 2-15
998	Hickory-Negley complex, 2-70	970	Keller-Coatsburg complex, 2-20
898	Hickory-Sylvan complex, 2-70	546	Keltner silt loam, 0-30
960	Hickory-Sylvan-Fayette silt loams, 0-70	242	Kendall silt loam, 0-5
900	Hickory-Wellston silt loams, 0-70	372	Kendall silt loam, sandy substratum, 0-2
556	High Gap loam, 0-60	17	Keomah silt loam, 0-5
506	Hitt silt loam, 1-12	554	Kernan silt loam, 1-5
328	Holly silt loam, 0-1	651	Keswick loam, 2-25
225	Holton silt loam, 0-2	527	Kidami silt loam, 0-20
582	Homen silt loam, 2-10	361	Kidder silt loam, 0-35
326	Homer silt loam, 0-6	626	Kish loam, 0-2
354	Hononegah loamy coarse sand, 0-25	623	Kishwaukee silt loam, 0-6
172	Hoopston sandy loam, 0-5	191	Knight silt loam, 0-2
488	Hoopole loam, 0-2	785	Lacrescent cobbly silty clay loam, 5-70
214	Hosmer silt loam, 0-30	102	La Hogue loam, 0-5
953	Hosmer-Lax silt loams, 0-30	528	Lahoguess loam, 0-2
860	Hosmer-Ursa silt loams, 0-30	468	Lakaskia silt loam, 0-2
103	Houghton muck, 0-2	755	Lamoille silt loam, 15-50
97	Houghton peat, 0-2	175	Lamont fine sandy loam, 0-45
3	Hoyleton silt loam, 0-7	947	Lamont, Tell, and Bloomfield soils, 0-60
377	Hoyleton silt loam, bench, 0-7	304	Landes fine sandy loam, 0-7
		378	Lanier fine sandy loam, 0-2

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
60	La Rose silt loam, 2-18	938	Miami-Casco complex, 0-70
647	Lawler loam, 0-6	935	Miami-Hennepin complex, 0-70
683	Lawndale silt loam, 0-3	966	Miami-Russell silt loams, 0-60
451	Lawson silt loam, 0-3	685	Middletown silt loam, 0-15
628	Lax silt loam, 2-12	69	Milford silty clay loam, 0-2
210	Lena muck, 0-2	219	Millbrook silt loam, 0-5
871	Lenzburg silt loam, 0-70	82	Millington loam, 0-2
825	Lenzburg silt loam, acid substratum, 2-20	317	Millsdale silty clay loam, 0-2
875	Lenzlo silty clay loam, 1-7	423	Millstadt silt loam, 0-5
876	Lenzwheel silty clay loam, 1-60	557	Millstream silt loam, 0-2
94	Limestone rock land	179	Minneiska loam, 0-4
559	Lindley loam, 5-60	455	Mixed alluvial land
59	Lisbon silt loam, 0-4	295	Mokena silt loam, 0-5
635	Lismod silt loam, 0-4	448	Mona silt loam, 0-18
81	Littleton silt loam, 0-5	229	Monee silt loam, 0-2
265	Lomax loam, 0-5	607	Monterey silty clay loam, 0-2
572	Loran silt loam, 0-12	465	Montgomery silty clay loam, 0-1
318	Lorenzo loam, 0-45	57	Montmorenci silt loam, 0-12
678	Mannon silt loam, 0-10	194	Morley silt loam, 1-15
596	Marbletown silt loam, 0-5	501	Morocco fine sand, 0-3
517	Marine silt loam, 0-5	821	Morristown silt loam, 0-70
176	Marissa silt loam, 0-3	480	Moundprairie silty clay loam, 0-1
531	Markham silt loam, 0-20	268	Mt. Carroll silt loam, 0-25
467	Markland silt loam, 12-70	608	Mudhen clay loam, 0-2
549	Marseilles silt loam, 0-60	442	Mundelein silt loam, 0-5
393	Marseilles silt loam, gray subsoil variant, 0-4	989	Mundelein and Elliott soils, 0-7
548	Marseilles silt loam, moderately wet, 0-60	453	Muren silt loam, 0-30
918	Marseilles-Atlas complex, 0-60	41	Muscatine silt loam, 0-5
913	Marseilles-Hickory complex, 0-70	51	Muscature silt loam, 0-5
71	Marsh	638	Muskego muck, 0-2
772	Marshan loam, 0-2	637	Muskego silty clay loam, overwash, 0-2
760	Marshan loam, sandy substratum, 0-2	903	Muskego and Houghton mucks, 0-2
570	Martinsville silt loam, 0-35	904	Muskego and Peotone soils, ponded, 0-2
189	Martinton silt loam, 0-6	425	Muskingum stony silt loam, 2-75
385	Mascoutah silty clay loam, 0-2	955	Muskingum and Berks soils, 0-80
753	Massbach silt loam, 1-15	414	Myrtle silt loam, 2-20
342	Matherton silt loam, 0-6	649	Nachusa silt loam, 0-3
89	Maumee fine sandy loam, 0-2	592	Nameoki silty clay, 0-3
193	Mayville silt loam, 0-15	228	Nappanee silt loam, 0-6
248	McFain silty clay, 0-1	731	Nasset silt loam, 0-18
173	McGary silt loam, 0-2	630	Navlys silty clay loam, 2-18
310	McHenry silt loam, 0-30	585	Negley loam, 2-70
436	Meadowbank silt loam, 0-5	X977	Neotoma stoney silt loam, 6-70
569	Medary silty clay loam, 0-45	976	Neotoma-Rock outcrop complex
682	Medway silty clay loam, 0-3	977	Neotoma-Wellston complex, 0-70
79	Menfro silt loam, 2-60	602	Newark silty clay loam, 0-3
205	Metea sandy loam, 0-25	218	Newberry silt loam, 0-2
627	Miami fine sandy loam, 0-60	X561	NewGlarus silt loam, 2-45
27	Miami silt loam, 0-60	905	NewGlarus-Lamoille complex, 2-50

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
928	NewGlarus-Palsgrove silt loams, 2-45	636	Parmod silt loam, 2-15
445	Newhaven loam, 0-2	64	Parr fine sandy loam, 0-18
261	Niota silt loam, 0-2	221	Parr silt loam, 0-18
568	Niota silty clay loam, clayey subsurface variant, 0-2	652	Passport silt loam, 2-18
601	Nolin silty clay loam, 0-25	888	Passport-Grantfork complex, 2-20
213	Normal silt loam, 0-4	142	Patton silty clay loam, 0-2
492	Normandy silt loam, 0-2	406	Paxico silt loam, 0-2
741	Oakville fine sand, 0-60	21	Pecatonica silt loam, 0-30
917	Oakville-Tell complex, 0-60	153	Pella silty clay loam, 0-3
387	Ockley silt loam, 0-30	182	Peotone mucky silty clay loam, marl substratum, 0-2
113	Oconee silt loam, 0-7	330	Peotone silty clay loam, 0-2
883	Oconee-Coulterville-Darmstadt silt loams, 0-10	288	Petrolia silty clay loam, 0-2
882	Oconee-Darmstadt-Coulterville silt loams, 0-10	474	Piasa silt loam, 0-2
994	Oconee-Tamalco complex, 0-7	31	Pierron silt loam, 0-1
656	Octagon silt loam, 2-20	583	Pike silt loam, 0-18
490	Odell silt loam, 0-6	159	Pillot silt loam, 0-12
412	Ogle silt loam, 2-18	420	Piopolis silty clay loam, 0-2
574	Ogle silt loam, silt loam subsoil variant, 2-18	543	Piscasaw silt loam, 2-4
810	Oil-brine damaged land	863	Pits, clay
867	Oil-waste land	865	Pits, gravel
84	Okaw silt loam, 0-5	868	Pits, organic
401	Okaw silty clay loam, 0-5	864	Pits, quarries
150	Onarga sandy loam, 0-10	869	Pits, quarries-Orthents complex
673	Onarga fine sandy loam, reddish subsoil variant, 0-10	862	Pits, sand
752	Oneco silt loam, 1-12	54	Plainfield sand, 0-70
200	Orio sandy loam, 0-2	199	Plano silt loam, 0-12
415	Orion silt loam, 0-5	240	Plattville silt loam, 1-5
804	Orthents, acid	10	Plumfield silty clay loam, 5-18
805	Orthents, clayey	277	Port Byron silt loam, 0-30
806	Orthents, clayey-skeletal	562	Port Byron silt loam, sandy substratum, 0-15
802	Orthents, loamy	858	Port Byron-Mt. Carroll-Urban land
808	Orthents, sandy-skeletal	650	Prairieville silt loam, 0-5
801	Orthents, silty	631	Princeton fine sandy loam, 0-60
535	Orthents, stony	148	Proctor silt loam, 0-18
803	Orthents	374	Proctor silt loam, sandy substratum, 2-10
709	Osceola silt loam, 0-5	767	Prophetstown silt loam, 0-2
86	Oscos silt loam, 0-10	800	Psamments
76	Otter silt loam, 0-2	641	Quiver silty clay loam, 0-2
530	Ozaukee silt loam, 0-35	109	Racoon silt loam, 0-3
100	Palms muck, 0-6	430	Raddle silt loam, 0-10
352	Palms silty clay loam, overwash, 0-2	899	Raddle-Sparta complex, 0-40
429	Palsgrove silt loam, 2-30	74	Radford silt loam, 0-5
951	Palsgrove and Woodbine soils, 2-30	238	Rantoul silty clay, 0-1
256	Pana silt loam, 4-15	872	Rapatee silty clay loam, 1-15
42	Papineau fine sandy loam, 0-3	481	Raub silt loam, 0-2
15	Parke silt loam, 0-50	368	Raveenwash silt loam, 0-2
619	Parkville silty clay, 0-3	437	Redbud silt loam, 2-18
		907	Redbud-Colp silty clay loams, 0-25

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
906	Redbud-Hurst silty clay loams, 0-18	370	Saylesville silt loam, 0-40
594	Reddick silty clay loam, 0-2	418	Schapville silt loam, 2-30
723	Reesville silt loam, 0-7	823	Schuline silt loam, 0-15
518	Rend silt loam, 0-10	462	Sciotoville silt loam, 0-25
4	Richview silt loam, 1-15	274	Seaton silt loam, 0-60
485	Richwood silt loam, 0-12	563	Seaton silt loam, sandy substratum, 0-18
151	Ridgeville fine sandy loam, 0-5	931	Seaton-Goss complex, 0-70
434	Ridgway silt loam, 0-10	937	Seaton-Hickory complex, 0-70
743	Ridott silt loam, 1-7	942	Seaton-Oakville complex, 0-60
452	Riley silty clay loam, 0-3	943	Seaton-Timula silt loams, 0-60
297	Ringwood silt loam, 0-12	125	Selma loam, 0-2
324	Ripon silt loam, 0-12	508	Selma loam, bedrock substratum, 0-2
311	Ritchey silt loam, 0-12	529	Selmass loam, 0-2
123	Riverwash	618	Senachwine silt loam, 2-60
335	Robbs silt loam, 0-3	611	Sepo silty clay loam, 0-2
184	Roby fine sandy loam, 0-7	208	Sexton silt loam, 0-2
38	Rocher loam, 0-7	555	Shadeland silt loam, 0-6
503	Rockton loam, 0-25	183	Shaffton loam, 0-2
566	Rockton and Dodgeville soils, 0-30	95	Shale rock land
93	Rodman gravelly loam, 2-70	72	Sharon silt loam, 0-4
313	Rodman loam, 0-2	138	Shiloh silty clay loam, 0-2
969	Rodman-Casco complex, 2-70	424	Shoals silt loam, 0-2
919	Rodman-Fox complex, 2-70	745	Shullsburg silt loam, 1-25
939	Rodman-Warsaw complex, 2-70	55	Sidell silt loam, 0-12
316	Romeo silt loam, 0-4	750	Skelton fine sandy loam, 0-2
542	Rooks silt loam, 0-2	360	Slacwater silt loam, 0-2
73	Ross loam, 0-3	504	Sogn silt loam, 0-20
473	Rossburg loam, 0-3	668	Somonauk silt loam, 0-5
230	Rowe silty clay, 0-2	658	Sonsac very cobbly silt loam, 5-70
279	Rozetta silt loam, 0-25	88	Sparta loamy sand, 0-40
178	Ruark fine sandy loam, 0-2	588	Sparta loamy sand, loamy substratum, 0-14
111	Rubio silt loam, 0-2	446	Springerton loam, 0-2
491	Ruma silt loam, 2-35	132	Starks silt loam, 0-5
886	Ruma-Ursa silty clay loams, 2-50	155	Stockland loam, 0-15
791	Rush silt loam, 0-12	665	Stonelick fine sandy loam, 0-2
16	Rushville silt loam, 0-2	216	Stookey silt loam, 10-70
920	Rushville-Huey silt loams, 0-2	856	Stookey and Timula soils, 2-70
322	Russell silt loam, 0-25	990	Stookey-Bodine complex, 4-70
375	Rutland silt loam, 0-7	816	Stookey-Timula-Orthents complex
236	Sabina silt loam, 0-5	164	Stoy silt loam, 0-10
68	Sable silty clay loam, 0-2	224	Strawn silt loam, 2-75
669	Saffell gravelly sandy loam, 1-60	959	Strawn-Chute complex, 2-75
9	Sandstone rock land	857	Strawn-Hennepin loams, 2-75
604	Sandy alluvial land	435	Streator silty clay loam, 0-1
92	Sarpy sand, 0-9	278	Stronghurst silt loam, 0-6
774	Saude loam, 0-9	243	St. Charles silt loam, 0-30
107	Sawmill silty clay loam, 0-3	371	St. Charles silt loam, sandy substratum, 1-5
892	Sawmill-Lawson complex, 0-3	560	St. Clair silt loam, 1-12
145	Saybrook silt loam, 0-20	234	Sunbury silt loam, 0-5

continued

**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

IL map symbol	Soil type name and slope range	IL map symbol	Soil type name and slope range
824	Swanwick silt loam, 0-10	223	Varna silt loam, 1-18
91	Swygert silty clay loam, 0-12	250	Velma loam, 4-20
19	Sylvan silt loam, 2-60	944	Velma-Coatsburg silt loams, 4-20
962	Sylvan-Bold silt loams, 2-75	996	Velma-Walshville complex, 4-20
157	Symerton loam, 0-10	396	Vesser silt loam, 0-5
294	Symerton silt loam, 0-10	50	Virden silty clay loam, 0-2
34	Tallula silt loam, 2-30	885	Virden-Fosterburg silt loams, 0-2
965	Tallula-Bold silt loams, 2-75	941	Virden-Piasa silt loams, 0-2
36	Tama silt loam, 0-20	104	Virgil silt loam, 0-6
459	Tama silt loam, sandy substratum, 0-9	83	Wabash silty clay, 0-2
581	Tamalco silt loam, 1-7	26	Wagner silt loam, 0-3
565	Tell silt loam, 0-30	333	Wakeland silt loam, 0-2
952	Tell-Lamont complex, 0-45	441	Wakenda silt loam, 2-9
577	Terrace escarpment	292	Walkill silt loam, 0-3
587	Terril loam, 0-25	464	Walkill silty clay loam, 0-3
212	Thebes silt loam, 1-35	X584	Walshville loam, 4-15
206	Thorp silt loam, 0-2	456	Ware silt loam, 1-6
284	Tice silty clay loam, 0-4	290	Warsaw silt loam, 0-15
699	Timewell silt loam, 0-5	296	Washtenaw silt loam, 0-2
855	Timewell and Ipava soils, 0-5	49	Watseka loamy fine sand, 0-4
271	Timula silt loam, 2-60	697	Wauconda silt loam, 0-5
911	Timula-Hickory complex, 2-70	978	Wauconda and Beecher silt loams, 0-6
910	Timula-Miami complex, 0-60	981	Wauconda and Frankfort silt loams, 0-18
404	Titus silty clay loam, 0-2	727	Waukeel loam, 0-9
353	Toronto silt loam, 0-6	564	Waukegan silt loam, 0-12
544	Torox silt loam, 0-2	369	Waupecan silt loam, 0-5
633	Traer silt loam, 0-2	398	Wea silt loam, 0-6
765	Trempealeau silt loam, 0-6	461	Weinbach silt loam, 0-6
197	Troxel silt loam, 0-4	165	Weir silt loam, 0-2
573	Tuscola loam, 0-12	339	Wellston silt loam, 0-50
217	Twomile silt loam, 0-2	986	Wellston-Berks complex, 0-80
812	Typic Hapludalfs	388	Wenona silt loam, 2-15
407	Udifluvents, loamy	539	Wenona silt loam, loamy substratum, 2-10
770	Udolpho loam, 0-2	141	Wesley fine sandy loam, 0-5
759	Udolpho loam, sandy substratum, 0-2	300	Westland clay loam, 0-1
815	Udorthents, silty	700	Westmore silt loam, 1-70
482	Uniontown silt loam, 0-30	988	Westmore-Neotoma complex, 1-70
533	Urban land	22	Westville silt loam, 2-30
534	Urban land, clayey Orthents complex	509	Whalan loam, 0-25
392	Urban land, loamy Orthents complex	561	Whalan and NewGlarus silt loams, 0-45
926	Urban land-Drummer-Barrington complex	463	Wheeling silt loam, 0-8
925	Urban land-Frankfort-Bryce complex	571	Whitaker silt loam, 0-6
923	Urban land-Markham-Ashkum complex	362	Whitaker variant loam, 0-2
924	Urban land-Milford-Martinton complex	116	Whitson silt loam, 0-3
605	Ursa silt loam, 5-50	336	Wilbur silt loam, 0-2
890	Ursa-Atlas complex, 2-50	329	Will silty clay loam, 0-3
861	Ursa-Hickory complex, 5-70	545	Windere silt loam, 0-4
615	Vanmeter silty clay loam, 5-60	477	Winfield silt loam, 2-45
357	Vanpetten loam, 1-5	348	Wingate silt loam, 0-10

continued



**Appendix S2. Alphabetical List of and Percent Slope Ranges for Soil Types in Illinois Under an Optimum Level of Management (continued)**

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IL map

symbol Soil type name and slope range

728	Winnebago silt loam, 2-30
226	Wirt silt loam, 0-2
410	Woodbine silt loam, 2-25
37	Worthen silt loam, 0-12
622	Wyanet silt loam, 0-18
12	Wynoose silt loam, 0-2
639	Wynoose silt loam, bench, 0-2
896	Wynoose-Huey complex, 0-2
291	Xenia silt loam, 0-12
340	Zanesville silt loam, 0-30
940	Zanesville-Westmore silt loams, 0-70
524	Zipp silty clay loam, 0-1
405	Zook silty clay, 0-5
349	Zumbro sandy loam, 0-2
696	Zurich silt loam, 0-35
980	Zurich and Morley silt loams, 0-35
983	Zurich and Nappanee silt loams, 0-35
576	Zwingle silt loam, 0-10