

Database of Estimates by 6-Digit HUC of Animal Units and Recoverable and Non-Recoverable Manure Nutrients based on the 2007 Census of Agriculture

This database is a supplement to a USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. This database supplement provides estimates by 6-digit Hydrologic Unit Codes (HUCs) of manure, manure nutrients, and other selected variables derived from the 2007 Census of Agriculture Database. The full report cited above should be consulted for definitions and methods used to derive the estimates from variables available in the 2007 Census of Agriculture database.

Livestock populations reported in the Census of Agriculture were used in this report to estimate total manure and manure nutrients *as excreted*, which are then disaggregated into two parts—

- recoverable manure from animal feeding operations (AFOs), where manure from confined animals is assumed to be collectable and available for land application after recovery, and
- non-recoverable manure from all farms with livestock.

Non-recoverable manure includes manure deposited by pastured animals and manure that was assumed to not be recoverable from AFOs. Manure from confined livestock types on farms too small to qualify as AFOs (based on the size of the on-farm livestock population of confined livestock types) was included with pastured livestock, representing nutrient loadings on farmland in the vicinity of small farms.

Specifically, data from the Census of Agriculture databases were used to estimate¹—

1. average annual on-farm livestock population,
2. quantity of manure and manure nutrients *as excreted* for all farms with livestock,
3. quantity of recoverable manure and manure nutrients for AFOs,
4. quantity of non-recoverable manure nutrients for all farms with livestock,
5. capacity of farmland to receive land-applied manure nutrients, and
6. potential application rates of recoverable manure on crops and pastureland.

This information was then used to identify areas where the amount of recoverable manure nutrients exceeds the assumed availability of farmland for land application. Results from this estimation process identify areas potentially needing more land for manure application or alternative manure utilization options.

This database consists of the following seven tables.

1. **Table S1.** Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
2. **Table S2.** Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
3. **Table S3.** Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
4. **Table S4.** Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
5. **Table S5.** Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
6. **Table S6.** Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database
7. **Table S7.** Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

In some cases the estimates could not be reported because disclosure criteria to protect confidentiality were not met, indicated by a “DD” in place of the value in these tables.

¹ The Census of Agriculture is conducted by the National Agricultural Statistics Service (NASS), Department of Agriculture. Electronic databases of farm-level responses maintained by NASS were used to make the calculations at the farm level. Farm-level estimates were then aggregated for reporting. Access to the farm-level data base is restricted to protect the confidentiality of respondents. All estimates published in this supplement database meet the disclosure criteria used by NASS to assure confidentiality.

Beginning in 2007, the National Agricultural Statistics Service (NASS) assigned Hydrologic Unit Codes (HUCs) to all farms. Initial watershed assignments were made based on the principal state, principal county, and zip code for each operation. If the principal county was contained completely within a watershed and the zip code was valid for the principal county, the operation was deterministically assigned to that watershed. Operations that could not be deterministically assigned were probabilistically assigned. Probabilistic assignments were made based on the proportion of agricultural land each watershed had within the principal county. For example, if a watershed represents 60 percent of the agricultural land in a county, a record would have had a 6 out of 10 chance of being assigned to that watershed. HUCs at the 2-, 4-, and 6-digit level were assigned. There are a total of 334 6-digit HUCs for the 48 states. All large farms and ranches that were probabilistically assigned were examined by NASS Field Office staff to verify or correct the 6-digit HUC assignments.²

² This information was excerpted from a NASS summary of the methodology at http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Watersheds/wtrsheds.txt

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
10100	1,143	0	44	0
10200	1,018	10	70	9
10300	1,517	19	131	16
10400	946	7	85	23
10500	1,636	4	29	<4
10600	2,407	4	92	26
10700	3,034	5	145	62
10801	2,901	40	351	46
10802	4,406	11	222	55
10900	4,049	<4	213	127
11000	3,917	36	238	62
11100	385	18	90	19
20100	3,944	143	776	83
20200	7,008	100	999	108
20301	2,923	<4	63	32
20302	625	<4	21	21
20401	5,659	18	446	60
20402	8,024	201	829	227
20403	1,656	<4	16	7
20501	10,551	139	1,855	210
20502	4,604	70	748	163
20503	15,516	873	4,824	1,029
20600	6,881	985	668	1,158
20700	18,795	833	2,044	1,195
20801	5,740	64	249	107
20802	7,898	124	314	205
30101	11,267	85	510	247
30102	4,236	161	191	213
30201	3,083	127	97	170
30202	4,673	505	199	513
30300	8,267	1,406	647	1,665
30401	10,339	588	751	972
30402	8,501	472	327	554
30501	15,142	311	596	596
30502	4,747	144	169	191
30601	10,012	592	585	994
30602	3,038	68	129	94
30701	11,237	363	502	606
30702	3,396	134	113	165
30801	9,529	8	190	149
30802	986	<4	15	15
30901	2,502	21	43	52
30902	6,855	<4	157	147
31001	3,972	9	74	69
31002	8,110	22	128	110
31101	2,101	25	49	48
31102	8,236	204	277	285
31200	2,128	38	66	49
31300	13,063	396	558	693
31401	3,344	30	112	73
31402	5,155	254	208	377
31403	2,779	152	105	200
31501	13,406	787	640	1,218
31502	4,157	37	126	91
31601	14,040	582	859	1,158
31602	2,717	19	104	78
31700	8,506	612	365	784
31800	8,275	695	503	900
40101	48	0	0	0
40102	675	<4	34	4

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled **“Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,”** authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
40103	808	<4	84	9
40201	392	0	21	<4
40202	263	<4	17	0
40203	8	0	0	0
40301	6,840	238	2,045	224
40302	6,896	178	2,139	182
40400	2,154	36	373	32
40500	23,047	533	2,499	590
40601	7,145	77	620	60
40602	72	<4	6	<4
40700	2,236	15	163	13
40801	3,252	80	409	66
40802	8,850	78	797	88
40803	86	0	<4	0
40900	3,923	14	302	37
41000	23,624	413	1,820	451
41100	4,059	15	318	30
41201	3,044	73	382	36
41202	24	0	<4	0
41300	3,434	94	394	53
41401	1,078	19	131	15
41402	4,817	133	1,029	117
41501	587	22	238	19
41502	25	<4	4	0
41503	1,877	59	539	40
50100	11,058	68	1,339	122
50200	9,755	18	543	72
50301	9,752	45	880	71
50302	8,831	15	251	28
50400	14,273	197	2,284	396
50500	12,252	18	398	102
50600	9,209	84	595	99
50701	636	0	<4	0
50702	1,322	0	18	8
50800	10,673	216	1,064	202
50901	5,343	<4	131	38
50902	10,380	32	409	57
51001	9,989	7	361	78
51002	12,737	5	467	104
51100	22,949	260	1,265	486
51201	28,584	855	2,429	702
51202	17,550	367	1,347	392
51301	17,303	97	787	327
51302	15,177	33	597	180
51401	14,516	66	774	183
51402	8,468	99	409	153
60101	20,247	69	706	288
60102	11,936	25	348	127
60200	6,332	157	375	315
60300	19,671	657	1,192	1,268
60400	12,646	137	449	280
70101	6,636	80	795	130
70102	11,333	356	2,631	471
70200	19,166	1,381	2,973	797
70300	6,806	56	788	73
70400	15,824	599	4,086	548
70500	7,534	132	2,386	204
70600	12,601	693	4,007	660
70700	13,274	216	3,535	278
70801	14,322	735	2,329	572

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled **“Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,”** authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
70802	18,784	1,137	3,142	741
70900	17,584	524	3,629	446
71000	18,827	1,094	2,191	737
71100	14,248	189	985	189
71200	12,429	181	1,012	258
71300	20,910	378	1,574	266
71401	14,146	38	903	154
71402	8,500	130	878	142
80101	705	7	14	8
80102	13,581	180	511	303
80201	170	0	<4	0
80202	6,485	36	169	62
80203	4,436	10	136	31
80204	1,124	4	22	13
80301	269	0	<4	0
80302	10,332	10	206	75
80401	2,954	163	286	299
80402	4,459	360	212	447
80403	1,737	35	48	50
80500	4,907	0	90	24
80601	261	0	12	5
80602	4,791	44	112	88
80701	210	0	18	6
80702	4,016	50	251	134
80703	448	0	22	10
80801	4,399	0	129	31
80802	6,051	<4	156	76
80901	56	0	<4	0
80902	713	<4	26	5
80903	902	0	28	6
90100	4,320	10	150	34
90201	8,610	105	649	122
90202	5,517	18	197	33
90203	9,526	29	276	62
90300	901	0	22	<4
100100	108	0	5	5
100200	2,341	11	103	38
100301	2,572	12	84	29
100302	2,269	18	98	55
100401	1,620	<4	48	18
100402	1,168	<4	32	15
100500	2,730	4	97	34
100600	2,614	<4	67	15
100700	3,740	19	135	45
100800	3,100	8	172	40
100901	787	0	19	6
100902	1,343	0	27	6
101000	2,125	5	111	42
101101	2,500	<4	87	18
101102	1,448	<4	49	5
101201	2,864	4	83	40
101202	1,533	<4	59	14
101301	5,636	18	342	63
101302	3,862	12	253	36
101303	1,666	6	74	11
101401	2,660	64	314	61
101402	1,915	16	101	25
101500	3,259	59	323	89
101600	10,293	230	1,082	154
101701	4,460	212	919	90

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled **“Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,”** authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
101702	7,926	917	1,809	635
101800	4,925	93	289	114
101900	14,560	180	724	357
102001	3,248	135	339	99
102002	4,173	130	386	69
102100	5,030	173	659	165
102200	5,534	409	1,020	228
102300	9,555	1,084	1,932	650
102400	17,327	332	1,564	252
102500	10,497	209	627	220
102600	10,304	82	657	149
102701	7,999	45	477	111
102702	8,853	273	803	226
102801	12,222	91	689	165
102802	4,752	20	215	54
102901	24,548	202	1,376	397
102902	4,755	32	393	114
103001	15,696	237	904	314
103002	2,288	22	103	14
110100	25,088	740	1,406	1,244
110200	7,468	36	305	145
110300	14,272	216	893	261
110400	4,089	65	177	91
110500	7,824	21	345	122
110600	7,495	16	290	90
110701	9,091	19	373	100
110702	18,732	500	1,374	837
110800	1,876	<4	41	14
110901	1,916	26	94	55
110902	8,617	20	305	111
111001	2,607	38	142	72
111002	1,832	18	64	35
111003	9,897	21	266	112
111101	12,631	487	762	786
111102	8,614	584	714	854
111201	3,706	60	179	117
111202	1,203	<4	32	16
111203	3,477	9	96	44
111301	2,488	<4	71	32
111302	9,490	17	304	116
111303	9,646	24	376	118
111401	15,354	416	850	723
111402	3,910	183	204	261
111403	10,890	255	432	354
120100	13,721	313	468	460
120200	12,018	247	359	385
120301	26,526	21	784	304
120302	9,062	14	265	109
120401	6,377	4	190	113
120402	3,847	0	91	48
120500	8,715	117	345	195
120601	5,577	9	140	48
120602	13,592	75	383	153
120701	17,326	54	553	245
120702	12,808	68	294	167
120800	6,605	10	184	71
120901	8,964	16	154	76
120902	7,646	<4	129	74
120903	6,417	9	169	72
120904	2,622	4	71	37

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
121001	4,478	17	142	69
121002	10,911	92	227	200
121003	8,110	4	231	117
121004	4,000	<4	73	25
121101	9,350	14	180	111
121102	7,636	6	196	120
130100	1,632	0	122	16
130201	1,688	0	99	41
130202	3,649	20	451	379
130301	1,646	11	38	29
130302	578	9	26	27
130401	442	<4	24	18
130402	435	0	8	6
130403	608	0	8	7
130500	1,381	4	36	25
130600	2,406	42	78	94
130700	1,395	6	35	24
130800	1,318	<4	32	23
130900	969	<4	20	17
140100	2,490	<4	118	39
140200	2,218	7	144	43
140300	1,237	<4	111	48
140401	1,042	<4	58	30
140402	98	0	5	0
140500	1,565	<4	66	20
140600	2,569	11	194	71
140700	750	5	115	68
140801	4,326	<4	693	580
140802	2,342	0	548	516
150100	1,199	<4	255	223
150200	5,176	<4	1,611	1,597
150301	521	<4	32	26
150302	222	0	18	17
150400	997	<4	64	48
150501	712	29	79	93
150502	772	<4	36	30
150503	907	14	103	103
150601	916	<4	180	181
150602	608	0	103	100
150701	823	31	100	113
150702	318	4	20	22
150801	76	0	<4	<4
150802	6	0	0	0
150803	274	0	8	8
160101	361	0	42	17
160102	2,640	55	326	93
160201	1,793	8	115	44
160202	2,973	20	206	71
160203	1,883	15	140	44
160300	2,507	85	228	118
160401	402	<4	41	17
160402	264	0	28	11
160501	350	<4	44	19
160502	388	16	42	28
160503	287	<4	20	12
160600	779	<4	112	60
170101	672	0	21	<4
170102	6,809	7	160	64
170103	3,707	<4	112	32
170200	8,842	52	239	117

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S1. Farm counts by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	Number of Non-AFOs	Number of Large and Medium AFO-CAFOs	Number of Small and Very Small AFOs	Number of AFOs with Farm-Level Excess Manure
170300	4,786	57	138	117
170401	841	0	87	18
170402	9,396	284	764	372
170501	7,763	112	540	236
170502	911	<4	55	20
170601	4,223	6	130	54
170602	841	0	42	<4
170603	1,908	<4	66	6
170701	5,192	18	146	77
170702	958	<4	45	21
170703	3,037	4	133	44
170800	4,641	46	149	96
170900	17,236	89	384	245
171001	2,227	16	109	54
171002	1,656	51	115	109
171003	5,555	8	168	67
171100	10,255	161	360	220
171200	817	0	57	17
180101	4,727	95	155	170
180102	2,205	10	73	29
180200	802	0	29	10
180201	15,349	75	376	296
180300	12,867	595	284	589
180400	14,711	772	438	768
180500	4,126	34	133	137
180600	6,915	17	196	178
180701	3,458	5	189	189
180702	2,130	114	190	298
180703	7,244	24	249	261
180800	400	0	26	16
180901	87	0	<4	0
180902	1,007	19	112	117
181001	225	<4	22	25
181002	1,362	30	62	69
190101	13	0	0	0
190102	12	0	0	0
190103	11	0	0	0
190104	<4	<4	<4	<4
190201	20	0	<4	0
190202	7	0	0	0
190203	111	0	<4	<4
190204	58	0	<4	0
190205	184	0	10	4
190206	7	0	0	0
190207	14	0	<4	<4
190301	13	0	0	0
190303	<4	<4	<4	<4
190305	<4	<4	<4	<4
190401	25	0	<4	0
190403	<4	<4	<4	<4
190404	15	0	<4	<4
190405	152	0	12	4
190406	<4	<4	<4	<4
190408	<4	<4	<4	<4
190501	4	0	0	0
200100	4,620	<4	27	28
200200	875	<4	4	5
200400	57	0	0	0
200500	212	0	7	7
200600	919	7	41	47
200700	727	<4	4	4
200800	14	0	<4	<4

Notes: The total number of AFOs is the sum of the number of large and medium AFO-CAFOs and the number of small and very small AFOs. The total number of farms is the sum of AFOs and Non-AFOs. For complete definitions of variables, see the USDA/NRCS report entitled “Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
10100	2,992	3,172	156	2,363	2,560	802
10200	4,894	13,859	290	12,056	4,252	1,803
10300	7,827	25,227	722	21,787	6,857	3,438
10400	4,997	23,432	505	21,847	4,321	1,585
10500	5,005	3,997	406	3,498	3,974	498
10600	11,673	8,411	1,176	6,646	10,240	1,763
10700	15,840	10,450	1,291	8,924	13,910	1,523
10801	15,105	55,811	1,110	48,156	13,678	7,651
10802	20,851	21,661	1,665	18,916	18,681	2,673
10900	18,091	11,595	1,865	9,807	16,013	1,778
11000	20,660	51,331	1,701	44,678	18,529	6,554
11100	2,024	28,965	83	24,558	1,885	3,983
20100	25,835	201,916	1,265	176,841	23,880	25,072
20200	59,026	172,610	3,059	146,804	54,906	25,517
20301	16,531	4,324	766	3,328	15,304	956
20302	2,117	2,297	240	2,132	1,502	DD
20401	32,512	57,568	2,102	49,954	29,265	7,611
20402	42,385	151,792	2,493	136,783	38,702	14,956
20403	7,855	1,556	564	1,458	7,182	DD
20501	80,036	270,232	4,144	229,131	73,513	40,997
20502	27,372	95,615	2,104	81,612	24,311	13,961
20503	107,646	855,638	8,443	771,215	95,154	84,040
20600	41,007	290,509	1,626	282,581	38,244	7,878
20700	328,301	665,560	6,184	559,618	320,464	105,863
20801	109,156	55,055	1,800	41,208	106,864	13,844
20802	181,078	81,947	2,046	63,716	178,184	18,223
30101	218,063	102,885	2,639	82,475	214,663	20,406
30102	42,871	110,660	1,001	105,561	41,607	5,094
30201	29,941	122,447	382	118,981	29,538	3,466
30202	36,190	426,032	960	416,684	35,114	9,346
30300	98,848	1,199,916	1,835	1,157,860	96,742	42,029
30401	159,070	287,899	2,221	252,280	156,291	35,612
30402	68,381	364,925	1,844	353,750	66,254	11,051
30501	213,094	204,202	3,483	178,069	209,041	26,112
30502	45,321	58,040	1,360	51,678	43,886	6,362
30601	190,263	270,227	1,891	230,282	187,853	39,945
30602	46,077	38,545	562	32,853	45,471	5,691
30701	173,301	186,849	2,512	161,207	170,229	25,506
30702	41,948	64,539	1,157	56,136	40,664	8,395
30801	248,297	17,129	2,892	13,940	244,842	3,186
30802	24,277	DD	299	DD	23,957	DD
30901	221,829	77,425	333	64,824	221,333	12,600
30902	159,784	17,515	1,986	15,266	157,167	2,242
31001	181,281	32,201	550	27,092	180,661	5,105
31002	196,327	40,811	1,907	34,447	193,424	6,299
31101	68,787	19,193	489	17,298	68,078	1,895
31102	174,005	185,433	2,104	159,942	171,353	25,487
31200	32,309	29,297	513	27,416	31,746	1,881
31300	261,980	207,476	2,774	183,180	258,803	24,272
31401	49,458	19,927	740	14,426	48,451	DD
31402	111,186	105,251	926	88,538	110,099	16,712
31403	54,142	55,593	505	44,703	53,443	10,889
31501	258,099	305,905	2,710	272,483	254,821	33,372
31502	128,578	28,368	825	20,838	127,661	7,527
31601	281,135	273,123	2,294	233,374	278,323	39,744
31602	53,799	14,267	552	11,571	53,148	2,695
31700	169,378	206,126	1,692	179,385	167,312	26,714
31800	172,972	274,283	1,284	242,941	171,313	31,340
40101	219	0	DD	0	194	0
40102	8,367	3,607	284	2,716	7,909	890

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
40103	11,208	10,079	321	6,724	10,606	3,315
40201	2,801	1,870	144	1,189	2,535	DD
40202	2,143	2,146	159	1,699	1,924	447
40203	DD	0	DD	0	DD	0
40301	44,475	397,546	3,851	363,009	37,972	34,119
40302	37,709	351,658	4,033	317,279	30,884	34,260
40400	8,739	56,096	966	50,216	7,396	5,735
40500	118,862	639,776	11,932	590,695	103,487	48,866
40601	44,853	133,143	3,360	121,060	38,486	11,888
40602	226	DD	46	DD	164	146
40700	20,681	23,106	1,249	18,699	17,743	4,196
40801	10,942	116,268	1,213	111,485	9,215	4,762
40802	45,411	123,333	4,624	113,475	38,526	9,755
40803	670	DD	38	DD	631	DD
40900	21,055	28,941	1,744	26,223	18,561	2,613
41000	59,236	378,637	10,838	362,394	47,300	16,184
41100	22,060	33,258	2,184	28,991	19,302	4,266
41201	16,624	97,646	1,277	84,848	15,018	12,785
41202	DD	DD	DD	DD	DD	DD
41300	26,047	163,739	1,561	146,294	24,220	17,443
41401	7,637	24,912	421	21,917	7,035	2,995
41402	34,027	238,247	2,058	211,349	30,935	26,869
41501	4,842	51,596	291	46,054	4,500	5,542
41502	DD	DD	DD	DD	DD	DD
41503	17,539	110,813	890	93,687	16,314	17,069
50100	78,558	159,755	5,042	131,829	71,569	27,897
50200	117,318	48,586	2,757	39,425	113,799	9,126
50301	95,660	93,084	4,397	77,691	90,054	15,382
50302	102,800	27,958	2,183	21,089	100,411	6,868
50400	163,424	314,905	7,303	261,258	153,304	53,553
50500	288,195	52,206	2,640	34,063	285,134	18,126
50600	58,193	102,462	3,826	91,742	53,892	10,717
50701	5,366	DD	127	DD	5,118	0
50702	16,323	DD	354	456	15,949	DD
50800	56,779	217,069	5,092	203,221	51,194	13,841
50901	67,632	7,372	1,523	4,774	65,868	2,598
50902	111,462	53,801	3,424	44,094	107,576	9,706
51001	267,242	30,000	2,537	20,108	264,412	9,886
51002	325,685	31,591	2,846	22,199	322,387	9,380
51100	568,975	209,565	5,743	168,170	562,815	41,388
51201	125,939	794,620	10,995	758,899	113,542	35,532
51202	134,316	394,659	8,037	370,927	124,534	23,657
51301	450,899	89,213	3,981	67,511	446,050	21,697
51302	338,777	65,470	3,119	55,095	335,037	10,303
51401	293,362	88,698	3,903	64,023	288,001	24,628
51402	108,918	87,509	2,202	74,566	106,201	12,941
60101	406,266	81,946	3,955	62,242	401,377	19,678
60102	265,459	32,037	2,176	25,775	262,795	6,261
60200	143,258	75,386	1,497	63,945	141,461	11,437
60300	421,270	254,322	4,203	207,662	416,399	46,597
60400	273,444	72,146	2,214	60,673	270,595	11,432
70101	97,598	132,019	2,486	107,884	92,910	23,940
70102	82,768	555,091	6,104	512,755	74,242	42,261
70200	131,068	1,270,807	7,257	1,223,603	121,011	47,108
70300	68,861	115,448	2,996	94,958	63,715	20,460
70400	136,151	744,036	7,645	644,528	123,845	99,301
70500	70,958	342,580	3,481	294,623	64,309	47,865
70600	157,761	892,377	6,001	754,821	150,394	137,187
70700	116,067	465,225	6,036	389,029	106,989	76,027
70801	130,292	662,671	6,433	606,014	122,098	56,515

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
70802	126,611	1,115,399	8,686	1,042,184	116,056	73,072
70900	112,240	733,243	9,080	657,974	100,551	74,647
71000	199,111	1,224,514	6,345	1,168,147	191,169	56,009
71100	271,249	218,292	3,630	168,988	267,137	49,271
71200	50,669	272,927	5,251	255,737	44,682	17,165
71300	143,104	398,046	7,147	357,880	135,010	39,901
71401	260,851	96,437	4,480	64,128	253,840	32,306
71402	46,236	156,337	3,336	143,293	42,631	13,017
80101	5,745	3,235	131	2,847	5,607	388
80102	184,191	95,913	2,364	88,572	181,472	7,314
80201	DD	DD	11	DD	DD	0
80202	53,257	33,400	1,440	29,820	51,677	3,574
80203	48,876	14,862	1,060	12,641	47,774	2,220
80204	12,194	DD	277	DD	11,902	DD
80301	DD	DD	DD	DD	DD	0
80302	145,677	16,060	1,282	14,690	144,246	1,369
80401	99,598	72,679	621	52,529	98,941	20,147
80402	86,501	143,087	1,031	127,145	85,354	15,938
80403	41,798	15,627	268	14,205	41,503	1,421
80500	77,087	10,547	614	7,919	76,444	DD
80601	1,526	DD	26	DD	1,495	DD
80602	99,698	31,949	699	29,721	98,779	2,227
80701	5,063	2,649	35	2,383	5,025	DD
80702	108,241	50,972	773	44,297	107,169	6,673
80703	16,048	1,131	150	1,131	15,879	0
80801	91,915	7,439	1,025	6,447	90,809	DD
80802	161,293	9,346	1,310	8,033	159,672	DD
80901	DD	DD	0	DD	DD	DD
80902	13,108	2,986	208	2,741	12,879	246
80903	27,491	1,881	201	DD	27,218	DD
90100	151,105	23,599	675	16,600	144,821	6,999
90201	96,455	184,226	1,922	163,974	92,232	20,247
90202	122,878	41,828	885	30,633	119,990	11,103
90203	99,082	52,865	1,190	43,808	95,551	8,562
90300	10,972	1,959	287	1,150	10,342	809
100100	5,168	DD	DD	DD	5,128	0
100200	239,130	32,074	800	20,014	229,052	12,057
100301	185,264	28,280	840	21,478	183,627	6,772
100302	132,478	36,250	359	29,421	131,810	6,826
100401	194,356	15,173	318	8,160	193,597	7,009
100402	163,784	9,441	217	4,934	162,880	4,505
100500	234,391	17,410	614	12,045	232,742	5,358
100600	133,226	11,162	292	6,571	132,467	DD
100700	211,774	63,109	1,186	43,427	209,467	19,657
100800	297,684	31,973	1,049	21,053	292,245	10,918
100901	87,326	4,050	182	DD	86,857	1,445
100902	213,900	7,526	367	2,020	213,013	5,506
101000	265,934	44,768	338	26,889	264,928	17,878
101101	98,903	10,806	397	4,846	97,343	5,950
101102	185,511	16,359	338	6,921	181,583	9,438
101201	324,011	DD	767	DD	317,538	18,477
101202	160,517	17,091	313	10,675	156,155	6,417
101301	445,493	95,422	964	54,468	437,716	40,929
101302	308,283	50,953	784	26,958	303,123	23,843
101303	280,162	45,008	327	23,844	268,215	21,163
101401	292,449	160,443	804	96,263	279,035	63,847
101402	294,253	63,936	316	36,854	288,935	27,081
101500	505,616	218,689	564	161,142	494,327	57,546
101600	622,612	505,991	2,070	358,175	612,955	147,519
101701	162,237	342,139	1,715	262,083	159,763	79,937

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
101702	170,823	975,330	3,544	881,966	166,187	93,322
101800	506,200	356,323	1,091	298,175	498,106	57,309
101900	350,110	930,624	6,032	867,148	325,459	63,276
102001	187,591	461,674	1,160	425,173	185,937	33,241
102002	50,792	219,195	1,297	203,882	49,287	15,313
102100	611,176	623,580	1,535	502,551	606,663	120,983
102200	205,539	841,580	1,903	756,396	203,463	85,175
102300	100,922	1,077,439	3,864	1,025,747	96,651	51,682
102400	329,229	468,364	4,952	400,332	323,565	68,024
102500	550,556	950,902	1,750	851,888	547,325	98,993
102600	468,371	522,962	2,120	448,442	464,797	74,506
102701	221,108	99,348	2,639	71,917	216,743	27,425
102702	221,565	500,853	2,508	446,276	218,118	54,528
102801	373,482	335,848	2,501	291,549	370,451	44,267
102802	147,411	42,149	1,034	28,287	145,320	13,860
102901	879,376	312,331	6,683	228,613	870,563	83,600
102902	175,522	63,566	1,428	44,454	173,538	19,034
103001	410,837	249,871	4,250	190,103	405,757	59,736
103002	38,698	25,032	756	17,617	37,673	7,415
110100	865,457	460,456	5,620	367,810	858,083	92,612
110200	299,547	218,123	2,799	192,907	293,916	23,966
110300	470,184	1,527,510	3,356	1,445,936	463,641	79,668
110400	147,497	818,658	457	795,115	146,619	23,389
110500	373,280	189,498	1,598	170,892	371,214	18,601
110600	387,755	53,304	1,402	37,229	373,745	16,066
110701	431,102	68,894	2,697	37,788	427,128	31,078
110702	783,237	430,865	5,355	336,279	776,049	94,537
110800	127,150	4,220	375	2,086	123,239	DD
110901	181,048	383,508	296	357,548	180,665	25,958
110902	300,529	58,877	2,610	43,314	297,027	15,554
111001	170,956	924,481	316	914,572	170,469	9,909
111002	116,577	284,658	208	269,321	116,292	DD
111003	335,784	46,341	2,949	38,233	331,746	8,105
111101	399,980	247,900	3,651	200,885	395,551	46,991
111102	252,415	285,969	1,991	236,745	249,851	49,048
111201	213,282	947,299	518	921,615	212,288	25,681
111202	58,915	DD	108	DD	58,793	846
111203	164,977	125,990	554	121,038	164,224	4,907
111301	136,662	10,059	350	8,336	136,119	1,719
111302	529,516	50,338	1,910	34,679	526,301	15,657
111303	494,088	98,165	2,240	80,603	490,843	17,560
111401	595,237	215,777	3,593	159,923	590,784	55,800
111402	154,213	78,535	782	60,389	153,241	18,143
111403	335,251	181,623	2,892	147,783	331,428	33,735
120100	308,445	165,458	4,332	136,793	302,671	28,658
120200	294,108	133,559	3,641	103,179	288,885	30,354
120301	589,171	84,319	9,571	61,783	576,399	22,516
120302	341,954	38,817	2,256	22,095	338,604	16,692
120401	131,995	15,617	2,096	9,106	128,889	6,510
120402	110,171	7,263	1,318	4,595	108,127	DD
120500	219,856	1,048,311	1,516	1,010,009	218,176	38,264
120601	223,340	43,661	853	27,759	221,995	15,892
120602	364,346	136,440	3,682	113,887	358,097	22,540
120701	705,109	80,477	3,452	54,922	699,903	25,536
120702	437,116	114,102	2,698	92,216	432,547	21,856
120800	165,862	63,185	1,494	54,127	164,093	9,058
120901	378,360	58,153	1,413	50,304	374,466	7,813
120902	253,222	13,138	1,378	8,699	246,634	4,313
120903	225,755	17,749	1,403	8,856	223,154	8,893
120904	104,334	DD	655	DD	103,537	5,763

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
121001	176,736	20,007	789	15,071	175,504	4,925
121002	347,188	99,029	1,930	77,087	341,523	21,775
121003	198,781	19,611	2,042	16,549	195,292	DD
121004	207,222	18,585	660	12,646	206,083	5,939
121101	359,824	68,744	1,782	53,448	352,880	15,076
121102	235,053	41,162	1,818	37,067	232,265	4,028
130100	73,735	11,308	650	9,960	72,713	1,348
130201	26,850	3,438	878	3,015	24,736	DD
130202	100,587	52,160	4,488	44,749	95,660	7,407
130301	23,471	63,611	798	DD	21,144	DD
130302	33,366	39,151	157	34,583	33,019	4,568
130401	7,089	4,843	453	DD	6,636	DD
130402	44,779	988	144	618	44,360	DD
130403	53,751	290	84	190	53,209	DD
130500	64,814	15,382	558	13,414	63,950	1,967
130600	175,403	155,215	743	145,031	174,520	10,180
130700	139,155	18,623	327	12,198	138,383	6,425
130800	65,816	DD	304	DD	64,721	2,520
130900	25,658	DD	181	DD	25,391	DD
140100	70,134	12,648	1,532	11,165	67,605	1,474
140200	70,088	19,010	1,245	14,395	67,107	4,615
140300	31,551	12,842	866	8,649	30,561	4,193
140401	122,440	9,621	338	2,864	120,179	6,751
140402	7,997	DD	74	230	6,693	DD
140500	110,497	8,453	518	4,925	109,045	3,527
140600	104,631	27,615	1,635	15,869	102,483	11,744
140700	39,138	13,887	744	10,340	38,250	3,547
140801	62,714	27,751	6,383	22,046	55,832	DD
140802	28,894	12,359	7,344	11,655	21,293	690
150100	29,858	16,960	1,940	14,096	27,810	2,860
150200	77,718	76,749	19,709	64,510	57,900	DD
150301	4,969	5,458	431	5,415	4,521	DD
150302	11,647	3,851	190	2,897	11,451	DD
150400	49,835	10,675	789	8,859	49,024	1,807
150501	13,540	87,436	799	85,252	12,620	DD
150502	24,968	DD	573	DD	24,367	DD
150503	33,164	DD	848	DD	32,198	3,701
150601	19,286	16,816	2,222	15,966	16,959	DD
150602	24,922	5,924	1,013	4,847	23,868	1,078
150701	11,129	125,712	1,005	122,148	9,963	3,337
150702	1,079	DD	134	DD	942	DD
150801	DD	DD	40	DD	DD	0
150802	393	0	0	0	393	0
150803	8,672	DD	224	455	8,446	DD
160101	44,315	10,401	156	3,999	44,141	6,400
160102	71,056	82,508	1,679	68,176	68,580	14,283
160201	37,995	21,136	1,221	13,963	35,423	7,173
160202	44,272	46,669	2,448	36,498	41,282	10,164
160203	113,771	47,358	1,346	38,488	112,104	8,854
160300	130,491	244,345	1,587	221,510	128,084	22,795
160401	97,842	14,443	263	10,522	97,515	3,919
160402	46,828	DD	219	DD	46,535	DD
160501	6,559	5,217	355	3,673	6,150	1,544
160502	19,339	25,967	378	21,635	18,867	DD
160503	20,161	9,012	285	DD	19,802	DD
160600	70,421	21,370	837	17,695	69,532	DD
170101	7,763	957	227	809	7,459	DD
170102	193,192	23,169	2,570	13,177	187,198	9,984
170103	32,598	7,479	1,442	5,724	29,862	1,749
170200	146,818	212,919	2,344	190,303	143,822	22,569

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S2. Animal Units (AU) by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	All livestock types		Confined livestock types		Pastured livestock types	
	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs	AU on Non-AFOs	AU on AFOs
170300	67,042	162,996	1,616	152,936	65,182	9,976
170401	28,683	8,145	341	4,837	28,275	3,308
170402	321,795	933,235	4,075	828,417	314,981	104,436
170501	313,789	441,156	4,428	388,292	308,426	52,843
170502	75,969	10,949	373	4,526	75,511	6,422
170601	100,941	24,217	1,114	15,053	99,198	9,164
170602	61,188	6,175	351	3,247	60,710	2,928
170603	33,772	5,226	432	2,597	32,873	2,625
170701	96,411	175,207	1,738	164,777	93,839	10,366
170702	62,411	8,686	264	4,630	61,821	4,055
170703	89,220	20,226	1,466	10,465	86,975	9,760
170800	34,116	36,207	1,262	31,940	32,206	4,261
170900	110,304	102,484	5,743	92,167	102,166	10,292
171001	23,019	22,121	713	20,536	22,004	1,550
171002	19,408	47,106	558	41,212	18,477	5,893
171003	105,316	21,459	2,357	12,151	102,118	9,295
171100	90,784	162,075	3,750	146,002	85,249	16,049
171200	150,389	12,974	363	7,293	149,839	5,681
180101	70,060	96,928	1,430	81,661	68,349	15,238
180102	113,247	30,915	948	20,024	112,119	10,890
180200	61,197	8,878	401	DD	60,664	6,117
180201	221,633	109,495	5,275	94,260	213,592	15,176
180300	159,606	1,829,890	2,761	1,767,424	156,535	62,457
180400	277,252	1,322,679	4,090	1,248,147	272,438	74,496
180500	69,959	32,164	1,145	24,229	68,442	7,934
180600	149,622	33,245	1,965	24,079	147,099	9,133
180701	14,534	10,042	2,403	9,172	11,982	860
180702	12,691	243,655	2,751	235,875	9,758	7,719
180703	20,756	39,832	2,929	37,886	17,027	1,944
180800	29,280	991	376	906	28,765	DD
180901	7,283	DD	45	DD	7,228	0
180902	18,238	60,683	1,254	59,500	16,719	1,171
181001	2,100	DD	324	DD	1,751	0
181002	7,787	294,034	531	292,283	7,166	1,752
190101	0	0	0	0	0	0
190102	DD	0	DD	0	0	0
190103	DD	0	DD	0	DD	0
190104	0	0	0	0	0	0
190201	DD	DD	DD	DD	DD	DD
190202	DD	0	DD	0	DD	0
190203	711	DD	74	80	597	DD
190204	240	DD	32	DD	127	0
190205	976	792	77	663	689	DD
190206	DD	0	DD	0	DD	0
190207	2,181	DD	DD	DD	DD	DD
190301	DD	0	0	0	DD	0
190303	0	0	0	0	0	0
190305	0	0	0	0	0	0
190401	DD	DD	DD	DD	119	DD
190403	DD	0	DD	0	DD	0
190404	46	DD	DD	DD	DD	DD
190405	602	585	92	292	328	239
190406	DD	0	0	0	DD	0
190408	DD	0	0	0	DD	0
190501	0	0	0	0	0	0
200100	89,754	DD	667	3,140	88,972	DD
200200	16,451	DD	188	DD	16,179	DD
200400	DD	0	DD	0	DD	0
200500	3,207	DD	65	DD	3,141	0
200600	5,018	4,801	230	4,197	4,787	DD
200700	9,612	DD	161	DD	9,328	DD
200800	DD	DD	0	DD	DD	0

Notes: All AU includes specialty livestock in addition to confined and pastured livestock types. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
10100	1,802	41,760	234	5,118	22,829	480,357	4,915	85,162
10200	3,348	240,592	451	31,270	45,735	3,064,828	9,538	542,230
10300	8,614	430,213	1,132	56,262	102,373	5,483,052	19,918	976,715
10400	6,393	305,600	780	58,908	75,625	7,591,560	14,187	2,169,215
10500	4,778	61,138	686	8,795	67,363	877,987	14,608	193,409
10600	13,737	122,423	1,954	16,003	171,813	1,528,798	35,395	275,569
10700	13,848	151,192	2,087	20,564	172,665	1,979,138	36,130	375,656
10801	14,609	959,476	1,970	125,589	178,317	12,365,853	36,286	2,228,653
10802	20,778	360,457	2,880	47,284	265,184	4,583,173	56,815	838,250
10900	19,414	160,290	2,793	21,236	236,546	1,995,346	50,018	376,909
11000	20,284	781,694	2,828	116,346	262,610	12,782,665	54,956	2,894,234
11100	1,008	496,076	137	64,485	12,440	6,360,860	2,401	1,129,054
20100	15,380	3,495,672	2,127	460,358	203,287	45,730,821	41,660	8,372,358
20200	35,752	2,890,652	4,848	376,386	455,802	37,137,911	89,584	6,675,471
20301	8,391	50,603	1,214	6,810	105,891	654,174	21,918	122,875
20302	2,387	30,182	397	6,867	31,548	511,147	7,209	162,849
20401	25,429	848,012	3,305	124,742	320,194	13,144,039	63,370	2,851,385
20402	29,676	2,279,270	3,852	353,694	364,967	35,765,363	70,354	7,969,561
20403	5,242	21,047	804	3,404	65,721	DD	14,111	DD
20501	51,882	4,371,473	6,443	561,505	611,030	55,464,772	114,423	9,919,265
20502	25,027	1,438,382	2,881	194,931	285,846	19,552,762	52,053	3,767,274
20503	107,244	12,248,135	13,129	1,796,045	1,221,176	189,334,066	228,832	40,645,634
20600	18,915	4,574,006	2,421	1,092,180	229,419	93,529,545	44,310	26,050,969
20700	76,541	7,770,661	9,560	1,421,739	866,011	146,158,686	165,588	36,487,924
20801	21,198	661,756	2,735	114,469	247,746	10,382,500	48,967	2,490,959
20802	25,178	954,895	3,145	172,623	283,847	16,132,673	54,954	4,038,250
30101	34,094	1,281,726	4,220	176,381	343,594	17,684,818	66,061	3,633,281
30102	11,409	1,266,182	1,476	208,699	141,797	22,101,024	27,475	5,082,450
30201	4,636	1,185,064	665	173,900	54,325	21,480,420	11,844	5,063,732
30202	9,730	4,171,769	1,464	633,271	129,835	80,612,751	28,175	17,745,740
30300	20,385	12,137,303	2,883	1,934,759	254,132	232,634,015	54,590	52,685,079
30401	26,616	3,481,427	3,758	774,791	288,180	74,157,273	60,548	20,507,626
30402	20,568	3,763,946	2,848	716,839	236,561	76,671,305	48,087	19,767,874
30501	39,169	2,122,026	5,390	454,947	431,220	46,500,417	86,234	12,808,546
30502	13,497	805,887	1,876	172,429	166,736	15,598,037	33,185	4,195,232
30601	22,920	3,519,396	2,961	845,752	252,804	75,773,965	50,455	21,654,275
30602	6,746	531,289	901	92,593	77,241	8,440,874	14,767	2,031,324
30701	28,606	2,549,001	3,920	563,091	333,081	52,276,349	66,815	14,526,445
30702	13,933	892,580	1,812	185,711	151,973	17,225,189	30,256	4,713,507
30801	33,041	248,556	4,295	32,216	348,030	2,846,161	71,907	524,511
30802	3,654	DD	493	DD	34,780	DD	7,213	DD
30901	4,246	1,179,918	532	165,411	44,826	16,997,284	9,065	3,739,882
30902	22,237	269,546	3,192	35,102	249,878	3,030,129	52,332	571,929
31001	7,447	536,047	924	68,424	79,695	6,226,057	15,769	1,139,516
31002	24,877	583,359	3,259	89,076	257,828	9,726,625	52,116	2,341,405
31101	5,115	317,923	695	52,457	60,866	4,698,144	12,188	1,070,861
31102	24,946	2,706,701	3,348	490,207	275,502	46,698,663	55,228	11,777,514
31200	5,607	470,906	752	94,384	63,075	8,114,050	12,514	2,100,058
31300	31,164	2,947,741	4,270	625,121	345,161	55,348,960	68,931	14,886,502
31401	8,810	217,807	1,219	44,262	98,350	4,147,352	20,224	1,154,304
31402	11,235	1,417,674	1,490	334,659	113,177	28,480,556	23,978	8,091,664
31403	5,594	702,353	821	171,813	62,176	14,776,925	13,188	4,262,495
31501	33,434	4,223,976	4,557	1,053,912	352,895	91,024,283	73,928	26,263,851
31502	9,922	326,619	1,372	66,619	99,395	5,576,249	21,483	1,488,274
31601	27,963	3,442,593	3,903	732,467	281,019	66,156,194	60,106	17,864,152
31602	6,955	188,027	935	32,960	67,429	2,941,991	14,844	765,632
31700	18,770	2,846,775	2,719	699,026	214,315	59,831,604	46,452	17,191,497
31800	14,898	3,912,361	2,082	916,594	148,907	79,245,529	31,841	22,142,513
40101	248	0	DD	0	2,416	0	545	0
40102	3,436	52,656	395	6,782	42,168	658,188	7,273	118,777

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
40103	3,747	132,735	491	17,028	40,467	1,654,703	8,100	294,520
40201	1,642	21,618	200	2,748	19,086	266,194	3,696	47,153
40202	2,089	33,554	244	4,332	23,180	414,887	4,474	74,208
40203	DD	0	DD	0	DD	0	DD	0
40301	47,046	7,014,985	5,509	901,279	485,143	85,420,568	88,213	15,024,674
40302	49,174	6,099,329	5,761	780,606	520,747	74,794,926	93,763	13,124,375
40400	11,829	960,594	1,398	122,982	123,174	11,827,660	22,467	2,072,776
40500	144,994	9,173,088	17,247	1,238,977	1,568,784	133,114,319	281,680	26,305,695
40601	40,442	1,958,867	4,889	255,433	459,309	26,670,883	87,254	4,880,075
40602	DD	DD	72	DD	4,514	DD	929	DD
40700	15,010	358,999	1,770	45,939	168,331	4,409,656	30,242	776,861
40801	15,115	1,861,070	1,734	224,724	153,580	22,647,272	26,720	3,872,483
40802	55,142	2,011,746	6,547	251,232	597,119	24,478,177	107,393	4,265,856
40803	427	DD	55	DD	4,487	DD	777	DD
40900	20,330	447,897	2,602	55,317	235,317	5,279,309	44,010	897,296
41000	134,826	5,249,678	16,185	681,322	1,452,522	76,381,461	254,990	15,020,534
41100	25,190	529,567	3,228	67,137	296,066	6,523,134	54,355	1,138,768
41201	14,531	1,638,525	1,836	216,934	167,735	21,465,403	30,899	4,023,583
41202	DD	DD	DD	DD	DD	DD	DD	DD
41300	18,342	2,842,155	2,196	370,224	210,539	35,590,340	37,464	6,392,731
41401	5,185	422,230	662	55,357	63,814	5,410,544	12,441	979,053
41402	24,356	4,002,780	3,115	518,551	292,867	50,398,175	56,280	9,065,127
41501	3,399	919,048	428	119,629	39,242	11,570,689	7,395	2,042,569
41502	DD	DD	DD	DD	DD	DD	DD	DD
41503	11,785	1,881,638	1,468	244,342	144,981	23,900,040	27,094	4,244,266
50100	61,184	2,537,892	7,049	327,626	719,006	32,463,673	129,375	5,890,269
50200	34,242	759,384	4,010	96,970	396,086	9,437,704	74,063	1,679,828
50301	53,829	1,463,214	6,021	187,718	613,952	18,518,573	106,976	3,319,130
50302	27,109	364,240	3,213	45,009	304,733	4,603,154	56,685	800,477
50400	87,512	4,448,331	10,174	618,765	1,011,811	63,285,835	176,085	12,795,808
50500	33,417	584,201	4,181	76,128	383,285	7,332,012	73,347	1,419,027
50600	44,469	1,299,456	5,315	157,413	502,898	17,028,756	88,451	3,080,237
50701	1,458	DD	199	DD	16,007	DD	3,407	DD
50702	4,407	6,341	584	764	49,624	51,446	10,026	9,849
50800	61,089	2,722,317	7,177	389,459	666,551	46,236,150	116,967	10,517,217
50901	18,635	83,743	2,342	10,423	205,670	902,757	39,028	167,938
50902	41,747	657,896	4,979	79,334	464,616	8,639,391	83,399	1,560,673
51001	33,165	356,296	4,021	44,259	344,931	3,767,322	63,421	696,710
51002	34,348	386,734	4,287	47,391	367,591	3,851,701	67,475	730,711
51100	75,875	2,793,030	9,252	467,772	818,028	43,179,062	149,656	10,089,835
51201	130,174	9,210,748	15,801	1,250,394	1,436,352	155,910,503	257,832	33,009,782
51202	96,905	4,125,686	11,335	628,709	1,053,123	77,919,430	184,143	18,134,017
51301	51,312	1,186,712	6,672	201,243	533,099	17,246,676	105,774	4,150,503
51302	37,496	871,220	5,193	126,793	406,465	12,747,737	82,162	3,006,283
51401	48,520	1,073,913	5,901	155,931	521,112	14,037,455	94,549	2,990,676
51402	27,446	1,009,673	3,305	168,774	295,157	16,754,457	52,470	3,946,498
60101	52,793	1,126,859	7,038	174,559	517,715	15,312,870	107,506	3,457,706
60102	29,441	486,774	3,844	65,252	310,751	5,549,281	63,067	1,101,596
60200	19,123	1,059,414	2,509	218,722	195,165	19,627,119	39,544	5,280,906
60300	53,143	3,237,252	7,396	743,860	552,593	64,963,612	115,584	18,300,185
60400	28,061	1,000,937	3,828	187,949	305,490	16,087,861	63,210	4,110,460
70101	29,734	1,637,964	3,285	234,078	331,533	24,314,177	56,571	5,089,280
70102	74,463	7,145,612	8,268	1,086,183	802,444	116,336,495	135,535	25,784,111
70200	88,399	15,026,628	10,570	1,843,484	953,702	226,252,255	164,986	41,858,788
70300	34,753	1,681,852	3,943	226,256	402,960	22,996,188	70,633	4,404,116
70400	94,439	10,454,711	10,658	1,380,840	1,039,064	143,384,631	176,716	26,820,509
70500	41,996	5,116,896	4,727	703,629	470,202	71,504,729	81,881	13,902,838
70600	73,967	10,953,459	8,444	1,263,752	820,537	141,818,766	138,257	24,004,848
70700	75,856	7,365,720	8,696	942,104	825,293	93,082,427	147,755	16,494,490
70801	80,208	7,280,593	9,392	849,730	849,140	105,374,429	143,068	18,634,611

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
70802	107,051	12,863,309	12,715	1,515,814	1,185,899	190,613,227	202,492	34,029,617
70900	106,689	10,542,724	12,745	1,293,103	1,183,740	136,669,706	205,441	24,339,520
71000	78,638	13,699,315	9,713	1,731,896	819,583	223,251,345	146,950	45,313,811
71100	44,012	2,170,114	5,391	257,658	497,944	29,883,542	90,715	5,497,499
71200	57,933	3,905,049	7,473	510,725	644,806	56,703,331	116,717	11,208,826
71300	83,748	4,200,611	10,032	482,921	898,053	56,698,994	157,483	10,347,668
71401	55,768	954,281	6,497	114,210	590,510	11,027,683	105,710	2,056,956
71402	39,104	2,099,998	4,704	259,664	415,492	27,827,063	72,967	5,182,425
80101	1,388	47,308	196	9,791	15,022	830,724	2,724	223,345
80102	27,179	1,370,962	3,735	274,498	288,495	23,980,963	58,161	6,318,693
80201	106	DD	16	DD	1,072	DD	220	DD
80202	16,747	457,902	2,232	90,620	174,380	7,640,807	34,457	2,032,273
80203	11,258	224,309	1,592	33,560	117,154	2,476,122	23,560	608,754
80204	3,301	DD	447	DD	30,304	DD	6,347	DD
80301	DD	DD	DD	DD	DD	DD	1,052	DD
80302	14,360	252,888	2,005	33,250	148,590	2,532,826	31,050	553,267
80401	7,735	717,944	1,050	158,378	76,380	14,817,796	17,310	4,336,466
80402	11,539	1,994,778	1,580	501,700	125,487	43,152,800	25,877	12,476,270
80403	3,459	229,296	455	51,650	36,532	4,291,858	7,813	1,223,081
80500	7,506	143,652	1,022	17,440	68,131	957,321	14,298	216,920
80601	250	DD	34	DD	3,330	DD	639	DD
80602	7,810	448,129	1,103	85,945	82,391	8,559,396	17,231	2,275,932
80701	420	43,110	59	5,232	4,038	293,336	796	64,433
80702	9,854	806,721	1,329	130,086	100,825	12,216,564	21,694	2,792,583
80703	1,495	18,892	218	2,333	15,072	137,227	3,101	30,251
80801	12,460	114,748	1,681	13,970	121,958	827,423	26,093	180,913
80802	15,244	144,329	2,105	18,259	157,946	1,141,291	33,748	256,160
80901	0	DD	0	DD	0	DD	0	DD
80902	2,247	53,706	318	6,885	25,472	622,920	5,261	114,561
80903	2,812	DD	375	DD	26,470	DD	5,560	DD
90100	8,056	239,454	943	27,663	81,465	2,363,105	14,455	462,983
90201	23,458	2,085,461	2,747	308,974	245,176	34,029,622	42,003	7,542,316
90202	9,860	387,920	1,228	48,714	107,545	4,836,435	19,165	1,012,735
90203	14,229	588,926	1,713	79,592	152,389	7,950,571	27,845	1,731,160
90300	3,066	20,922	407	2,571	39,069	226,126	7,482	41,516
100100	DD	DD	DD	DD	DD	DD	DD	DD
100200	9,195	370,759	1,230	45,992	99,483	3,472,985	18,512	670,284
100301	9,280	314,795	1,227	36,856	95,740	3,632,144	17,771	669,463
100302	4,001	417,327	511	52,289	42,598	5,520,275	7,778	1,032,863
100401	4,102	139,068	495	16,170	49,192	1,124,511	8,894	221,186
100402	2,850	75,590	377	9,503	31,322	898,413	6,115	177,169
100500	7,323	193,744	946	23,967	80,911	1,838,030	14,948	370,090
100600	3,220	105,090	412	12,489	35,996	708,258	6,598	160,066
100700	12,985	635,774	1,722	66,386	140,043	5,572,235	26,773	925,938
100800	11,821	332,224	1,597	39,758	130,869	2,764,756	25,802	535,613
100901	2,342	DD	287	DD	23,734	286,981	4,561	63,621
100902	4,388	32,196	596	3,632	53,160	248,156	9,865	47,792
101000	4,252	472,344	510	55,513	48,375	3,425,768	8,768	715,583
101101	4,067	78,352	526	8,956	48,532	719,583	8,657	132,097
101102	4,109	95,400	465	9,360	46,687	963,771	7,730	146,532
101201	8,625	DD	1,121	DD	92,646	DD	17,806	DD
101202	3,728	192,421	458	23,065	43,295	1,531,665	7,812	310,038
101301	11,356	854,157	1,365	94,713	129,919	8,529,634	22,659	1,472,732
101302	9,701	470,993	1,106	56,516	107,788	5,110,579	18,449	911,985
101303	3,969	317,875	436	32,321	49,519	2,995,781	8,023	505,377
101401	9,420	1,148,914	1,091	124,421	106,772	14,530,119	17,938	2,537,510
101402	3,627	450,993	431	44,377	41,951	5,658,819	7,382	830,793
101500	7,144	2,077,664	843	196,267	80,136	22,159,668	14,712	3,245,471
101600	24,859	4,483,859	2,996	509,464	273,267	59,051,729	47,835	10,640,207
101701	20,523	3,330,498	2,439	368,012	243,986	43,541,742	41,397	7,890,860

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced as excreted for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
101702	42,660	11,366,700	5,220	1,266,566	491,739	151,002,730	83,511	25,780,559
101800	13,670	3,703,530	1,835	331,698	148,154	39,195,964	29,305	5,408,634
101900	68,127	11,578,975	8,995	1,237,179	734,060	139,405,014	139,463	22,433,739
102001	13,729	5,212,077	1,689	459,564	150,933	57,144,860	26,974	7,720,875
102002	15,072	2,327,112	1,919	236,286	162,573	29,561,282	30,174	4,907,329
102100	19,316	6,042,707	2,231	568,825	212,790	71,565,955	37,322	10,551,458
102200	23,061	9,236,007	2,754	879,507	278,108	108,956,591	47,958	16,673,693
102300	47,595	12,965,935	6,061	1,461,858	504,038	175,426,284	89,075	30,490,362
102400	59,494	4,924,434	7,152	562,332	641,377	65,399,402	113,905	12,069,523
102500	21,175	10,188,995	2,628	935,109	235,342	118,611,356	43,873	17,082,663
102600	24,502	5,649,623	3,248	510,149	274,011	61,058,558	51,270	8,395,506
102701	31,230	980,296	3,865	105,973	343,242	11,362,786	63,607	1,895,629
102702	29,012	5,510,315	3,671	566,791	337,162	68,497,024	60,511	11,126,732
102801	30,492	3,391,738	3,701	396,087	337,714	51,836,794	61,272	9,254,843
102802	13,276	369,710	1,628	42,077	140,874	4,151,678	26,011	767,513
102901	84,750	2,704,595	10,644	385,410	915,020	41,348,485	175,994	9,353,664
102902	18,462	723,612	2,236	97,805	213,787	9,979,099	39,316	1,972,851
103001	52,884	2,345,115	6,503	368,251	588,019	38,321,767	108,981	9,165,883
103002	9,375	223,906	1,086	26,595	107,874	3,172,286	18,728	569,633
110100	72,540	4,674,661	9,346	1,037,479	750,204	99,960,810	148,219	27,910,220
110200	32,906	2,336,865	4,427	216,200	345,685	24,781,680	67,808	3,708,810
110300	39,205	18,096,623	5,133	1,637,448	406,932	200,360,790	77,663	27,628,657
110400	5,936	9,806,102	806	907,231	63,171	113,342,152	12,511	16,071,432
110500	19,542	2,024,935	2,484	212,856	215,986	25,950,846	42,365	4,344,185
110600	16,128	569,686	2,051	62,468	179,966	5,028,409	34,895	913,129
110701	32,319	572,952	4,180	67,872	340,088	5,912,803	66,545	1,128,306
110702	67,991	4,617,802	8,497	873,217	727,233	84,122,784	138,872	21,774,539
110800	4,968	34,659	679	4,027	51,729	255,721	10,189	51,540
110901	3,279	4,621,479	435	423,097	34,641	51,652,822	7,075	7,034,779
110902	30,344	DD	3,955	DD	331,981	DD	65,038	1,515,024
111001	4,180	10,795,132	550	993,349	42,923	134,236,128	8,589	19,116,770
111002	2,650	2,974,442	316	301,940	27,407	42,013,829	5,609	6,814,744
111003	34,472	479,722	4,425	55,669	373,599	5,844,053	74,692	1,110,055
111101	45,273	2,799,977	5,891	638,604	459,406	58,503,570	93,262	16,575,492
111102	26,592	3,151,458	3,523	729,336	251,815	66,662,855	52,983	18,858,684
111201	6,253	11,683,748	816	1,048,891	65,348	129,512,574	12,796	17,346,361
111202	1,336	DD	185	38,460	14,209	DD	2,779	637,829
111203	6,287	1,481,372	785	126,738	67,073	16,279,112	12,872	2,107,604
111301	4,045	153,806	508	18,869	45,192	1,388,909	8,612	276,240
111302	24,398	635,655	3,038	79,225	250,963	7,236,112	49,137	1,297,697
111303	25,448	1,065,135	3,277	111,625	288,032	12,082,726	55,920	1,993,873
111401	44,725	2,416,219	5,871	509,931	461,076	43,882,186	92,551	12,088,087
111402	9,763	955,702	1,309	224,343	97,037	19,082,590	20,539	5,476,873
111403	35,712	2,542,209	4,719	485,140	346,910	43,322,133	69,456	10,951,631
120100	52,912	2,287,920	6,975	482,711	533,419	42,146,365	106,225	11,267,845
120200	44,027	1,668,442	5,716	374,055	449,006	32,322,342	88,313	8,958,828
120301	118,303	950,490	15,853	133,034	1,141,572	12,119,740	230,202	2,788,442
120302	28,458	340,279	3,634	54,754	285,970	4,628,130	56,673	1,122,979
120401	24,801	145,783	3,352	20,693	248,112	1,576,016	49,928	373,821
120402	16,034	76,316	2,136	9,265	163,283	535,547	33,814	114,610
120500	17,266	14,819,490	2,421	1,551,266	182,849	170,282,699	35,840	25,823,218
120601	10,032	428,912	1,327	46,194	106,857	3,528,376	20,605	623,938
120602	45,785	2,004,624	6,027	272,899	470,383	26,622,048	91,274	5,258,311
120701	43,082	877,881	5,562	150,963	422,823	12,624,414	84,101	3,298,493
120702	32,161	1,475,903	4,313	216,046	345,940	21,697,158	66,813	4,585,777
120800	16,435	939,854	2,368	112,849	179,993	10,528,519	35,083	1,828,232
120901	14,973	827,225	2,211	95,158	188,090	9,710,817	34,932	1,611,595
120902	15,197	109,442	2,176	14,666	190,467	1,227,469	36,006	211,231
120903	18,696	142,813	2,399	17,804	186,170	1,491,775	37,573	321,006
120904	7,994	DD	1,071	DD	76,617	DD	15,659	DD

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
121001	10,742	226,857	1,304	39,911	105,754	4,044,979	19,868	1,158,089
121002	23,777	1,078,542	3,201	225,193	258,872	22,692,110	52,609	6,364,143
121003	25,701	246,221	3,348	27,499	257,704	2,389,329	51,890	429,224
121004	9,010	186,657	1,161	19,252	89,477	1,603,082	18,042	269,026
121101	21,964	717,809	2,975	68,575	226,621	7,370,242	44,463	1,081,057
121102	22,153	466,806	2,967	41,796	217,136	4,787,216	43,506	656,904
130100	7,896	176,842	1,058	21,802	81,770	1,392,573	15,803	294,983
130201	10,825	50,933	1,493	6,250	96,837	370,955	19,988	81,602
130202	50,699	814,516	7,579	104,208	520,337	9,418,518	99,941	1,692,900
130301	8,111	DD	1,217	DD	83,267	14,449,749	16,370	DD
130302	1,739	668,794	241	85,782	17,682	8,009,955	3,518	1,406,492
130401	4,536	DD	694	DD	48,601	DD	9,300	DD
130402	1,776	DD	242	1,321	18,955	DD	3,816	DD
130403	832	2,303	134	349	12,289	25,454	2,176	4,747
130500	5,804	244,147	878	34,456	65,673	3,578,352	12,648	759,985
130600	8,466	2,878,826	1,188	375,054	85,183	36,235,169	17,199	6,375,888
130700	3,358	239,637	502	30,731	37,140	2,851,683	7,266	515,510
130800	3,706	DD	487	DD	39,596	DD	7,411	DD
130900	2,723	DD	336	DD	23,076	DD	4,914	DD
140100	18,233	182,250	2,437	24,766	173,877	1,967,527	33,992	DD
140200	15,051	235,265	1,986	30,957	147,864	2,488,915	29,218	566,149
140300	9,583	146,271	1,345	17,452	106,372	1,117,484	19,619	221,508
140401	4,139	35,308	523	4,103	43,081	323,131	8,077	55,504
140402	758	3,245	104	325	7,915	29,543	1,444	4,747
140500	5,548	72,711	761	9,446	62,592	626,745	12,110	124,134
140600	18,326	245,195	2,340	32,764	187,940	2,858,492	34,327	585,310
140700	9,085	141,621	1,283	21,284	92,036	1,826,727	17,768	DD
140801	72,354	338,298	11,082	41,316	781,343	2,746,034	146,406	541,042
140802	76,016	170,303	12,433	22,788	889,720	1,453,886	161,685	296,521
150100	22,577	227,941	3,297	27,781	226,344	1,783,675	43,369	371,606
150200	213,189	872,215	33,768	110,414	2,372,710	DD	440,271	DD
150301	4,922	71,847	696	10,895	49,441	DD	9,769	145,488
150302	2,579	50,716	325	6,156	22,278	329,991	4,546	73,076
150400	9,376	159,713	1,344	19,446	90,425	1,192,577	18,014	255,763
150501	8,835	1,648,237	1,255	212,687	87,096	19,291,770	17,112	3,407,761
150502	6,678	DD	937	DD	68,201	DD	13,621	DD
150503	9,106	3,220,581	1,330	331,064	94,967	36,836,371	18,509	5,436,790
150601	24,976	286,360	3,788	37,508	259,688	3,231,270	49,419	588,375
150602	11,284	76,377	1,656	9,621	111,631	540,497	21,786	115,198
150701	10,393	2,306,082	1,520	308,158	97,067	29,857,826	19,081	5,623,945
150702	1,446	DD	207	DD	14,146	DD	2,970	DD
150801	347	DD	61	DD	4,457	DD	804	DD
150802	0	0	0	0	0	0	0	0
150803	2,257	6,369	310	778	23,791	50,248	5,074	9,618
160101	1,983	69,630	227	8,305	19,156	516,698	3,349	102,132
160102	19,894	1,261,354	2,460	166,681	190,859	15,947,332	34,280	3,084,470
160201	13,830	250,327	1,836	31,397	130,051	2,875,877	24,284	505,065
160202	27,020	598,370	3,642	80,906	271,344	8,201,775	50,900	1,656,047
160203	14,364	628,029	1,900	78,656	150,815	8,102,674	28,062	1,545,593
160300	17,908	2,684,040	2,417	356,782	177,131	43,496,246	33,809	8,694,444
160401	3,017	162,919	433	17,787	32,226	1,294,785	6,191	236,222
160402	2,376	DD	335	DD	25,895	DD	4,955	DD
160501	3,426	61,432	507	7,469	34,051	544,331	6,562	101,427
160502	4,162	410,654	590	53,231	38,660	4,718,431	7,670	834,189
160503	3,043	DD	442	DD	31,006	1,068,248	5,938	DD
160600	8,502	318,816	1,244	40,059	86,019	2,859,763	16,302	560,962
170101	2,933	13,850	381	1,748	34,094	127,572	6,490	24,588
170102	29,411	234,166	3,900	29,055	306,964	2,246,248	58,571	426,101
170103	15,516	91,240	2,075	11,474	175,913	948,424	33,358	173,755
170200	27,096	2,903,522	3,538	335,693	293,085	35,021,281	55,717	6,184,105

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S3. Quantity of Manure and Manure Nutrients Produced *as excreted* for Confined Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
170300	19,459	2,899,704	2,660	370,011	203,671	35,080,956	40,251	6,093,126
170401	3,856	81,789	524	9,976	36,623	858,546	7,072	156,017
170402	48,352	15,181,353	6,156	1,887,438	473,792	179,351,572	88,061	31,041,742
170501	52,599	6,402,853	6,860	744,587	527,651	71,306,482	98,891	11,826,754
170502	5,083	69,971	619	7,784	48,014	637,189	9,020	112,836
170601	13,134	242,915	1,686	28,295	133,889	2,359,279	25,706	427,638
170602	3,813	56,031	506	6,754	37,773	465,131	7,111	91,448
170603	5,486	39,530	703	4,455	54,485	320,003	10,199	59,627
170701	20,090	2,481,332	2,642	269,854	209,739	27,754,236	40,806	4,355,576
170702	3,323	69,022	409	7,374	37,565	581,089	6,672	101,757
170703	16,993	168,184	2,191	19,212	164,638	1,422,622	31,157	270,342
170800	15,505	576,380	1,995	99,321	173,223	8,905,205	34,928	2,050,781
170900	68,647	1,641,737	9,019	248,280	739,498	24,275,845	144,757	5,260,313
171001	8,526	352,678	1,129	54,635	99,816	5,835,378	21,000	1,379,185
171002	6,867	824,789	927	106,965	84,037	10,446,742	17,120	1,861,659
171003	27,181	216,151	3,688	28,104	291,093	2,534,703	56,867	502,975
171100	44,763	2,829,673	5,944	377,482	523,251	36,719,557	105,653	6,849,859
171200	4,438	125,558	565	15,064	42,424	879,975	7,754	189,987
180101	16,533	1,562,004	2,377	222,835	185,618	22,063,550	37,827	4,454,380
180102	11,068	352,055	1,463	42,094	114,961	3,633,142	21,882	661,130
180200	4,563	DD	590	DD	49,880	255,601	9,415	53,853
180201	56,137	1,783,809	8,115	230,593	639,850	21,197,165	125,609	3,784,503
180300	30,248	32,271,556	4,319	4,244,762	302,396	403,539,455	60,295	72,922,294
180400	44,972	22,907,159	6,496	3,244,388	481,025	312,581,903	93,224	61,344,387
180500	11,663	451,837	1,768	60,825	137,274	5,762,445	27,900	1,085,069
180600	21,935	384,845	3,166	51,596	232,099	4,713,107	46,829	947,140
180701	22,705	106,821	3,417	15,639	229,289	1,162,922	44,494	224,276
180702	26,682	4,349,887	4,030	594,710	271,010	58,586,936	52,606	11,496,707
180703	28,229	592,008	4,281	90,826	293,465	9,514,115	58,699	2,231,131
180800	4,413	DD	607	DD	43,602	116,143	8,414	23,670
180901	670	DD	87	DD	5,627	DD	1,178	DD
180902	12,061	1,116,492	1,850	150,349	128,785	14,494,598	25,608	2,657,068
181001	3,130	DD	468	DD	32,720	DD	6,257	DD
181002	5,223	3,650,903	802	335,275	61,510	40,580,996	12,663	5,491,266
190101	0	0	0	0	0	0	0	0
190102	DD	0	DD	0	DD	0	DD	0
190103	DD	0	DD	0	DD	0	DD	0
190104	0	0	0	0	0	0	0	0
190201	DD	DD	DD	DD	DD	DD	DD	DD
190202	DD	0	DD	0	DD	0	DD	0
190203	883	944	110	108	11,193	10,335	2,035	1,622
190204	296	DD	43	DD	3,357	DD	692	DD
190205	920	11,651	129	1,591	10,707	151,830	2,363	28,999
190206	DD	0	DD	0	DD	0	DD	0
190207	DD	DD	DD	DD	DD	DD	DD	DD
190301	0	0	0	0	0	0	0	0
190303	0	0	0	0	0	0	0	0
190305	0	0	0	0	0	0	0	0
190401	DD	DD	DD	DD	237	DD	DD	DD
190403	DD	0	DD	0	DD	0	DD	0
190404	166	DD	DD	DD	2,095	DD	402	DD
190405	986	4,896	132	612	12,031	55,564	2,381	10,135
190406	0	0	0	0	0	0	0	0
190408	0	0	0	0	0	0	0	0
190501	0	0	0	0	0	0	0	0
200100	6,728	60,564	916	7,888	84,188	735,771	17,181	140,542
200200	1,787	DD	246	DD	25,067	DD	4,956	DD
200400	DD	0	DD	0	DD	0	DD	0
200500	701	DD	87	DD	9,189	DD	1,714	DD
200600	2,089	49,716	293	7,915	28,088	1,010,457	5,514	DD
200700	1,777	DD	218	DD	18,272	DD	3,490	DD
200800	0	DD	0	DD	0	DD	0	DD

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
10100	27,498	9,351	5,209	1,451	337,116	112,253	120,919	46,555
10200	43,826	20,940	9,109	3,289	542,948	251,521	179,050	103,547
10300	71,517	39,905	14,463	6,257	884,219	480,206	298,985	197,535
10400	46,428	18,393	8,696	2,881	574,286	221,648	205,905	91,110
10500	39,931	5,571	8,397	913	518,886	70,333	161,793	26,945
10600	100,187	19,402	23,281	3,532	1,257,046	233,141	367,656	87,696
10700	135,634	17,146	31,945	2,851	1,691,458	210,825	490,317	82,163
10801	138,596	88,428	29,410	14,009	1,751,706	1,065,971	556,391	435,321
10802	184,914	30,658	41,738	4,898	2,324,414	373,386	699,610	150,271
10900	156,692	19,674	36,714	3,500	1,947,969	238,169	569,621	90,340
11000	185,637	74,965	41,480	12,193	2,290,112	905,982	708,952	363,661
11100	19,739	46,288	3,825	7,261	251,157	555,537	85,463	229,057
20100	247,316	290,469	50,799	45,860	3,063,688	3,492,587	1,020,675	1,432,461
20200	562,016	294,666	118,188	46,732	6,997,076	3,555,874	2,273,077	1,449,768
20301	146,497	10,127	35,917	1,945	1,830,277	126,551	505,561	44,120
20302	13,461	DD	3,868	DD	164,539	DD	36,740	DD
20401	296,976	87,787	63,548	13,961	3,710,425	1,059,833	1,182,629	431,258
20402	378,278	170,173	89,005	28,226	4,694,828	2,048,830	1,368,717	816,119
20403	65,897	DD	17,864	DD	815,386	DD	198,227	DD
20501	792,292	474,573	147,649	75,030	9,777,805	5,710,255	3,526,308	2,338,687
20502	260,035	157,980	49,260	26,599	3,218,508	1,902,526	1,143,832	750,918
20503	998,433	943,341	197,508	161,815	12,423,712	11,392,996	4,250,223	4,433,481
20600	388,394	89,206	83,531	14,881	4,819,990	1,080,467	1,539,073	426,462
20700	3,579,838	1,226,597	616,750	192,550	43,543,939	14,807,439	16,782,678	6,068,700
20801	1,201,879	161,120	204,848	25,080	14,527,843	1,938,690	5,671,100	800,690
20802	2,024,959	212,073	334,965	32,969	24,497,075	2,554,397	9,728,280	1,054,655
30101	2,458,793	237,535	398,837	37,043	29,686,245	2,853,080	11,946,141	1,179,213
30102	465,039	58,694	79,987	9,315	5,657,244	711,381	2,182,417	288,715
30201	329,819	39,771	56,347	6,441	4,042,625	479,051	1,554,734	193,384
30202	381,102	107,369	70,303	17,127	4,670,196	1,304,430	1,707,993	526,694
30300	1,078,902	487,954	186,119	76,418	13,157,303	5,875,602	5,054,347	2,417,068
30401	1,763,278	413,758	296,410	64,796	21,401,517	4,974,473	8,391,444	2,049,487
30402	740,386	127,339	127,419	20,257	9,006,148	1,540,366	3,473,360	625,498
30501	2,341,749	303,466	401,925	47,507	28,394,417	3,647,188	11,003,126	1,503,445
30502	480,484	73,571	87,237	11,686	5,852,658	884,086	2,176,753	361,621
30601	2,133,336	464,782	353,591	72,501	25,808,124	5,586,471	10,237,047	2,307,066
30602	519,895	66,381	84,428	10,284	6,295,918	797,751	2,524,545	330,700
30701	1,919,160	296,878	323,887	46,265	23,257,513	3,568,244	9,111,134	1,474,392
30702	461,402	97,473	76,267	15,294	5,604,083	1,171,841	2,217,923	482,317
30801	2,735,152	33,939	476,459	6,719	32,970,712	407,375	12,729,628	144,183
30802	274,646	DD	44,578	DD	3,308,324	DD	1,333,800	DD
30901	2,575,325	147,124	402,159	22,766	30,930,545	1,765,487	12,775,545	733,377
30902	1,796,052	24,657	294,567	4,436	21,610,348	299,633	8,670,177	112,388
31001	2,098,717	59,598	329,333	9,226	25,201,983	715,171	10,383,892	297,022
31002	2,200,233	72,365	365,282	11,572	26,487,577	877,473	10,546,098	354,466
31101	779,073	22,039	127,155	3,451	9,380,175	264,475	3,771,491	109,165
31102	1,956,380	296,664	320,085	46,213	23,630,104	3,566,732	9,458,551	1,473,652
31200	357,955	21,899	60,211	3,415	4,347,821	262,884	1,702,901	108,723
31300	2,947,601	281,370	486,372	44,265	35,558,042	3,387,705	14,180,191	1,390,358
31401	542,423	DD	93,552	DD	6,560,372	DD	2,540,726	DD
31402	1,265,825	194,382	203,556	30,382	15,260,063	2,334,965	6,179,935	963,813
31403	612,484	125,989	99,301	20,017	7,388,833	1,512,093	2,976,540	619,155
31501	2,880,588	386,672	484,188	61,053	34,814,276	4,647,774	13,707,540	1,906,807
31502	1,464,624	87,948	237,009	13,582	17,653,454	1,055,439	7,125,174	438,864
31601	3,170,877	458,122	523,068	73,451	38,234,680	5,504,845	15,256,581	2,240,119
31602	605,774	31,375	99,667	4,898	7,312,162	376,521	2,919,227	155,665
31700	1,905,284	309,543	314,494	48,956	22,985,523	3,715,704	9,163,995	1,525,005
31800	1,952,327	362,485	322,541	57,502	23,498,117	4,358,316	9,384,743	1,782,985
40101	2,139	0	388	0	25,719	0	9,688	0
40102	85,937	10,255	16,057	1,640	1,038,861	123,530	381,477	50,217

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
40103	117,780	38,572	20,678	6,011	1,429,478	463,970	545,550	191,563
40201	27,422	DD	5,139	DD	334,100	DD	121,507	DD
40202	20,251	5,209	3,846	812	259,380	62,512	89,026	25,863
40203	DD	0	DD	0	DD	0	DD	0
40301	408,663	397,248	77,535	61,869	4,981,490	4,773,879	1,794,591	1,973,491
40302	329,708	394,237	63,486	63,282	4,040,187	4,750,206	1,432,279	1,926,650
40400	73,439	66,796	16,759	10,393	905,996	802,606	274,516	331,998
40500	1,058,182	548,005	224,471	93,952	13,096,433	6,634,744	4,245,732	2,576,543
40601	404,486	135,066	80,832	22,460	4,967,942	1,628,058	1,707,081	646,795
40602	1,650	1,707	350	263	21,144	20,483	6,633	8,534
40700	192,520	48,257	36,021	7,770	2,332,063	580,743	853,850	235,422
40801	97,684	54,658	19,010	8,788	1,204,910	661,325	421,035	266,902
40802	400,720	111,759	82,239	18,235	4,918,174	1,342,698	1,654,365	541,077
40803	6,893	DD	1,247	DD	84,669	DD	31,309	DD
40900	182,175	29,714	42,906	4,810	2,235,501	365,084	658,115	144,615
41000	482,158	182,023	101,504	30,781	6,054,958	2,213,838	1,948,912	863,195
41100	190,798	47,396	44,199	8,388	2,341,927	570,799	701,840	218,335
41201	156,090	148,490	31,895	23,293	1,927,032	1,784,247	646,931	734,842
41202	DD	DD	DD	DD	DD	DD	DD	DD
41300	258,422	202,226	49,715	31,874	3,173,426	2,431,007	1,123,458	998,214
41401	75,713	34,558	14,395	5,470	921,043	418,289	331,940	170,231
41402	323,001	308,552	64,962	49,595	4,004,206	3,730,622	1,356,632	1,506,921
41501	48,903	64,381	9,089	10,104	593,819	773,042	217,951	318,513
41502	DD	DD	DD	DD	DD	DD	DD	DD
41503	178,365	197,476	32,320	31,316	2,182,952	2,373,529	809,288	971,505
50100	762,185	319,459	147,598	52,063	9,344,628	3,845,298	3,296,818	1,547,795
50200	1,272,136	103,890	218,148	17,108	15,507,420	1,256,521	5,981,747	500,427
50301	982,052	176,299	179,213	28,582	12,016,658	2,126,474	4,434,237	856,784
50302	1,123,698	79,739	193,038	12,503	13,645,813	959,250	5,277,235	394,721
50400	1,674,545	600,539	302,214	102,570	20,606,244	7,293,643	7,619,955	2,830,459
50500	3,258,733	210,495	530,177	32,938	39,443,837	2,534,892	15,807,034	1,043,157
50600	583,131	122,785	107,513	19,699	7,198,204	1,494,140	2,615,114	600,425
50701	56,450	0	10,045	0	687,677	0	259,217	0
50702	176,312	DD	30,790	DD	2,170,499	DD	819,860	DD
50800	549,936	158,605	103,512	25,385	6,778,636	1,932,518	2,430,033	776,655
50901	736,005	30,088	127,153	4,762	8,927,133	361,506	3,444,164	148,177
50902	1,199,491	112,762	208,706	17,625	14,533,130	1,357,643	5,587,632	559,144
51001	3,004,181	114,734	500,153	18,006	36,179,968	1,380,532	14,375,898	567,672
51002	3,613,330	106,356	623,828	17,677	43,556,081	1,288,090	16,912,235	509,543
51100	6,465,741	480,366	1,042,828	75,424	77,903,911	5,776,907	31,513,637	2,376,085
51201	1,245,543	409,765	223,912	65,265	15,231,421	4,943,193	5,681,498	2,011,283
51202	1,377,757	272,583	243,174	43,691	16,787,163	3,278,862	6,360,539	1,333,134
51301	5,117,708	251,561	826,627	39,554	61,764,706	3,028,826	24,924,034	1,243,413
51302	3,810,580	117,759	629,713	19,334	46,053,090	1,415,209	18,316,805	568,092
51401	3,273,922	286,185	543,392	44,686	39,477,656	3,446,989	15,695,757	1,419,899
51402	1,209,362	150,405	199,459	23,469	14,599,422	1,811,686	5,819,683	746,492
60101	4,574,719	226,976	750,178	36,136	55,365,440	2,737,963	22,089,897	1,114,341
60102	3,003,357	72,150	490,318	11,559	36,258,625	868,018	14,538,284	352,968
60200	1,611,731	131,838	266,191	21,002	19,413,877	1,591,726	7,749,088	647,072
60300	4,737,382	538,800	781,897	85,557	57,271,957	6,477,586	22,788,608	2,648,774
60400	3,078,680	132,612	508,509	20,879	37,195,073	1,593,445	14,802,858	654,970
70101	1,047,157	277,790	177,512	43,554	12,653,615	3,345,958	4,957,424	1,375,194
70102	806,376	490,416	149,091	76,985	9,845,908	5,900,893	3,607,741	2,426,123
70200	1,361,623	544,136	227,624	85,617	16,694,131	6,601,105	6,503,745	2,689,192
70300	697,099	237,573	126,680	37,262	8,497,661	2,856,718	3,156,248	1,175,817
70400	1,362,877	1,149,383	243,119	181,503	16,655,932	13,845,135	6,248,696	5,667,985
70500	708,558	553,529	126,886	87,842	8,608,342	6,655,994	3,239,692	2,722,125
70600	1,712,560	1,592,160	280,668	249,092	20,776,515	19,200,896	8,272,869	7,891,466
70700	1,175,590	876,656	211,215	140,202	14,330,381	10,545,859	5,363,881	4,292,812
70801	1,383,043	652,767	228,820	102,826	16,848,050	7,913,110	6,645,246	3,223,990

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
70802	1,306,497	837,937	219,186	134,318	15,957,693	10,182,696	6,226,402	4,099,296
70900	1,084,613	866,832	203,087	135,572	13,305,304	10,443,231	4,809,928	4,296,998
71000	2,180,989	650,383	355,699	101,752	26,450,064	7,834,201	10,565,189	3,223,466
71100	3,072,263	568,361	492,625	90,181	37,093,715	6,871,780	15,024,176	2,795,790
71200	461,438	196,366	96,673	32,165	5,646,616	2,359,527	1,871,207	948,569
71300	1,529,201	463,644	255,248	72,553	18,503,844	5,575,922	7,307,621	2,297,548
71401	2,908,388	375,749	472,569	58,619	35,046,889	4,520,059	14,115,937	1,865,073
71402	473,698	150,540	82,937	23,886	5,754,347	1,810,326	2,198,067	740,380
80101	61,995	4,539	11,026	701	751,723	54,470	284,735	22,650
80102	2,056,652	84,604	343,825	13,423	24,824,308	1,017,080	9,818,192	416,114
80201	DD	0	DD	0	DD	0	DD	0
80202	585,403	41,613	97,921	6,459	7,069,732	501,397	2,793,753	207,129
80203	542,073	25,572	90,375	4,111	6,539,965	307,102	2,591,957	124,860
80204	135,715	DD	22,362	DD	1,634,936	DD	653,409	DD
80301	DD	0	DD	0	DD	0	DD	0
80302	1,651,103	15,897	269,584	2,496	19,864,116	190,979	7,991,030	78,625
80401	1,139,189	234,345	183,017	36,667	13,700,699	2,812,433	5,564,233	1,161,280
80402	968,941	184,000	161,561	29,383	11,677,080	2,210,318	4,632,578	901,723
80403	476,062	16,454	77,221	2,611	5,730,073	197,450	2,312,745	80,913
80500	885,089	DD	140,110	DD	10,635,022	DD	4,358,483	DD
80601	16,465	DD	2,961	DD	199,379	DD	75,066	DD
80602	1,130,671	25,891	184,838	4,057	13,589,896	310,810	5,468,196	128,210
80701	57,652	DD	9,359	DD	693,057	DD	279,943	DD
80702	1,224,470	77,385	200,849	12,154	14,737,254	932,238	5,910,550	382,738
80703	183,675	0	29,146	0	2,207,527	0	903,289	0
80801	1,035,617	DD	170,723	DD	12,466,447	DD	4,984,485	DD
80802	1,823,458	DD	299,506	DD	21,946,799	DD	8,794,991	DD
80901	DD	DD	DD	DD	DD	DD	DD	DD
80902	141,333	2,874	25,848	442	1,701,904	34,493	636,835	14,372
80903	313,321	DD	50,377	DD	3,767,596	DD	1,529,688	DD
90100	1,672,777	81,182	265,971	12,781	20,136,465	975,599	8,217,892	400,969
90201	1,054,831	234,912	171,483	36,812	12,756,120	2,831,427	5,118,724	1,163,287
90202	1,384,060	129,217	220,521	20,157	16,684,492	1,552,459	6,792,043	641,383
90203	1,094,185	99,746	177,810	15,529	13,199,554	1,197,572	5,310,477	495,615
90300	114,951	9,371	20,234	1,482	1,389,461	112,457	531,478	46,167
100100	56,353	0	10,278	0	678,049	0	254,399	0
100200	2,633,663	140,174	422,096	21,868	31,824,986	1,687,622	12,883,094	695,783
100301	2,112,481	78,646	337,744	12,238	25,544,828	950,707	10,347,864	390,959
100302	1,517,359	77,033	243,038	12,648	18,297,525	951,611	7,424,493	371,955
100401	2,236,019	80,467	351,954	12,750	27,123,211	983,844	11,048,494	396,269
100402	1,871,630	50,773	296,726	8,201	22,831,034	636,620	9,213,424	247,576
100500	2,697,545	59,947	424,364	9,730	32,491,639	760,563	13,329,946	291,640
100600	1,528,164	DD	241,718	DD	18,516,720	DD	7,530,490	DD
100700	2,385,998	228,883	392,137	35,557	28,864,008	2,755,296	11,506,211	1,138,669
100800	3,306,080	123,617	548,579	19,920	40,296,670	1,537,556	15,858,134	603,431
100901	996,762	16,847	160,705	2,617	12,040,931	202,268	4,859,548	83,803
100902	2,419,075	63,711	391,883	10,087	29,778,633	766,381	11,769,386	313,712
101000	3,070,233	208,627	482,966	32,271	36,991,613	2,507,396	15,172,201	1,040,206
101101	1,125,553	69,413	178,770	10,763	13,529,584	833,412	5,532,552	345,644
101102	2,083,228	109,625	330,775	17,046	25,469,757	1,325,634	10,247,252	545,179
101201	3,636,713	209,962	585,058	33,625	44,194,110	2,603,220	17,755,424	1,028,367
101202	1,768,129	74,398	288,467	11,662	21,787,983	897,817	8,567,996	368,386
101301	5,072,630	477,757	799,385	73,946	61,036,977	5,736,242	25,042,047	2,381,250
101302	3,512,825	278,241	552,250	43,087	42,344,324	3,341,510	17,365,378	1,386,455
101303	3,074,280	245,371	489,500	38,247	37,583,056	2,973,406	15,098,864	1,218,762
101401	3,232,467	744,824	507,964	115,260	39,008,002	8,955,679	15,983,624	3,712,905
101402	3,349,520	314,661	528,746	49,295	40,224,165	3,781,588	16,519,159	1,558,303
101500	5,751,110	669,218	897,090	104,148	69,145,732	8,066,938	28,547,729	3,326,271
101600	7,095,208	1,719,596	1,113,899	266,159	85,825,554	20,706,843	35,104,701	8,571,567
101701	1,844,475	929,399	291,484	144,285	22,327,885	11,228,710	9,093,464	4,625,842

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
101702	1,898,287	1,083,771	306,864	168,689	23,115,923	13,100,998	9,243,439	5,386,816
101800	5,733,919	667,108	914,393	103,845	69,375,534	8,023,557	28,127,757	3,315,120
101900	3,663,899	721,966	621,873	114,874	44,341,823	8,916,544	17,333,242	3,548,384
102001	2,153,767	387,239	339,151	60,173	25,956,692	4,655,783	10,637,415	1,926,126
102002	563,272	178,508	91,906	27,712	6,803,373	2,144,678	2,727,538	888,331
102100	7,057,671	1,410,725	1,101,947	218,964	84,804,528	16,941,220	35,014,744	7,020,934
102200	2,360,131	993,913	370,799	153,864	28,405,104	11,940,079	11,670,562	4,953,482
102300	1,101,429	596,827	179,952	93,862	13,371,679	7,246,417	5,330,317	2,950,453
102400	3,732,012	791,990	594,088	123,223	45,024,443	9,524,908	18,323,735	3,936,745
102500	6,362,075	1,152,338	994,084	178,953	76,539,819	13,883,492	31,552,290	5,733,981
102600	5,397,442	869,005	845,542	134,568	64,947,743	10,447,638	26,731,237	4,330,386
102701	2,494,175	320,189	401,054	49,505	30,012,058	3,845,732	12,176,708	1,596,819
102702	2,527,055	632,648	397,999	98,624	30,438,051	7,654,339	12,479,718	3,142,026
102801	4,292,892	514,716	676,203	80,422	51,677,438	6,188,401	21,198,212	2,552,696
102802	1,681,269	161,501	266,115	25,089	20,236,532	1,941,248	8,280,124	803,417
102901	10,048,548	970,584	1,601,262	152,077	120,943,042	11,683,118	49,305,087	4,806,445
102902	2,001,961	221,262	319,246	34,592	24,111,171	2,660,620	9,819,308	1,096,984
103001	4,672,704	694,508	749,380	108,621	56,248,464	8,345,914	22,846,323	3,442,483
103002	430,728	86,708	70,418	13,360	5,189,720	1,040,550	2,083,201	433,186
110100	9,880,827	1,074,648	1,583,179	168,774	119,046,416	12,928,128	48,336,502	5,315,024
110200	3,361,269	278,743	548,610	43,454	40,528,850	3,354,965	16,272,530	1,384,138
110300	5,360,682	927,650	848,589	144,369	64,606,190	11,152,065	26,400,537	4,610,345
110400	1,704,630	272,618	266,731	42,405	20,477,481	3,271,443	8,447,123	1,355,184
110500	4,294,806	216,726	678,995	33,698	51,737,921	2,603,706	21,165,725	1,077,606
110600	4,333,055	187,107	681,387	29,115	52,174,286	2,248,689	21,416,157	929,972
110701	4,906,492	362,680	792,290	56,202	59,075,081	4,353,136	23,897,299	1,806,516
110702	8,967,541	1,100,727	1,423,685	171,452	107,976,637	13,225,910	44,092,028	5,467,932
110800	1,424,160	DD	226,626	DD	17,115,974	DD	6,992,994	DD
110901	2,093,231	302,671	330,959	47,029	25,137,194	3,632,266	10,314,419	1,505,457
110902	3,416,937	180,929	549,144	28,293	41,160,311	2,172,206	16,687,151	896,862
111001	1,977,582	114,977	311,479	18,104	23,752,345	1,380,714	9,764,954	567,822
111002	1,352,817	DD	211,439	DD	16,244,873	DD	6,707,793	DD
111003	3,808,651	93,881	615,563	14,784	45,882,174	1,131,571	18,541,175	463,677
111101	4,540,546	545,253	733,899	85,588	54,712,656	6,562,328	22,103,562	2,697,516
111102	2,872,397	570,014	463,025	89,363	34,569,417	6,843,867	14,003,627	2,821,698
111201	2,462,542	299,385	387,406	46,466	29,607,392	3,597,241	12,167,782	1,490,061
111202	682,864	9,437	107,174	1,557	8,202,330	118,994	3,378,353	45,469
111203	1,907,450	56,992	299,051	8,895	22,928,602	687,413	9,442,438	282,851
111301	1,580,532	20,072	247,749	3,108	19,013,816	240,864	7,825,103	100,015
111302	6,084,374	181,799	965,739	28,590	73,201,605	2,181,718	29,918,830	898,415
111303	5,679,826	204,688	897,696	31,808	68,413,009	2,457,812	27,995,818	1,018,051
111401	6,803,960	648,429	1,090,499	101,616	81,929,671	7,788,780	33,278,598	3,210,598
111402	1,758,310	210,601	285,337	33,139	21,142,302	2,527,955	8,539,570	1,040,427
111403	3,800,932	392,391	616,450	61,309	45,773,958	4,714,256	18,467,037	1,946,000
120100	3,450,725	332,620	568,582	52,350	41,581,621	3,992,918	16,613,790	1,643,065
120200	3,302,941	353,625	540,484	55,079	39,767,282	4,243,981	15,965,643	1,756,639
120301	6,518,977	258,992	1,094,082	41,771	78,798,777	3,112,226	31,049,732	1,262,222
120302	3,902,697	193,826	624,237	30,481	46,986,576	2,325,991	19,109,769	957,853
120401	1,453,100	73,414	246,864	12,338	17,516,834	892,199	6,869,542	349,452
120402	1,236,527	DD	202,096	DD	14,894,596	DD	5,981,357	DD
120500	2,521,067	446,049	399,261	69,290	30,412,379	5,356,777	12,413,179	2,218,946
120601	2,560,224	185,483	407,058	28,714	30,922,959	2,227,352	12,579,309	924,407
120602	4,073,886	261,812	669,626	41,088	49,412,452	3,144,623	19,646,106	1,295,322
120701	8,085,578	296,726	1,286,198	46,450	97,266,716	3,567,628	39,711,224	1,470,092
120702	4,921,169	251,052	796,593	39,562	60,378,629	3,078,542	23,950,632	1,240,148
120800	1,863,631	105,540	302,126	16,423	22,925,488	1,267,231	9,063,003	524,536
120901	4,073,904	90,735	685,076	14,168	53,424,373	1,094,315	19,435,692	450,199
120902	2,714,836	46,490	453,624	7,813	34,898,298	621,820	12,992,202	222,035
120903	2,581,445	103,325	408,988	16,188	31,057,543	1,241,833	12,706,574	511,680
120904	1,196,800	66,855	189,827	10,539	14,410,528	802,549	5,887,497	329,970

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
121001	2,040,472	57,538	319,109	8,881	24,521,206	690,883	10,114,433	287,204
121002	3,911,492	254,035	627,976	39,355	47,604,096	3,051,788	19,119,827	1,265,572
121003	2,233,692	DD	360,802	DD	27,138,939	DD	10,880,634	DD
121004	2,391,328	69,369	375,734	10,726	28,758,061	832,426	11,823,968	345,924
121101	4,028,681	174,944	645,876	27,426	49,418,065	2,107,203	19,713,312	866,110
121102	2,682,773	46,684	426,250	7,345	32,313,350	562,382	13,185,252	230,672
130100	820,834	15,287	135,598	2,544	10,085,175	184,777	3,948,587	73,180
130201	276,933	DD	47,865	DD	3,343,488	DD	1,295,344	DD
130202	1,089,170	85,537	178,962	13,622	13,190,707	1,029,060	5,253,314	419,840
130301	241,488	DD	39,660	DD	2,906,059	DD	1,164,827	DD
130302	382,479	53,384	60,545	8,240	4,591,295	640,612	1,883,429	266,462
130401	73,284	DD	12,572	DD	917,084	DD	344,820	DD
130402	476,980	DD	81,541	DD	6,334,035	DD	2,253,940	DD
130403	508,923	DD	97,373	DD	7,925,228	DD	2,243,531	DD
130500	731,095	22,714	118,003	3,616	8,896,827	273,420	3,562,964	111,504
130600	1,997,599	118,828	319,825	18,397	24,392,527	1,426,517	9,780,587	592,165
130700	1,503,593	74,831	253,547	11,665	19,730,556	898,070	7,161,551	371,555
130800	724,658	28,193	118,792	4,541	9,113,042	359,677	3,504,321	137,778
130900	292,798	DD	46,685	DD	3,529,938	DD	1,436,294	DD
140100	749,544	16,684	130,758	2,820	9,176,570	200,255	3,487,084	79,109
140200	749,183	52,117	127,252	8,396	9,228,179	651,826	3,544,778	254,504
140300	342,532	48,332	57,681	7,760	4,211,354	580,092	1,629,106	236,127
140401	1,336,949	68,425	223,302	12,393	16,809,277	984,780	6,394,731	312,493
140402	77,091	DD	12,389	DD	926,166	DD	376,472	DD
140500	1,198,355	37,113	203,325	6,460	15,282,245	508,923	5,680,632	173,624
140600	1,151,315	134,583	192,911	21,520	14,139,099	1,640,814	5,491,954	659,377
140700	436,210	41,333	71,119	6,435	5,295,975	495,998	2,113,561	205,368
140801	608,159	DD	109,573	DD	7,540,579	DD	2,771,291	DD
140802	236,908	7,778	41,473	1,294	2,869,781	95,214	1,099,298	37,252
150100	313,860	33,192	53,186	5,225	3,782,444	398,589	1,486,051	163,948
150200	637,065	DD	112,955	DD	7,827,720	DD	2,933,182	DD
150301	50,817	DD	8,562	DD	620,580	DD	241,563	DD
150302	130,698	DD	21,547	DD	1,570,453	DD	628,993	DD
150400	563,465	21,006	90,957	3,291	6,777,752	252,071	2,744,809	104,015
150501	135,225	DD	24,639	DD	1,722,323	DD	612,103	DD
150502	277,034	DD	45,950	DD	3,341,347	DD	1,328,696	DD
150503	351,491	42,770	63,567	6,767	4,323,577	516,286	1,597,187	210,697
150601	183,169	DD	34,950	1,616	2,203,258	DD	800,596	DD
150602	264,541	12,187	45,223	2,065	3,293,471	146,240	1,247,201	57,702
150701	107,292	38,433	20,456	6,177	1,300,317	461,719	469,357	187,673
150702	9,180	DD	2,218	DD	111,367	DD	32,189	DD
150801	DD	0	2,095	0	DD	0	DD	0
150802	4,492	0	741	0	53,907	0	21,610	0
150803	95,694	DD	16,052	DD	1,152,565	DD	455,880	DD
160101	506,997	71,988	81,305	11,669	6,137,781	903,925	2,479,395	350,353
160102	764,390	164,625	128,800	26,232	9,507,294	1,987,569	3,635,565	807,880
160201	376,354	77,690	69,129	13,069	4,851,970	1,027,947	1,694,935	370,686
160202	442,405	117,099	82,196	18,798	5,543,592	1,407,388	1,974,380	572,190
160203	1,276,710	102,358	207,207	16,296	15,599,613	1,228,743	6,203,437	502,463
160300	1,433,693	263,832	236,915	41,555	17,933,659	3,184,589	6,899,605	1,302,955
160401	1,126,515	45,530	178,129	7,141	13,612,721	546,926	5,551,749	225,332
160402	534,951	DD	85,368	DD	6,488,289	DD	2,623,409	DD
160501	68,558	17,384	12,019	2,821	825,894	217,683	317,764	84,543
160502	215,722	DD	35,270	DD	2,598,862	DD	1,043,281	DD
160503	215,359	DD	36,629	DD	2,802,563	DD	1,020,104	DD
160600	796,463	DD	127,740	DD	9,697,815	DD	3,895,463	177,552
170101	81,405	DD	14,901	DD	991,720	DD	366,725	DD
170102	2,114,216	115,390	357,389	18,254	25,488,860	1,392,472	10,025,495	568,500
170103	322,525	20,206	60,931	3,226	3,914,642	242,470	1,420,554	99,034
170200	1,627,042	262,455	273,169	41,079	19,649,748	3,150,593	7,747,594	1,300,342

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S4. Quantity of Manure and Manure Nutrients Produced *as excreted* for Pastured Livestock Types by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of manure, wet weight (tons)		Quantity of manure, dry weight (tons)		Quantity of manure nitrogen, pounds		Quantity of manure phosphorus, pounds	
	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs	Non-AFOs	AFOs
170300	725,160	116,403	125,891	18,040	8,845,840	1,397,537	3,383,664	579,783
170401	314,314	36,678	55,496	6,034	3,788,005	469,552	1,450,172	177,104
170402	3,534,069	1,212,085	590,198	189,116	43,631,834	14,645,630	16,894,483	6,016,748
170501	3,525,939	612,953	575,060	96,059	42,571,696	7,391,172	17,077,742	3,035,279
170502	866,051	74,616	138,458	11,715	10,541,605	895,388	4,243,320	369,070
170601	1,132,291	106,355	185,341	16,720	13,678,800	1,278,010	5,472,879	525,701
170602	698,027	33,995	112,507	5,340	8,399,439	408,500	3,403,272	168,109
170603	371,604	30,367	62,515	4,828	4,488,198	364,401	1,767,362	149,166
170701	1,057,548	118,681	177,202	18,832	12,898,510	1,458,006	5,043,469	584,074
170702	712,838	47,165	113,696	7,383	8,592,693	566,016	3,496,083	233,668
170703	974,088	113,347	167,734	17,771	11,786,473	1,362,862	4,567,292	561,100
170800	344,027	49,572	66,127	7,726	4,216,622	596,392	1,496,472	246,191
170900	1,060,594	117,940	206,766	18,931	13,694,209	1,434,029	4,573,104	576,552
171001	243,052	18,121	43,288	2,796	2,949,729	217,470	1,115,278	90,458
171002	205,192	68,558	35,533	10,696	2,517,957	824,175	959,168	340,278
171003	1,125,284	108,335	193,420	16,834	14,126,232	1,301,193	5,288,852	538,849
171100	901,026	186,212	178,100	29,328	11,033,745	2,235,761	3,835,610	919,488
171200	1,738,300	66,210	273,568	10,300	20,889,694	794,518	8,587,360	329,112
180101	756,518	176,991	129,980	27,677	9,409,353	2,131,654	3,555,431	877,437
180102	1,286,278	127,027	207,527	19,717	15,540,149	1,524,385	6,268,616	632,172
180200	696,212	71,482	111,291	11,037	8,463,333	857,789	3,411,266	356,739
180201	2,354,994	173,163	408,887	27,614	29,294,825	2,134,837	10,995,195	849,983
180300	1,688,911	728,068	291,830	112,804	22,090,844	8,760,109	7,923,498	3,627,125
180400	3,076,980	866,651	511,746	135,231	37,570,000	10,418,405	14,739,967	4,301,134
180500	763,299	87,838	130,684	14,580	9,364,529	1,120,907	3,593,445	421,914
180600	1,661,753	99,193	279,615	16,657	20,096,011	1,306,788	7,902,705	473,707
180701	122,132	8,021	26,504	2,154	1,489,017	96,246	479,576	24,428
180702	89,107	89,274	21,985	14,183	1,239,768	1,072,329	306,807	438,739
180703	167,535	21,599	39,464	3,833	2,042,886	259,655	604,958	99,317
180800	331,051	DD	53,184	DD	3,985,335	DD	1,617,050	DD
180901	83,267	0	13,387	0	999,613	0	406,512	0
180902	185,996	13,464	32,741	2,171	2,243,463	162,032	859,855	65,639
181001	18,955	0	3,558	0	230,162	0	DD	0
181002	66,378	16,000	14,389	3,210	1,005,442	264,274	263,485	68,190
190101	0	0	0	0	0	0	0	0
190102	0	0	0	0	0	0	0	0
190103	DD	0	DD	0	DD	0	DD	0
190104	0	0	0	0	0	0	0	0
190201	DD	DD	124	DD	DD	DD	DD	DD
190202	DD	0	DD	0	DD	0	DD	0
190203	5,987	DD	1,358	DD	72,624	DD	22,506	DD
190204	1,151	0	324	0	14,025	0	3,255	0
190205	7,075	DD	1,460	DD	88,994	DD	29,110	DD
190206	DD	0	DD	0	DD	0	DD	0
190207	DD	DD	DD	DD	DD	DD	DD	DD
190301	DD	0	DD	0	DD	0	DD	0
190303	0	0	0	0	0	0	0	0
190305	0	0	0	0	0	0	0	0
190401	1,189	DD	273	DD	14,449	DD	4,413	DD
190403	DD	0	DD	0	DD	0	DD	0
190404	DD	DD	DD	DD	DD	DD	1,151	DD
190405	3,232	DD	756	DD	39,451	DD	11,755	DD
190406	DD	0	DD	0	DD	0	DD	0
190408	DD	0	DD	0	DD	0	DD	0
190501	0	0	0	0	0	0	0	0
200100	1,027,047	DD	162,944	DD	12,400,084	DD	5,052,146	DD
200200	185,194	DD	29,896	DD	2,247,479	DD	902,378	DD
200400	DD	0	DD	0	DD	0	DD	0
200500	35,596	0	5,951	0	429,673	0	169,925	0
200600	53,157	DD	9,284	DD	648,016	DD	247,077	DD
200700	105,923	DD	17,335	DD	1,294,081	DD	512,218	DD
200800	DD	0	DD	0	DD	0	DD	0

For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
10100	27,445	3,357	592,610	116,527	476,083	131,717	51,819	79,898
10200	152,670	19,852	3,316,349	770,341	2,546,008	645,777	325,330	320,447
10300	273,226	35,811	5,963,258	1,384,981	4,578,276	1,174,250	588,404	585,846
10400	235,754	47,930	7,813,209	3,979,369	3,833,840	2,260,325	1,615,376	644,949
10500	40,102	5,975	948,320	257,223	691,097	220,354	132,347	88,007
10600	78,454	10,280	1,761,938	383,928	1,378,011	363,265	166,435	196,829
10700	98,388	13,522	2,189,963	520,411	1,669,553	457,818	234,331	223,487
10801	607,617	79,795	13,431,823	3,183,309	10,248,514	2,663,974	1,344,301	1,319,673
10802	230,300	30,349	4,956,559	1,188,573	3,767,986	988,521	509,359	479,162
10900	104,994	14,001	2,233,515	515,772	1,717,743	467,248	232,220	235,029
11000	530,028	82,195	13,688,648	4,806,064	8,882,583	3,257,895	1,978,629	1,279,266
11100	315,258	40,991	6,916,397	1,609,793	5,306,604	1,358,111	680,121	677,990
20100	2,237,809	296,499	49,223,408	12,241,326	36,982,082	9,804,818	5,141,640	4,663,179
20200	1,835,607	239,589	40,693,786	9,543,924	31,149,861	8,125,239	4,029,968	4,095,271
20301	33,990	4,596	780,725	166,839	613,886	166,995	77,144	89,851
20302	23,254	5,333	DD	186,443	DD	DD	119,872	DD
20401	564,223	86,142	14,203,872	4,439,350	9,764,522	3,282,642	1,926,129	1,356,513
20402	1,609,206	260,382	37,814,193	12,675,747	25,138,446	8,785,680	5,667,035	3,118,644
20403	15,302	DD	DD	DD	DD	DD	DD	DD
20501	2,799,007	359,250	61,175,027	14,021,672	47,153,354	12,257,952	6,016,601	6,241,351
20502	965,144	132,934	21,455,288	5,526,462	15,928,826	4,518,192	2,467,355	2,050,837
20503	8,526,889	1,294,040	200,727,062	63,248,032	137,479,030	45,079,115	28,359,474	16,719,642
20600	3,827,670	931,008	94,610,011	46,442,382	48,167,629	26,477,431	21,192,801	5,284,630
20700	5,737,366	1,102,570	160,966,125	58,927,685	102,038,441	42,556,623	27,429,126	15,127,497
20801	480,808	87,504	12,321,190	3,987,308	8,333,882	3,291,648	1,850,101	1,441,547
20802	733,766	137,825	18,687,070	6,565,293	12,121,777	5,092,905	3,093,338	1,999,567
30101	922,629	129,253	20,537,898	5,197,106	15,340,792	4,812,494	2,554,866	2,257,628
30102	1,114,558	185,211	22,812,404	8,038,176	14,774,229	5,371,164	4,212,153	1,159,011
30201	1,057,977	154,886	21,959,471	7,349,624	14,609,847	5,257,116	4,065,083	1,192,033
30202	3,712,989	558,608	81,917,181	25,520,065	56,397,116	18,272,435	14,377,309	3,895,126
30300	10,782,737	1,710,653	238,509,618	78,472,422	160,037,196	55,102,147	42,973,898	12,128,249
30401	2,907,509	666,975	79,131,746	35,882,253	43,249,493	22,557,113	16,682,882	5,874,231
30402	3,332,081	634,851	78,211,671	31,553,833	46,657,838	20,393,371	16,291,066	4,102,306
30501	1,706,360	379,412	50,147,605	21,123,764	29,023,841	14,311,991	10,174,606	4,137,385
30502	676,848	149,459	16,482,123	7,484,706	8,997,417	4,556,852	3,450,835	1,106,017
30601	3,089,799	753,694	81,360,436	39,862,600	41,497,836	23,961,341	18,122,348	5,838,992
30602	409,469	74,730	9,238,625	3,357,357	5,881,268	2,362,024	1,579,725	782,299
30701	2,116,218	484,613	55,844,593	26,276,469	29,568,124	16,000,837	11,745,536	4,255,301
30702	721,558	156,803	18,397,029	8,256,511	10,140,518	5,195,824	3,764,482	1,431,342
30801	159,893	20,724	3,253,537	679,246	2,574,291	668,695	312,462	356,232
30802	DD	DD	DD	DD	DD	DD	DD	DD
30901	777,691	111,732	18,762,771	DD	DD	4,473,259	DD	DD
30902	176,426	23,023	3,329,761	735,092	2,594,670	684,317	347,891	336,426
31001	339,863	43,252	6,941,228	1,503,025	5,438,203	1,436,537	672,170	764,367
31002	395,662	62,919	10,604,098	3,813,137	6,790,961	2,695,871	1,573,630	1,122,240
31101	225,140	39,451	4,962,619	1,733,496	3,229,122	1,180,027	785,469	394,558
31102	2,023,566	388,006	50,265,396	20,076,755	30,188,640	13,251,166	8,904,006	4,347,160
31200	371,798	78,589	8,376,935	3,687,448	4,689,487	2,208,781	1,693,324	515,457
31300	2,433,632	536,358	58,736,665	26,515,264	32,221,401	16,276,860	12,191,522	4,085,338
31401	178,911	37,839	DD	2,082,921	DD	DD	918,047	DD
31402	1,235,136	297,386	30,815,522	14,860,026	15,955,496	9,055,476	6,831,810	2,223,667
31403	622,410	154,087	16,289,018	7,894,279	8,394,739	4,881,649	3,610,607	1,271,042
31501	3,777,334	949,721	95,672,057	48,799,682	46,872,375	28,170,658	22,359,109	5,811,549
31502	275,550	58,047	6,631,688	2,653,449	3,978,239	1,927,138	1,242,908	684,231
31601	3,002,107	649,510	71,661,039	31,753,323	39,907,716	20,104,271	14,947,684	5,156,587
31602	145,712	26,702	3,318,512	1,262,185	2,056,327	921,297	588,133	333,164
31700	2,521,642	626,843	63,547,308	31,962,639	31,584,669	18,716,502	14,591,541	4,124,961
31800	3,371,537	809,262	83,603,845	40,606,758	42,997,087	23,925,498	18,617,021	5,308,477
40101	0	0	0	0	0	0	0	0
40102	33,359	4,296	781,718	163,139	618,579	168,994	70,837	98,157

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
40103	83,352	10,681	2,118,672	408,157	1,710,516	486,083	174,113	311,971
40201	13,568	1,725	DD	66,571	DD	DD	27,726	DD
40202	21,495	2,773	477,399	103,014	374,385	100,071	44,693	55,378
40203	0	0	0	0	0	0	0	0
40301	4,531,450	581,634	90,194,447	21,447,293	68,747,154	16,998,165	9,091,723	7,906,442
40302	3,922,096	501,020	79,545,132	18,720,898	60,824,234	15,051,025	7,911,604	7,139,421
40400	618,613	79,141	12,630,266	2,959,679	9,670,586	2,404,774	1,251,850	1,152,925
40500	6,496,768	888,867	139,749,063	39,325,437	100,423,627	28,882,238	18,078,694	10,803,544
40601	1,348,743	176,500	28,298,941	6,927,485	21,371,456	5,526,869	3,233,448	2,293,421
40602	DD	DD	DD	DD	DD	DD	DD	DD
40700	230,069	29,409	4,990,399	1,099,415	3,890,984	1,012,283	466,998	545,285
40801	1,253,730	151,022	23,308,597	6,001,295	17,307,302	4,139,385	2,436,461	1,702,923
40802	1,331,508	166,020	25,820,875	6,217,552	19,603,323	4,806,934	2,639,398	2,167,536
40803	DD	DD	DD	DD	DD	DD	DD	DD
40900	293,615	36,155	5,644,393	1,309,436	4,334,957	1,041,910	542,891	499,020
41000	3,795,527	498,247	78,595,299	22,569,025	56,026,274	15,883,728	10,406,045	5,477,684
41100	337,847	42,746	7,093,933	1,608,230	5,485,704	1,357,103	680,168	676,935
41201	1,063,885	142,080	23,249,650	5,968,244	17,281,406	4,758,425	2,514,606	2,243,818
41202	DD	DD	DD	DD	DD	DD	DD	DD
41300	1,846,959	241,138	38,021,347	9,253,291	28,768,056	7,390,945	3,931,226	3,459,719
41401	272,623	35,908	5,828,833	1,413,725	4,415,109	1,149,285	601,868	547,417
41402	2,594,127	336,681	54,128,796	12,929,365	41,199,431	10,572,049	5,576,706	4,995,343
41501	585,365	76,239	12,343,731	2,905,862	9,437,869	2,361,082	1,226,914	1,134,167
41502	DD	DD	DD	DD	DD	DD	DD	DD
41503	1,192,870	154,938	26,273,569	6,005,436	20,268,133	5,215,771	2,544,513	2,671,258
50100	1,611,050	208,625	36,308,971	8,443,202	27,865,768	7,438,064	3,562,274	3,875,790
50200	479,185	61,102	10,694,224	2,312,197	8,382,027	2,180,255	995,440	1,184,815
50301	933,861	120,087	20,645,047	4,722,668	15,922,379	4,175,914	2,012,672	2,163,242
50302	241,817	29,765	5,562,404	1,117,147	4,445,257	1,195,198	496,831	698,367
50400	3,025,962	432,503	70,579,479	19,680,019	50,899,460	15,626,267	8,625,361	7,000,905
50500	378,338	49,804	9,866,904	1,949,967	7,916,937	2,462,184	893,246	1,568,939
50600	947,154	114,622	18,522,896	4,073,545	14,449,351	3,680,662	2,117,625	1,563,037
50701	DD	DD	DD	DD	DD	DD	DD	DD
50702	4,584	554	DD	11,952	DD	DD	6,416	DD
50800	2,051,008	301,471	48,168,668	16,631,699	31,536,969	11,293,872	7,655,479	3,638,392
50901	54,673	6,790	1,264,263	213,446	1,050,817	316,114	100,503	215,611
50902	461,891	55,783	9,997,034	2,286,300	7,710,734	2,119,818	1,034,069	1,085,749
51001	233,012	28,839	5,147,854	876,028	4,271,825	1,264,382	415,405	848,976
51002	260,172	31,788	5,139,791	890,638	4,249,153	1,240,255	446,273	793,982
51100	2,103,124	369,893	48,955,969	16,502,136	32,453,833	12,465,920	7,704,917	4,761,003
51201	7,352,304	1,009,135	160,853,697	48,812,803	112,040,893	35,021,065	24,712,232	10,308,833
51202	3,313,673	513,203	81,198,292	27,498,109	53,700,183	19,467,151	13,815,812	5,651,339
51301	871,875	156,680	20,275,502	6,789,917	13,485,585	5,393,917	3,137,186	2,256,731
51302	617,659	92,934	14,162,946	4,609,880	9,553,066	3,574,375	2,111,839	1,462,536
51401	762,182	114,315	17,484,444	4,423,070	13,061,374	4,410,575	2,107,753	2,302,822
51402	810,298	139,983	18,566,144	6,273,634	12,292,510	4,692,989	3,113,956	1,579,033
60101	790,051	128,755	18,050,834	5,431,984	12,618,850	4,572,047	2,468,379	2,103,668
60102	322,910	44,078	6,417,299	1,493,813	4,923,486	1,454,565	702,427	752,138
60200	849,045	183,890	21,218,845	9,360,593	11,858,252	5,927,977	4,229,845	1,698,133
60300	2,798,817	657,480	71,441,197	33,263,964	38,177,233	20,948,959	15,305,416	5,643,543
60400	800,195	157,027	17,681,306	7,002,480	10,678,826	4,765,430	3,305,975	1,459,455
70101	1,107,955	162,931	27,660,134	7,485,793	20,174,341	6,464,474	3,480,854	2,983,620
70102	5,019,135	791,371	122,237,388	39,267,468	82,969,920	28,210,235	18,428,903	9,781,331
70200	11,709,722	1,445,363	232,853,359	59,383,430	173,469,929	44,547,979	30,678,857	13,869,122
70300	1,092,087	149,168	25,852,905	6,478,090	19,374,815	5,579,934	2,812,467	2,767,467
70400	7,135,995	953,584	157,229,766	39,145,076	118,084,690	32,488,494	17,794,608	14,693,886
70500	3,305,159	463,270	78,160,723	20,071,496	58,089,226	16,624,963	8,954,930	7,670,033
70600	7,756,952	892,862	161,019,662	35,372,248	125,647,414	31,896,315	15,891,952	16,004,362
70700	4,707,114	601,791	103,628,286	23,406,476	80,221,810	20,787,302	9,956,988	10,830,314
70801	5,766,827	676,926	113,287,539	25,204,492	88,083,047	21,858,601	13,728,192	8,130,409

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
70802	10,334,583	1,228,195	200,795,923	48,597,438	152,198,485	38,128,913	25,285,958	12,842,955
70900	7,207,363	884,957	147,112,937	36,475,274	110,637,663	28,636,518	15,766,027	12,870,491
71000	11,234,088	1,443,211	231,085,546	70,497,579	160,587,967	48,537,277	34,333,462	14,203,815
71100	1,664,817	197,997	36,755,322	7,331,952	29,423,370	8,293,289	3,926,328	4,366,961
71200	2,805,964	371,338	59,062,859	17,089,788	41,973,071	12,157,395	7,743,300	4,414,095
71300	3,340,444	384,410	62,274,917	12,774,291	49,500,626	12,645,216	7,627,854	5,017,362
71401	682,541	81,805	15,547,742	2,701,421	12,846,321	3,922,029	1,372,862	2,549,168
71402	1,521,053	188,270	29,637,389	7,204,299	22,433,090	5,922,805	3,540,291	2,382,514
80101	39,080	8,411	885,194	398,043	487,151	245,994	183,900	62,095
80102	1,155,198	238,260	24,998,043	11,068,312	13,929,731	6,734,807	5,228,673	1,506,135
80201	DD	DD	DD	DD	DD	DD	DD	DD
80202	374,270	76,056	8,142,204	3,430,523	4,711,681	2,239,402	1,628,673	610,729
80203	167,638	26,024	2,783,223	892,264	1,890,959	733,614	451,177	282,436
80204	DD	DD	DD	DD	DD	DD	DD	DD
80301	DD	DD	DD	DD	DD	DD	DD	DD
80302	185,339	24,708	2,723,804	718,807	2,004,997	631,892	385,988	245,903
80401	616,510	138,798	17,630,229	7,605,953	10,024,276	5,497,745	3,523,413	1,974,332
80402	1,786,238	452,373	45,363,118	23,239,191	22,123,927	13,377,993	10,629,540	2,748,453
80403	198,151	45,692	4,489,308	2,227,101	2,262,207	1,303,994	1,027,790	276,205
80500	104,792	12,734	DD	221,509	DD	DD	142,890	DD
80601	DD	DD	DD	DD	DD	DD	DD	DD
80602	363,279	72,092	8,870,207	3,925,205	4,945,001	2,404,142	1,777,168	626,974
80701	31,166	3,780	DD	64,718	DD	DD	41,850	DD
80702	561,092	95,904	13,148,801	4,536,954	8,611,847	3,175,321	1,994,891	1,180,430
80703	13,791	1,703	137,227	30,108	107,119	30,251	19,878	10,373
80801	82,697	10,061	DD	182,052	DD	DD	117,003	DD
80802	104,959	13,399	DD	289,730	DD	DD	172,985	DD
80901	DD	DD	DD	DD	DD	DD	DD	DD
80902	34,138	4,368	657,413	149,214	508,198	128,933	67,663	61,270
80903	DD	DD	DD	DD	DD	DD	DD	DD
90100	171,859	19,827	3,338,704	597,825	2,740,879	863,951	309,838	554,113
90201	1,503,165	229,421	36,861,050	11,408,575	25,452,474	8,705,603	5,467,535	3,238,068
90202	290,213	36,690	6,388,894	1,320,020	5,068,873	1,654,117	726,553	927,564
90203	424,758	58,199	9,148,143	2,369,320	6,778,823	2,226,775	1,224,410	1,002,365
90300	13,834	1,695	338,582	54,616	283,966	87,683	25,219	62,464
100100	DD	DD	DD	DD	DD	DD	DD	DD
100200	260,884	32,315	5,160,607	858,590	4,302,016	1,366,067	432,764	933,303
100301	238,780	28,003	4,582,851	926,428	3,656,423	1,060,422	470,319	590,104
100302	326,006	40,744	6,471,886	1,349,916	5,121,969	1,404,818	746,488	658,330
100401	100,079	11,628	2,108,355	270,962	1,837,393	617,454	143,685	473,769
100402	56,012	7,040	1,535,033	230,887	1,304,147	424,745	121,830	302,915
100500	144,868	17,907	2,598,593	423,649	2,174,944	661,730	253,810	407,920
100600	77,800	9,234	DD	156,577	DD	DD	108,936	DD
100700	460,992	48,129	8,327,531	1,449,945	6,877,586	2,064,606	606,231	1,458,376
100800	240,549	28,816	4,302,312	651,962	3,650,350	1,139,044	350,038	789,005
100901	DD	DD	489,249	63,034	426,214	147,425	41,728	105,697
100902	23,157	2,622	1,014,537	58,021	956,516	361,504	30,872	330,631
101000	343,071	40,334	5,933,164	786,947	5,146,216	1,755,789	468,635	1,287,154
101101	54,817	6,264	1,552,995	172,090	1,380,905	477,741	83,378	394,363
101102	67,753	6,633	2,289,405	254,778	2,034,627	691,711	93,809	597,903
101201	DD	DD	DD	DD	DD	DD	DD	DD
101202	136,903	16,393	2,429,482	357,742	2,071,739	678,424	199,103	479,321
101301	596,626	65,929	14,265,876	2,116,253	12,149,623	3,853,982	933,555	2,920,427
101302	316,395	37,772	8,452,089	1,267,011	7,185,078	2,298,440	561,487	1,736,952
101303	233,106	23,718	5,969,187	772,944	5,196,243	1,724,140	338,227	1,385,913
101401	869,351	95,470	23,485,798	3,830,588	19,655,210	6,250,416	1,823,463	4,426,953
101402	344,951	34,570	9,440,407	1,406,613	8,033,795	2,389,096	DD	DD
101500	1,485,176	140,953	30,226,607	5,805,422	24,421,185	6,571,742	2,121,785	4,449,957
101600	3,365,528	387,501	79,758,572	16,181,534	63,577,038	19,211,774	7,616,953	11,594,821
101701	2,431,223	273,856	54,770,452	13,227,102	41,543,350	12,516,702	5,482,850	7,033,852

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
101702	8,588,237	964,687	164,103,727	40,003,099	124,100,628	31,167,374	18,227,979	12,939,395
101800	2,655,500	239,057	47,219,521	10,613,719	36,605,803	8,723,754	3,533,440	5,190,314
101900	8,135,049	870,722	148,321,558	39,609,731	108,711,827	25,982,122	14,573,611	11,408,511
102001	3,697,427	327,639	61,800,644	15,507,718	46,292,926	9,647,001	4,999,427	4,647,574
102002	1,764,005	182,102	31,705,960	7,735,634	23,970,326	5,795,660	3,521,698	2,273,962
102100	4,474,289	427,290	88,507,175	18,604,015	69,903,160	17,572,392	7,313,677	10,258,715
102200	6,672,364	644,260	120,896,670	30,750,462	90,146,207	21,627,175	11,259,416	10,367,759
102300	10,114,992	1,154,208	182,672,702	46,025,773	136,646,928	33,440,815	22,221,879	11,218,936
102400	3,782,615	436,790	74,924,310	17,897,928	57,026,382	16,006,268	8,701,028	7,305,239
102500	7,445,477	691,053	132,494,848	31,297,654	101,197,194	22,816,644	11,644,025	11,172,619
102600	3,993,762	361,539	71,506,197	16,423,908	55,082,289	12,725,892	5,396,134	7,329,758
102701	713,342	77,329	15,208,518	2,807,928	12,400,590	3,492,448	1,279,190	2,213,258
102702	4,060,493	423,530	76,151,363	18,579,685	57,571,679	14,268,759	7,729,770	6,538,989
102801	2,860,793	335,075	58,025,195	12,137,228	45,887,967	11,807,539	7,163,792	4,643,746
102802	282,394	32,145	6,092,926	945,669	5,147,256	1,570,930	543,998	1,026,931
102901	2,025,458	296,382	53,031,603	13,218,110	39,813,492	14,160,109	7,026,578	7,133,530
102902	485,579	66,796	12,639,719	2,765,944	9,873,776	3,069,835	1,316,394	1,753,440
103001	1,852,726	299,642	46,667,681	14,096,269	32,571,412	12,608,366	7,120,356	5,488,009
103002	171,301	20,262	4,212,835	708,843	3,503,992	1,002,818	404,530	598,288
110100	3,910,642	895,167	112,888,938	48,265,358	64,623,580	33,225,244	22,965,034	10,260,210
110200	1,675,116	155,624	28,136,644	6,613,935	21,522,709	5,092,948	2,456,371	2,636,577
110300	12,840,214	1,167,424	211,512,856	54,652,232	156,860,624	32,239,002	17,944,895	14,294,107
110400	7,016,704	651,823	116,613,594	30,179,902	86,433,693	17,426,616	10,645,229	6,781,387
110500	1,588,066	168,705	28,554,552	6,340,378	22,214,174	5,421,791	3,202,722	2,219,069
110600	409,359	44,963	7,277,098	1,216,740	6,060,359	1,843,101	595,119	1,247,982
110701	420,922	50,336	10,265,939	1,515,526	8,750,413	2,934,822	778,659	2,156,163
110702	3,666,791	726,524	97,348,694	37,713,797	59,634,897	27,242,471	17,348,090	9,894,381
110800	25,106	2,922	DD	59,098	DD	DD	33,597	DD
110901	3,225,972	294,944	55,285,088	14,270,570	41,014,518	8,540,236	4,471,834	4,068,402
110902	456,639	57,112	DD	DD	DD	2,411,886	1,040,869	1,371,018
111001	8,125,583	762,141	135,616,842	34,768,031	100,848,812	19,684,592	13,537,705	6,146,887
111002	2,393,020	247,383	DD	10,269,730	DD	DD	5,160,565	DD
111003	371,632	43,097	6,975,624	1,389,485	5,586,139	1,573,732	802,648	771,085
111101	2,408,278	562,056	65,065,898	29,563,640	35,502,258	19,273,008	13,777,714	5,495,293
111102	2,742,724	646,466	73,506,721	33,430,680	40,076,041	21,680,381	15,879,218	5,801,163
111201	8,167,569	732,696	133,109,815	35,806,233	97,303,582	18,836,422	11,013,601	7,822,820
111202	DD	26,841	DD	DD	DD	683,298	405,412	277,886
111203	1,037,333	88,755	16,966,525	4,511,696	12,454,829	2,390,455	1,334,348	1,056,107
111301	109,141	13,376	1,629,773	338,721	1,291,052	376,255	178,859	197,396
111302	432,419	53,817	9,417,830	1,866,135	7,551,695	2,196,112	820,979	1,375,133
111303	778,673	81,863	14,540,539	3,053,859	11,486,680	3,011,924	1,360,375	1,651,549
111401	2,044,972	444,676	51,670,966	21,354,331	30,316,634	15,298,685	10,039,687	5,258,997
111402	834,546	199,546	21,610,545	10,018,783	11,591,763	6,517,300	4,610,125	1,907,174
111403	2,013,364	402,865	48,036,389	19,416,737	28,619,652	12,897,631	8,739,554	4,158,077
120100	1,883,706	413,522	46,139,282	20,275,500	25,863,782	12,910,910	9,241,112	3,669,798
120200	1,425,605	328,381	36,566,322	16,327,817	20,238,505	10,715,467	7,481,142	3,234,326
120301	689,598	98,904	15,231,966	4,251,071	10,980,894	4,050,664	1,973,365	2,077,299
120302	273,258	45,620	6,954,121	1,833,523	5,120,598	2,080,832	892,228	1,188,604
120401	109,372	15,942	2,468,215	531,603	1,936,612	723,273	270,835	452,438
120402	55,629	6,758	DD	118,995	DD	DD	75,204	DD
120500	10,292,183	1,075,339	175,639,476	46,626,092	129,013,384	28,042,164	16,549,471	11,492,693
120601	307,906	33,254	5,755,727	879,892	4,875,836	1,548,346	404,191	1,144,154
120602	1,404,326	194,316	29,766,671	8,050,097	21,716,574	6,553,633	3,629,989	2,923,644
120701	692,039	124,561	16,192,042	5,593,970	10,598,072	4,768,585	2,589,777	2,178,808
120702	1,055,520	159,146	24,775,701	7,121,722	17,653,978	5,825,924	3,325,522	2,500,402
120800	653,989	78,452	11,795,750	2,787,128	9,008,622	2,352,768	1,181,291	1,171,477
120901	572,063	65,684	10,805,132	2,618,177	8,186,955	2,061,794	1,037,128	1,024,667
120902	78,465	10,568	1,849,289	289,388	1,559,902	433,266	137,035	296,231
120903	102,855	12,959	2,733,608	457,638	2,275,970	832,686	214,532	618,153
120904	DD	DD	DD	DD	DD	DD	DD	DD

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—continued

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
121001	177,779	32,525	4,735,862	1,964,589	2,771,273	1,445,293	865,749	579,544
121002	907,959	196,543	25,743,899	11,867,072	13,876,827	7,629,715	5,100,247	2,529,468
121003	175,612	19,704	DD	637,664	DD	DD	279,998	DD
121004	133,802	13,857	2,435,508	404,658	2,030,850	614,950	173,764	441,186
121101	505,917	48,415	9,477,445	1,974,978	7,502,467	1,947,168	690,161	1,257,007
121102	329,395	29,579	5,349,598	1,291,835	4,057,763	887,576	417,588	469,988
130100	126,883	15,631	1,577,350	312,495	1,264,855	368,163	190,622	177,540
130201	37,122	4,553	DD	81,711	DD	DD	53,381	DD
130202	565,167	72,267	10,447,577	2,478,428	7,969,150	2,112,741	1,096,705	1,016,036
130301	DD	DD	DD	3,856,611	DD	DD	DD	DD
130302	459,924	58,977	8,650,567	2,146,846	6,503,721	1,672,953	909,327	763,626
130401	DD	DD	DD	DD	DD	DD	DD	DD
130402	DD	964	DD	DD	DD	DD	DD	DD
130403	1,640	250	DD	5,516	DD	DD	3,042	DD
130500	171,154	24,592	3,851,772	1,239,022	2,612,749	871,489	512,871	358,618
130600	1,967,312	256,392	37,661,686	9,772,808	27,888,878	6,968,053	4,120,194	2,847,859
130700	164,828	21,126	3,749,753	760,859	2,988,894	887,065	333,284	553,781
130800	DD	DD	DD	DD	DD	DD	DD	DD
130900	DD	DD	DD	DD	DD	DD	DD	DD
140100	134,361	18,552	2,167,782	DD	DD	DD	DD	DD
140200	170,609	22,748	3,140,740	DD	DD	820,653	383,896	436,757
140300	105,024	12,539	1,697,576	263,322	1,434,254	457,634	143,598	314,037
140401	25,262	2,945	1,307,910	78,571	1,229,339	367,996	35,751	332,246
140402	2,309	233	DD	7,544	DD	DD	3,047	DD
140500	52,728	6,856	1,135,668	140,351	995,317	297,758	81,102	216,656
140600	170,279	22,698	4,499,306	774,599	3,724,707	1,244,687	373,498	871,189
140700	99,617	14,862	2,322,725	DD	DD	DD	DD	DD
140801	244,817	29,946	DD	629,119	DD	DD	352,382	DD
140802	123,693	16,556	1,549,100	318,929	1,230,171	333,773	193,692	140,080
150100	166,055	20,251	2,182,264	400,847	1,781,417	535,554	244,362	291,192
150200	684,765	86,255	DD	DD	DD	DD	DD	DD
150301	52,454	7,954	DD	DD	DD	DD	95,573	DD
150302	37,000	4,492	DD	72,401	DD	DD	47,982	DD
150400	115,701	14,081	1,444,649	273,612	1,171,036	359,777	167,659	192,118
150501	1,139,544	146,932	DD	5,114,673	DD	DD	2,207,298	DD
150502	DD	DD	DD	DD	DD	DD	DD	DD
150503	2,238,961	229,699	37,352,656	10,076,488	27,276,169	5,647,487	3,478,156	2,169,331
150601	199,339	26,114	DD	841,758	DD	DD	381,712	DD
150602	55,676	7,015	686,737	118,784	567,953	172,900	75,560	97,340
150701	1,598,506	215,033	30,319,544	8,842,969	21,476,575	5,811,618	3,711,812	2,099,806
150702	DD	DD	DD	DD	DD	DD	DD	DD
150801	DD	DD	DD	DD	DD	DD	DD	DD
150802	0	0	0	0	0	0	0	0
150803	4,619	565	DD	11,699	DD	DD	6,282	DD
160101	49,278	5,872	1,420,623	120,307	1,300,316	452,485	64,829	387,656
160102	861,471	114,693	17,934,900	4,664,603	13,270,297	3,892,350	2,001,079	1,891,271
160201	170,368	21,347	3,903,823	746,168	3,157,656	875,751	319,579	556,172
160202	416,021	56,757	9,609,163	2,578,897	7,030,267	2,228,237	1,091,669	1,136,568
160203	437,865	55,455	9,331,417	2,549,242	6,782,175	2,048,055	1,023,179	1,024,876
160300	2,143,884	280,586	46,680,835	11,731,709	34,949,126	9,997,399	6,310,935	3,686,465
160401	117,508	12,869	1,841,711	315,719	1,525,992	461,554	153,475	308,079
160402	DD	DD	DD	DD	DD	DD	DD	DD
160501	43,487	5,286	762,015	133,576	628,438	185,970	65,239	120,731
160502	283,553	36,763	DD	1,252,252	DD	DD	539,287	DD
160503	DD	DD	DD	257,670	DD	DD	DD	DD
160600	227,597	28,584	DD	697,168	DD	738,513	365,799	372,714
170101	9,615	1,212	DD	29,858	DD	DD	15,468	DD
170102	163,872	20,314	3,638,720	558,313	3,080,408	994,601	273,518	721,083
170103	62,831	7,896	1,190,894	229,078	961,816	272,788	109,540	163,248
170200	2,038,177	237,586	38,171,874	10,554,679	27,617,195	7,484,447	4,081,316	3,403,131

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
170300	1,993,842	254,236	36,478,494	9,400,696	27,077,797	6,672,908	3,937,014	2,735,894
170401	55,141	6,708	1,328,098	206,925	1,121,172	333,121	96,078	237,042
170402	10,469,016	1,299,464	193,997,201	47,998,081	145,999,120	37,058,490	20,046,465	17,012,025
170501	4,452,118	516,781	78,697,654	18,971,325	59,726,330	14,862,033	7,611,188	7,250,845
170502	49,676	5,533	1,532,576	159,084	1,373,492	481,906	72,584	409,322
170601	174,775	20,367	3,637,289	575,478	3,061,811	953,339	281,932	671,407
170602	39,586	4,770	873,631	109,456	764,175	259,557	58,339	201,218
170603	28,344	3,200	684,404	76,792	607,612	208,792	38,484	170,309
170701	1,732,590	188,399	29,212,242	7,592,020	21,620,222	4,939,649	2,807,162	2,132,487
170702	49,630	5,322	1,147,106	143,988	1,003,117	335,426	65,935	269,490
170703	120,692	13,804	2,785,484	338,762	2,446,722	831,442	175,617	655,825
170800	425,999	76,691	9,501,598	3,428,579	6,073,019	2,296,972	1,533,307	763,665
170900	1,173,771	182,759	25,709,875	8,567,546	17,142,329	5,836,865	3,692,973	2,143,892
171001	250,085	40,041	6,052,848	2,301,510	3,751,338	1,469,643	951,187	518,457
171002	552,904	71,700	11,270,916	2,774,393	8,496,523	2,201,938	1,181,446	1,020,492
171003	149,394	19,556	3,835,896	726,940	3,108,957	1,041,824	327,751	714,072
171100	1,933,871	259,692	38,955,318	10,583,935	28,371,383	7,769,347	4,471,074	3,298,273
171200	91,287	10,960	1,674,494	195,573	1,478,920	519,098	124,219	394,879
180101	1,084,825	158,159	24,195,204	7,079,471	17,115,733	5,331,818	3,029,600	2,302,217
180102	246,050	29,384	5,157,527	933,726	4,223,801	1,293,302	425,634	867,668
180200	DD	DD	1,113,389	57,287	1,056,103	410,592	35,130	375,462
180201	1,226,281	158,682	23,332,002	5,639,288	17,692,715	4,634,486	2,443,380	2,191,106
180300	22,485,389	2,975,174	412,299,563	114,629,062	297,670,501	76,549,419	48,522,789	28,026,630
180400	16,038,997	2,309,570	323,000,308	96,620,916	226,379,393	65,645,521	41,874,379	23,771,142
180500	311,366	42,189	6,883,352	1,612,210	5,271,142	1,506,982	714,262	792,720
180600	270,435	36,580	6,019,895	1,366,792	4,653,103	1,420,847	636,766	784,082
180701	77,212	11,415	1,259,168	309,122	950,047	248,704	151,831	96,873
180702	3,041,435	419,841	59,659,266	18,462,007	41,197,259	11,935,446	7,681,687	4,253,759
180703	426,590	67,165	9,773,770	3,671,657	6,102,114	2,330,449	1,550,355	780,094
180800	DD	DD	DD	25,406	DD	DD	DD	DD
180901	DD	DD	DD	DD	DD	DD	DD	DD
180902	766,924	103,773	14,656,630	4,023,807	10,632,823	2,722,706	1,745,509	977,197
181001	DD	DD	DD	DD	DD	DD	DD	DD
181002	2,560,384	235,544	40,845,270	11,170,936	29,674,334	5,559,456	3,498,301	2,061,155
190101	0	0	0	0	0	0	0	0
190102	0	0	0	0	0	0	0	0
190103	0	0	0	0	0	0	0	0
190104	0	0	0	0	0	0	0	0
190201	DD	DD	DD	DD	DD	DD	DD	DD
190202	0	0	0	0	0	0	0	0
190203	DD	DD	DD	DD	DD	DD	948	DD
190204	DD	DD	DD	DD	DD	DD	DD	DD
190205	7,610	1,050	DD	40,072	DD	DD	18,265	DD
190206	0	0	0	0	0	0	0	0
190207	DD	DD	DD	DD	DD	DD	DD	DD
190301	0	0	0	0	0	0	0	0
190303	0	0	0	0	0	0	0	0
190305	0	0	0	0	0	0	0	0
190401	DD	DD	DD	DD	DD	DD	DD	DD
190403	0	0	0	0	0	0	0	0
190404	DD	DD	DD	DD	DD	DD	DD	DD
190405	3,112	388	DD	12,494	DD	DD	5,899	DD
190406	0	0	0	0	0	0	0	0
190408	0	0	0	0	0	0	0	0
190501	0	0	0	0	0	0	0	0
200100	42,030	5,495	DD	207,774	DD	DD	92,194	DD
200200	DD	DD	DD	DD	DD	DD	DD	DD
200400	0	0	0	0	0	0	0	0
200500	DD	DD	DD	DD	DD	DD	DD	DD
200600	38,438	6,254	DD	DD	DD	DD	DD	DD

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S5. Quantity of Recoverable and Non-Recoverable Manure and Manure Nutrients Produced on AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Quantity of recoverable manure, wet weight (tons)	Quantity of recoverable manure, dry weight (tons)	Manure nitrogen <i>as excreted</i> (pounds)	Recoverable manure nitrogen (pounds)	Non-recoverable manure nitrogen (pounds)	Manure phosphorus <i>as excreted</i> (pounds)	Recoverable manure phosphorus (pounds)	Non-recoverable manure phosphorus (pounds)
200700	DD	DD	DD	DD	DD	DD	DD	DD
200800	DD	DD	DD	DD	DD	DD	DD	DD

Notes: Non-recoverable manure nitrogen includes nitrogen volatilized and nitrogen lost during on-farm collection, handling, and treatment. Non-recoverable manure phosphorus includes phosphorus lost during on-farm collection, handling, and treatment. For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
10100	846	116,527	51,819	0	0
10200	4,267	709,762	299,591	DD	DD
10300	7,736	1,343,986	566,204	40,995	DD
10400	2,925	411,151	186,679	3,568,217	1,428,697
10500	1,414	180,939	76,484	DD	DD
10600	2,296	334,104	143,437	49,824	22,998
10700	2,054	404,207	174,812	116,204	59,519
10801	17,178	2,958,511	1,251,973	DD	DD
10802	5,270	1,001,434	429,385	187,140	79,974
10900	2,212	399,779	174,311	115,994	57,909
11000	8,829	2,048,557	867,980	DD	DD
11100	8,922	1,551,795	655,600	57,998	24,521
20100	60,105	11,313,585	4,764,757	927,741	376,883
20200	51,628	9,036,153	3,814,894	507,772	215,074
20301	902	144,053	64,945	22,786	12,199
20302	49	3,940	2,312	182,503	117,560
20401	20,075	2,779,944	1,236,335	DD	DD
20402	40,221	7,251,959	3,256,262	5,423,789	2,410,773
20403	405	42,653	20,126	DD	DD
20501	86,151	13,067,436	5,550,050	954,236	466,551
20502	30,153	4,233,637	1,851,116	1,292,825	616,239
20503	194,286	37,593,330	16,605,698	25,654,702	11,753,776
20600	97,523	11,943,002	5,438,581	34,499,381	15,754,220
20700	170,610	22,061,173	9,984,351	36,866,512	17,444,775
20801	14,990	1,827,699	838,384	2,159,610	1,011,718
20802	21,885	2,380,180	1,152,533	4,185,113	1,940,805
30101	27,016	2,769,672	1,288,748	2,427,434	1,266,119
30102	26,593	2,214,152	1,137,979	5,824,024	3,074,174
30201	14,547	1,406,845	830,020	5,942,779	3,235,063
30202	73,083	7,073,507	4,078,217	18,446,559	10,299,091
30300	168,197	16,871,316	9,625,015	61,601,106	33,348,882
30401	82,620	8,082,985	3,769,689	27,799,268	12,913,193
30402	81,735	7,029,817	3,724,341	24,524,016	12,566,725
30501	47,518	3,902,161	1,835,807	17,221,602	8,338,799
30502	17,495	2,125,794	997,055	5,358,912	2,453,780
30601	56,054	4,707,908	2,157,125	35,154,692	15,965,223
30602	11,687	1,319,810	631,055	2,037,547	948,670
30701	44,407	3,863,629	1,764,520	22,412,840	9,981,016
30702	18,093	2,093,516	996,235	6,162,995	2,768,247
30801	3,336	DD	DD	237,536	116,205
30802	DD	DD	DD	DD	7,074
30901	10,170	2,242,329	947,779	DD	DD
30902	DD	316,121	142,413	418,971	205,478
31001	4,524	618,858	270,557	DD	401,613
31002	5,499	739,219	326,980	DD	DD
31101	3,351	616,062	272,605	1,117,435	512,864
31102	32,677	4,746,495	2,181,097	15,330,261	6,722,909
31200	9,082	703,478	334,888	2,983,970	1,358,436
31300	47,821	5,558,108	2,638,700	20,957,156	9,552,822
31401	4,202	334,205	159,108	1,748,717	758,939
31402	35,460	3,165,049	1,496,279	11,694,977	5,335,530
31403	15,660	1,500,999	696,569	6,393,279	2,914,038
31501	50,425	3,980,412	1,885,589	44,819,270	20,473,521
31502	8,799	502,435	244,111	2,151,014	998,797
31601	61,263	5,171,710	2,454,109	26,581,613	12,493,575
31602	4,807	459,002	224,401	803,183	363,732
31700	39,181	4,417,908	2,074,345	27,544,731	12,517,196
31800	55,043	6,579,794	3,044,026	34,026,963	15,572,995
40101	0	0	0	0	0
40102	2,295	161,878	69,982	DD	DD

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
40103	4,409	380,763	161,880	DD	DD
40201	DD	66,451	27,656	DD	DD
40202	1,107	103,014	44,693	0	0
40203	0	0	0	0	0
40301	114,014	19,270,757	8,141,325	2,176,536	950,398
40302	97,529	17,097,499	7,201,879	1,623,399	709,725
40400	14,413	2,868,379	1,208,565	91,300	43,285
40500	134,551	23,704,507	10,873,240	15,620,930	7,205,454
40601	36,170	5,273,530	2,335,949	1,653,955	897,500
40602	361	33,193	13,842	DD	DD
40700	8,898	1,044,033	443,621	DD	DD
40801	19,081	3,691,909	1,466,571	2,309,386	969,891
40802	28,161	4,917,532	2,092,892	1,300,020	546,506
40803	DD	DD	DD	0	0
40900	7,451	1,257,435	518,806	52,001	24,085
41000	64,811	12,426,315	5,924,631	10,142,710	4,481,414
41100	9,211	1,494,541	626,678	DD	DD
41201	26,718	4,946,852	2,104,017	DD	DD
41202	DD	DD	DD	0	0
41300	40,255	8,307,281	3,522,981	946,010	408,245
41401	6,717	1,301,216	551,945	DD	49,922
41402	58,188	11,597,274	4,933,192	1,332,090	643,514
41501	15,411	2,789,986	1,178,693	DD	DD
41502	DD	DD	DD	0	0
41503	34,596	5,932,528	2,513,110	72,908	31,402
50100	42,690	7,456,382	3,148,154	DD	DD
50200	13,385	2,235,567	954,882	76,631	40,558
50301	24,163	4,327,552	1,836,392	DD	DD
50302	8,242	1,023,200	457,506	DD	DD
50400	65,362	12,097,479	5,276,196	7,582,540	3,349,166
50500	15,193	1,418,799	624,866	DD	DD
50600	16,336	2,961,228	1,457,408	1,112,317	660,217
50701	DD	DD	DD	0	0
50702	108	7,861	3,922	4,091	2,494
50800	36,795	6,754,242	3,325,653	9,877,457	4,329,826
50901	1,742	187,148	86,041	26,298	14,462
50902	10,541	1,391,617	692,281	894,683	341,787
51001	9,825	723,057	343,177	152,971	72,228
51002	10,334	782,167	382,350	108,471	63,923
51100	59,728	7,196,705	3,418,607	9,305,431	4,286,310
51201	126,909	25,647,001	13,202,923	23,165,802	11,509,308
51202	63,977	11,542,602	6,217,294	15,955,507	7,598,519
51301	27,175	2,569,869	1,193,018	4,220,048	1,944,168
51302	17,594	1,914,794	939,603	DD	DD
51401	24,985	2,736,884	1,303,334	1,686,186	804,420
51402	13,648	2,150,726	1,137,830	4,122,908	1,976,126
60101	24,602	2,667,442	1,219,822	2,764,542	1,248,557
60102	11,606	1,044,197	486,205	449,616	216,222
60200	18,263	1,764,682	809,545	7,595,912	3,420,299
60300	75,600	6,739,648	3,217,857	26,524,315	12,087,559
60400	22,389	2,084,395	1,024,996	4,918,084	2,280,979
70101	42,090	4,079,340	1,770,476	3,406,453	1,710,378
70102	158,146	18,474,325	8,091,025	20,793,144	10,337,878
70200	166,620	31,818,963	15,819,558	27,564,467	14,859,299
70300	40,212	4,860,231	2,058,450	1,617,860	754,017
70400	151,107	29,605,410	12,932,250	9,539,666	4,862,358
70500	103,285	14,639,428	6,169,307	DD	DD
70600	135,275	30,331,515	13,334,630	5,040,733	2,557,323
70700	128,801	21,146,191	8,901,979	2,260,285	1,055,010
70801	80,257	18,007,145	9,500,476	7,197,347	4,227,716

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
70802	123,422	27,828,490	14,315,373	20,768,948	10,970,584
70900	136,201	29,639,309	12,605,984	6,835,965	3,160,044
71000	113,417	24,803,290	12,396,899	45,694,289	21,936,563
71100	31,237	4,958,817	2,578,614	2,373,135	1,347,714
71200	35,658	8,160,881	3,689,410	8,928,906	4,053,891
71300	40,046	8,747,259	4,878,806	4,027,032	2,749,048
71401	18,580	2,252,550	1,122,346	448,870	250,516
71402	30,807	5,411,958	2,707,542	1,792,341	832,750
80101	685	90,523	43,248	307,519	140,652
80102	21,398	2,797,480	1,393,440	8,270,832	3,835,232
80201	DD	DD	DD	0	0
80202	4,397	442,826	236,568	2,987,697	1,392,104
80203	4,176	543,896	292,456	348,369	158,722
80204	510	34,562	17,652	DD	DD
80301	DD	DD	DD	0	0
80302	4,346	438,744	245,035	280,064	140,954
80401	24,046	2,483,515	1,199,544	5,122,438	2,323,870
80402	26,077	3,002,580	1,391,968	20,236,611	9,237,572
80403	2,580	318,527	158,963	1,908,574	868,826
80500	1,199	195,695	DD	25,814	14,773
80601	48	7,269	4,864	DD	DD
80602	4,705	618,715	294,781	3,306,491	1,482,387
80701	DD	DD	DD	11,035	7,062
80702	14,107	1,589,939	704,741	2,947,015	1,290,149
80703	198	22,994	15,308	7,114	4,571
80801	1,759	156,029	100,378	26,023	16,626
80802	1,660	183,537	111,041	106,193	61,943
80901	DD	DD	DD	0	0
80902	918	135,580	61,521	DD	DD
80903	DD	DD	DD	4,382	DD
90100	5,592	467,553	215,448	130,272	DD
90201	32,595	4,306,214	2,012,485	7,102,361	3,455,050
90202	6,649	866,528	444,239	453,492	282,315
90203	9,488	1,173,380	578,990	1,195,940	645,420
90300	790	49,899	22,041	DD	DD
100100	DD	DD	DD	DD	DD
100200	4,268	699,402	334,582	159,189	98,182
100301	7,785	721,372	369,613	DD	DD
100302	20,438	1,204,347	653,056	145,569	93,431
100401	2,924	162,567	91,501	DD	DD
100402	1,941	207,698	106,642	23,189	15,188
100500	5,199	373,008	220,606	50,641	33,204
100600	2,710	140,552	98,175	16,025	10,761
100700	5,313	1,082,132	455,251	367,814	DD
100800	3,454	597,910	314,547	DD	DD
100901	463	DD	DD	DD	DD
100902	604	36,797	16,601	21,225	14,271
101000	4,338	628,752	372,066	158,195	96,569
101101	1,930	132,811	64,024	DD	DD
101102	3,477	244,863	87,279	DD	DD
101201	5,529	502,110	207,531	DD	DD
101202	2,591	308,025	173,381	49,718	25,722
101301	15,827	1,567,598	721,627	548,655	211,928
101302	11,278	1,002,740	433,680	264,271	DD
101303	5,899	361,502	212,262	DD	125,965
101401	27,355	3,195,136	1,416,668	635,451	406,795
101402	6,360	410,808	150,216	DD	DD
101500	20,921	3,517,356	1,265,644	DD	856,142
101600	88,156	12,829,446	5,994,770	3,352,087	1,622,183
101701	49,850	7,740,847	3,177,788	DD	DD

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
101702	122,095	24,860,316	11,185,538	15,142,783	7,042,442
101800	30,424	5,267,343	1,699,082	5,346,376	1,834,358
101900	53,124	9,412,028	3,814,083	30,197,703	10,759,528
102001	28,742	6,757,722	2,253,318	8,749,996	2,746,109
102002	21,538	4,222,273	1,715,864	3,513,361	1,805,834
102100	40,893	8,671,411	2,989,707	9,932,604	4,323,970
102200	88,346	18,002,285	6,469,521	12,748,177	4,789,895
102300	130,752	28,008,147	13,191,681	18,017,627	9,030,199
102400	53,963	9,765,275	4,551,447	8,132,653	4,149,581
102500	49,713	8,850,389	3,100,974	22,447,265	8,543,051
102600	31,007	3,666,353	1,590,968	12,757,555	3,805,166
102701	14,626	1,957,417	855,135	850,512	DD
102702	47,904	9,531,032	4,023,268	9,048,653	3,706,502
102801	24,373	3,024,097	1,504,830	9,113,130	5,658,962
102802	6,075	710,648	369,692	235,021	174,306
102901	64,152	6,544,851	3,514,428	6,673,259	3,512,150
102902	23,999	1,861,118	864,721	904,826	451,673
103001	38,735	4,912,870	2,611,707	9,183,398	4,508,649
103002	4,975	644,777	359,311	64,067	DD
110100	118,938	9,938,660	4,742,463	38,326,698	18,222,571
110200	10,960	1,248,114	585,259	5,365,821	1,871,112
110300	71,332	11,582,025	4,370,197	43,070,207	13,574,699
110400	18,678	3,370,197	1,250,256	26,809,705	9,394,973
110500	18,780	1,231,952	575,807	5,108,426	2,626,915
110600	12,066	884,210	444,201	DD	150,918
110701	13,217	1,109,690	562,741	405,836	215,918
110702	85,876	9,266,771	4,301,315	28,447,027	13,046,775
110800	DD	42,023	22,357	17,075	11,241
110901	15,559	2,790,285	951,253	11,480,285	3,520,581
110902	16,848	DD	DD	408,224	291,226
111001	28,133	3,846,768	1,542,143	30,921,262	11,995,562
111002	6,257	653,063	311,396	9,616,668	DD
111003	8,017	756,017	417,760	633,468	384,888
111101	60,865	5,982,254	2,841,304	23,581,386	10,936,411
111102	76,243	8,352,050	4,021,701	25,078,630	11,857,517
111201	25,469	4,473,090	1,793,540	31,333,143	9,220,062
111202	1,237	136,345	58,718	DD	DD
111203	9,012	1,051,255	372,181	3,460,441	962,167
111301	2,760	228,355	115,952	110,366	DD
111302	16,245	1,341,758	585,952	524,377	235,028
111303	16,914	1,129,791	527,319	DD	833,057
111401	57,858	6,132,103	2,978,512	15,222,228	7,061,175
111402	20,801	2,238,077	1,073,391	7,780,706	3,536,734
111403	44,869	5,920,319	2,656,926	13,496,418	6,082,629
120100	38,739	4,587,339	2,105,101	15,688,162	7,136,012
120200	32,694	3,390,483	1,559,801	12,937,334	5,921,340
120301	DD	DD	1,162,546	1,634,747	810,819
120302	5,628	632,020	331,364	1,201,502	560,864
120401	2,265	222,510	110,796	DD	DD
120402	841	89,583	56,205	29,412	18,999
120500	70,876	14,533,183	5,966,756	32,092,909	10,582,715
120601	5,944	400,579	210,862	DD	193,330
120602	25,853	3,828,805	1,663,788	4,221,292	1,966,201
120701	12,343	1,412,981	672,678	4,180,989	1,917,099
120702	18,521	2,997,271	1,330,537	4,124,451	1,994,985
120800	12,705	897,645	429,636	1,889,483	751,656
120901	6,643	673,774	291,300	1,944,403	745,828
120902	1,280	99,436	51,571	DD	DD
120903	2,767	260,473	119,388	197,166	95,145
120904	2,881	255,378	119,546	DD	DD

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
121001	4,430	528,351	253,721	1,436,238	612,028
121002	13,399	1,814,333	836,470	10,052,739	4,263,777
121003	2,571	225,752	121,654	DD	158,344
121004	1,715	170,319	88,354	DD	DD
121101	6,199	583,557	211,491	1,391,421	478,670
121102	2,572	162,502	84,290	1,129,334	333,298
130100	4,819	275,090	167,800	37,404	22,822
130201	780	47,738	31,006	33,973	22,374
130202	2,842	698,984	299,454	1,779,443	797,252
130301	DD	DD	DD	2,447,432	1,046,797
130302	684	105,733	45,252	2,041,113	864,075
130401	80	5,781	3,001	DD	DD
130402	DD	DD	DD	6,902	4,256
130403	DD	DD	DD	DD	DD
130500	DD	DD	DD	DD	DD
130600	6,867	1,858,886	788,268	7,913,922	3,331,926
130700	648	73,165	36,475	687,694	296,809
130800	DD	DD	DD	DD	119,321
130900	DD	DD	DD	DD	DD
140100	1,761	226,204	137,029	DD	DD
140200	2,315	369,699	196,919	DD	DD
140300	1,168	230,909	124,180	32,414	19,418
140401	901	61,619	25,922	16,952	9,828
140402	DD	7,544	3,047	0	0
140500	1,772	115,350	66,709	25,002	14,393
140600	3,003	522,549	243,761	252,050	129,737
140700	993	233,191	119,658	DD	DD
140801	1,315	DD	89,456	414,796	262,926
140802	497	41,963	25,441	276,966	168,251
150100	797	135,418	75,113	265,429	169,249
150200	311	41,527	20,640	DD	DD
150301	DD	46,401	31,750	DD	DD
150302	DD	DD	DD	66,924	44,516
150400	622	145,273	DD	128,339	86,163
150501	DD	DD	DD	4,436,969	1,928,449
150502	DD	DD	DD	DD	DD
150503	DD	DD	DD	8,854,086	2,953,169
150601	DD	DD	DD	833,312	377,881
150602	38	DD	1,334	115,739	74,226
150701	DD	DD	DD	8,076,444	3,384,170
150702	DD	DD	DD	DD	DD
150801	0	0	0	DD	DD
150802	0	0	0	0	0
150803	DD	DD	DD	11,628	6,262
160101	1,522	106,163	55,770	DD	DD
160102	16,120	2,700,402	1,171,679	1,964,202	829,400
160201	3,060	663,905	274,583	82,263	44,996
160202	4,613	1,035,899	456,322	1,542,997	635,348
160203	4,486	1,200,440	470,845	DD	DD
160300	14,389	3,063,260	1,440,986	8,668,448	DD
160401	1,506	204,023	106,165	DD	47,310
160402	DD	DD	DD	5,381	3,190
160501	410	82,685	42,243	DD	DD
160502	2,878	699,877	304,089	552,375	235,198
160503	DD	33,491	20,069	DD	DD
160600	1,665	289,590	161,625	DD	204,174
170101	182	19,340	10,893	DD	DD
170102	2,613	413,592	188,325	144,721	85,193
170103	1,965	189,990	89,432	39,088	20,108
170200	12,876	3,626,523	1,578,879	6,928,156	2,502,437

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S6. Farm-level Excess Manure Nutrients and Related Results from the Land Application Simulation Model on AEOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving on-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	Farm-level excess manure nitrogen (pounds)	Farm-level excess manure phosphorus (pounds)
170300	15,215	4,615,850	1,945,908	4,784,846	1,991,106
170401	2,058	198,133	90,666	8,793	5,413
170402	89,192	27,375,045	11,560,933	20,623,036	8,485,531
170501	28,176	7,670,569	3,303,218	11,300,756	4,307,970
170502	1,138	134,723	57,938	24,361	14,646
170601	3,824	445,306	227,290	130,172	54,642
170602	949	108,229	57,581	DD	DD
170603	792	66,574	32,247	10,218	DD
170701	7,786	DD	518,099	6,250,959	2,289,063
170702	1,695	101,904	41,443	42,084	24,493
170703	1,945	197,912	101,023	140,850	74,594
170800	6,951	1,105,900	477,170	2,322,678	1,056,138
170900	14,230	2,751,026	1,183,092	5,816,520	2,509,881
171001	5,955	697,370	301,842	1,604,140	649,344
171002	11,381	1,325,893	568,332	1,448,500	613,115
171003	4,183	405,508	182,939	DD	144,813
171100	31,273	7,744,729	3,274,870	2,839,206	1,196,204
171200	DD	165,284	104,818	30,289	19,401
180101	17,566	2,608,819	1,108,616	4,470,653	1,920,985
180102	4,368	612,363	293,312	321,363	132,322
180200	280	47,952	DD	9,335	5,771
180201	14,540	3,627,482	1,552,669	2,011,806	890,711
180300	172,425	56,846,112	23,904,546	57,782,950	24,618,243
180400	158,437	49,310,825	20,751,142	47,310,091	21,123,237
180500	6,284	726,757	310,905	885,453	403,357
180600	3,034	464,663	196,340	902,130	440,426
180701	125	15,618	7,929	293,504	143,902
180702	3,890	1,295,685	532,737	17,166,322	7,148,951
180703	641	41,998	20,306	3,629,658	1,530,049
180800	83	8,572	4,601	DD	DD
180901	DD	DD	DD	DD	DD
180902	DD	1,500,224	632,751	2,523,583	1,112,758
181001	DD	DD	DD	DD	DD
181002	3,740	1,001,973	413,833	10,168,963	3,084,468
190101	0	0	0	0	0
190102	0	0	0	0	0
190103	0	0	0	0	0
190104	0	0	0	0	0
190201	DD	DD	DD	0	0
190202	0	0	0	0	0
190203	DD	DD	DD	DD	DD
190204	DD	DD	DD	0	0
190205	655	34,077	14,566	DD	DD
190206	0	0	0	0	0
190207	0	0	0	DD	DD
190301	0	0	0	0	0
190303	0	0	0	0	0
190305	0	0	0	0	0
190401	DD	DD	DD	0	0
190403	0	0	0	0	0
190404	DD	DD	DD	DD	DD
190405	199	DD	5,306	1,021	592
190406	0	0	0	0	0
190408	0	0	0	0	0
190501	0	0	0	0	0
200100	DD	DD	DD	206,168	91,115
200200	DD	DD	DD	DD	DD
200400	0	0	0	0	0
200500	0	0	0	DD	DD
200600	DD	DD	DD	DD	DD
200700	DD	DD	DD	DD	DD
200800	0	0	0	DD	DD

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture,**” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
10100	0	0	0	0	0
10200	310	60,579	25,739	0	0
10300	202	40,995	22,200	0	0
10400	12,552	1,116,248	446,940	2,451,970	981,757
10500	874	76,283	55,862	0	0
10600	302	49,824	22,998	0	0
10700	569	116,204	59,519	0	0
10801	1,036	224,798	92,328	0	0
10802	832	187,140	79,974	0	0
10900	536	115,994	57,909	0	0
11000	24,540	2,757,507	1,110,649	0	0
11100	609	57,998	24,521	0	0
20100	5,451	927,741	376,883	0	0
20200	3,132	507,772	215,074	0	0
20301	124	22,786	12,199	0	0
20302	1,317	182,503	117,560	0	0
20401	10,258	1,659,406	689,794	0	0
20402	38,808	5,423,789	2,410,773	0	0
20403	948	126,143	49,996	0	0
20501	5,432	954,236	466,551	0	0
20502	9,384	1,292,825	616,239	0	0
20503	175,838	25,654,702	11,753,776	0	0
20600	282,153	34,499,381	15,754,220	0	0
20700	384,279	36,866,512	17,444,775	0	0
20801	20,224	2,159,610	1,011,718	0	0
20802	37,261	4,185,113	1,940,805	0	0
30101	22,481	2,427,434	1,266,119	0	0
30102	44,488	5,824,024	3,074,174	0	0
30201	42,582	5,942,779	3,235,063	0	0
30202	150,682	18,446,559	10,299,091	0	0
30300	278,835	22,391,473	12,122,032	39,209,634	21,226,850
30401	280,660	24,524,122	11,391,836	3,275,146	1,521,356
30402	233,080	24,524,016	12,566,725	0	0
30501	238,406	17,221,602	8,338,799	0	0
30502	48,265	5,358,912	2,453,780	0	0
30601	288,167	24,236,443	11,006,787	10,918,249	4,958,436
30602	15,261	2,037,547	948,670	0	0
30701	216,145	22,412,840	9,981,016	0	0
30702	47,337	6,162,995	2,768,247	0	0
30801	1,137	237,536	116,205	0	0
30802	82	12,884	7,074	0	0
30901	30,212	3,558,242	1,474,966	0	0
30902	1,594	418,971	205,478	0	0
31001	4,536	884,167	401,613	0	0
31002	19,461	3,073,917	1,246,651	0	0
31101	10,985	1,117,435	512,864	0	0
31102	107,468	15,330,261	6,722,909	0	0
31200	37,907	2,983,970	1,358,436	0	0
31300	121,131	20,957,156	9,552,822	0	0
31401	17,577	1,748,717	758,939	0	0
31402	116,763	11,694,977	5,335,530	0	0
31403	67,955	6,393,279	2,914,038	0	0
31501	360,114	28,716,936	13,117,947	16,102,333	7,355,574
31502	31,468	2,151,014	998,797	0	0
31601	261,599	26,581,613	12,493,575	0	0
31602	8,851	803,183	363,732	0	0
31700	195,227	20,984,921	9,536,211	6,559,810	2,980,985
31800	211,628	24,407,726	11,170,594	9,619,237	4,402,401
40101	0	0	0	0	0
40102	11	1,261	855	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
40103	351	27,393	12,232	0	0
40201	3	120	69	0	0
40202	0	0	0	0	0
40203	0	0	0	0	0
40301	12,979	2,176,536	950,398	0	0
40302	8,781	1,623,399	709,725	0	0
40400	536	91,300	43,285	0	0
40500	105,002	15,620,930	7,205,454	0	0
40601	12,474	1,653,955	897,500	0	0
40602	463	21,819	9,225	0	0
40700	508	55,382	23,377	0	0
40801	13,065	2,309,386	969,891	0	0
40802	8,057	1,300,020	546,506	0	0
40803	0	0	0	0	0
40900	363	52,001	24,085	0	0
41000	58,343	10,142,710	4,481,414	0	0
41100	512	113,689	53,490	0	0
41201	5,780	1,021,393	410,590	0	0
41202	0	0	0	0	0
41300	4,616	946,010	408,245	0	0
41401	864	112,509	49,922	0	0
41402	6,991	1,332,090	643,514	0	0
41501	633	115,876	48,221	0	0
41502	0	0	0	0	0
41503	375	72,908	31,402	0	0
50100	5,809	986,820	414,120	0	0
50200	484	76,631	40,558	0	0
50301	2,493	395,115	176,280	0	0
50302	552	93,947	39,325	0	0
50400	42,733	7,582,540	3,349,166	0	0
50500	3,244	531,168	268,379	0	0
50600	5,621	1,112,317	660,217	0	0
50701	0	0	0	0	0
50702	18	4,091	2,494	0	0
50800	58,431	9,877,457	4,329,826	0	0
50901	188	26,298	14,462	0	0
50902	5,810	894,683	341,787	0	0
51001	964	152,971	72,228	0	0
51002	753	108,471	63,923	0	0
51100	58,928	9,305,431	4,286,310	0	0
51201	124,119	23,165,802	11,509,308	0	0
51202	93,296	15,955,507	7,598,519	0	0
51301	33,924	4,220,048	1,944,168	0	0
51302	22,858	2,695,086	1,172,236	0	0
51401	11,497	1,686,186	804,420	0	0
51402	24,840	4,122,908	1,976,126	0	0
60101	21,855	2,764,542	1,248,557	0	0
60102	3,535	449,616	216,222	0	0
60200	89,055	7,595,912	3,420,299	0	0
60300	283,009	26,524,315	12,087,559	0	0
60400	44,091	4,918,084	2,280,979	0	0
70101	33,753	3,406,453	1,710,378	0	0
70102	158,140	20,793,144	10,337,878	0	0
70200	155,207	27,564,467	14,859,299	0	0
70300	10,986	1,617,860	754,017	0	0
70400	51,440	9,539,666	4,862,358	0	0
70500	41,526	5,432,068	2,785,623	0	0
70600	24,178	5,040,733	2,557,323	0	0
70700	12,718	2,260,285	1,055,010	0	0
70801	34,426	7,197,347	4,227,716	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
70802	101,276	20,768,948	10,970,584	0	0
70900	32,244	6,835,965	3,160,044	0	0
71000	235,112	45,694,289	21,936,563	0	0
71100	14,010	2,373,135	1,347,714	0	0
71200	41,657	8,928,906	4,053,891	0	0
71300	18,734	4,027,032	2,749,048	0	0
71401	3,380	448,870	250,516	0	0
71402	9,830	1,792,341	832,750	0	0
80101	1,748	307,519	140,652	0	0
80102	59,057	8,270,832	3,835,232	0	0
80201	0	0	0	0	0
80202	15,210	2,987,697	1,392,104	0	0
80203	1,751	348,369	158,722	0	0
80204	1,661	339,082	153,024	0	0
80301	0	0	0	0	0
80302	1,880	280,064	140,954	0	0
80401	40,346	5,122,438	2,323,870	0	0
80402	120,799	20,236,611	9,237,572	0	0
80403	9,861	1,908,574	868,826	0	0
80500	127	25,814	14,773	0	0
80601	59	10,813	7,302	0	0
80602	21,902	3,306,491	1,482,387	0	0
80701	52	11,035	7,062	0	0
80702	22,929	2,947,015	1,290,149	0	0
80703	33	7,114	4,571	0	0
80801	137	26,023	16,626	0	0
80802	941	106,193	61,943	0	0
80901	0	0	0	0	0
80902	98	13,634	6,143	0	0
80903	61	4,382	2,886	0	0
90100	1,004	130,272	94,390	0	0
90201	46,810	7,102,361	3,455,050	0	0
90202	2,990	453,492	282,315	0	0
90203	8,269	1,195,940	645,420	0	0
90300	42	4,717	3,178	0	0
100100	156	4,309	2,829	0	0
100200	638	159,189	98,182	0	0
100301	3,292	205,057	100,705	0	0
100302	2,589	145,569	93,431	0	0
100401	1,087	108,395	52,184	0	0
100402	93	23,189	15,188	0	0
100500	358	50,641	33,204	0	0
100600	79	16,025	10,761	0	0
100700	1,292	367,814	150,980	0	0
100800	224	54,052	35,492	0	0
100901	21	5,796	3,844	0	0
100902	83	21,225	14,271	0	0
101000	675	158,195	96,569	0	0
101101	312	39,279	19,354	0	0
101102	111	9,914	6,530	0	0
101201	19,460	1,047,859	401,223	0	0
101202	302	49,718	25,722	0	0
101301	4,441	548,655	211,928	0	0
101302	2,357	264,271	127,807	0	0
101303	5,644	411,442	125,965	0	0
101401	6,650	635,451	406,795	0	0
101402	11,842	995,804	441,977	0	0
101500	15,489	2,288,066	856,142	0	0
101600	25,498	3,352,087	1,622,183	0	0
101701	40,441	5,486,255	2,305,062	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
101702	88,563	15,142,783	7,042,442	0	0
101800	28,785	5,346,376	1,834,358	0	0
101900	161,281	30,197,703	10,759,528	0	0
102001	42,673	8,749,996	2,746,109	0	0
102002	21,117	3,513,361	1,805,834	0	0
102100	52,255	9,932,604	4,323,970	0	0
102200	71,079	12,748,177	4,789,895	0	0
102300	99,147	18,017,627	9,030,199	0	0
102400	49,153	8,132,653	4,149,581	0	0
102500	124,767	22,447,265	8,543,051	0	0
102600	84,206	12,757,555	3,805,166	0	0
102701	4,754	850,512	424,055	0	0
102702	48,849	9,048,653	3,706,502	0	0
102801	60,114	9,113,130	5,658,962	0	0
102802	1,272	235,021	174,306	0	0
102901	47,223	6,673,259	3,512,150	0	0
102902	6,427	904,826	451,673	0	0
103001	56,382	9,183,398	4,508,649	0	0
103002	403	64,067	45,220	0	0
110100	337,210	38,326,698	18,222,571	0	0
110200	44,892	5,365,821	1,871,112	0	0
110300	228,563	43,070,207	13,574,699	0	0
110400	126,251	26,809,705	9,394,973	0	0
110500	53,421	5,108,426	2,626,915	0	0
110600	2,235	332,529	150,918	0	0
110701	3,027	405,836	215,918	0	0
110702	216,847	28,447,027	13,046,775	0	0
110800	660	17,075	11,241	0	0
110901	45,861	11,480,285	3,520,581	0	0
110902	3,304	408,224	291,226	0	0
111001	122,100	30,921,262	11,995,562	0	0
111002	60,142	9,616,668	4,849,169	0	0
111003	5,646	633,468	384,888	0	0
111101	201,476	23,581,386	10,936,411	0	0
111102	205,701	25,078,630	11,857,517	0	0
111201	160,295	31,333,143	9,220,062	0	0
111202	7,516	1,137,712	346,695	0	0
111203	16,854	3,460,441	962,167	0	0
111301	551	110,366	62,907	0	0
111302	3,904	524,377	235,028	0	0
111303	16,328	1,924,068	833,057	0	0
111401	131,874	15,222,228	7,061,175	0	0
111402	39,777	7,780,706	3,536,734	0	0
111403	100,646	13,496,418	6,082,629	0	0
120100	120,016	15,688,162	7,136,012	0	0
120200	83,757	12,937,334	5,921,340	0	0
120301	13,327	1,634,747	810,819	0	0
120302	14,257	1,201,502	560,864	0	0
120401	2,131	309,093	160,039	0	0
120402	366	29,412	18,999	0	0
120500	125,214	32,092,909	10,582,715	0	0
120601	3,243	479,313	193,330	0	0
120602	35,474	4,221,292	1,966,201	0	0
120701	33,187	4,180,989	1,917,099	0	0
120702	33,427	4,124,451	1,994,985	0	0
120800	13,153	1,889,483	751,656	0	0
120901	20,872	1,944,403	745,828	0	0
120902	1,305	189,952	85,464	0	0
120903	1,082	197,166	95,145	0	0
120904	22,574	3,261,808	1,296,453	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
121001	11,599	1,436,238	612,028	0	0
121002	97,839	10,052,739	4,263,777	0	0
121003	4,367	411,912	158,344	0	0
121004	1,213	234,339	85,410	0	0
121101	10,521	1,391,421	478,670	0	0
121102	10,551	1,129,334	333,298	0	0
130100	156	37,404	22,822	0	0
130201	189	33,973	22,374	0	0
130202	17,026	1,779,443	797,252	0	0
130301	12,916	2,447,432	1,046,797	0	0
130302	12,455	2,041,113	864,075	0	0
130401	509	129,562	58,695	0	0
130402	42	6,902	4,256	0	0
130403	75	4,671	2,481	0	0
130500	3,022	914,901	374,013	0	0
130600	37,267	7,913,922	3,331,926	0	0
130700	6,015	687,694	296,809	0	0
130800	3,926	400,212	119,321	0	0
130900	2,305	271,203	78,135	0	0
140100	3,672	488,540	202,078	0	0
140200	1,695	452,799	186,977	0	0
140300	170	32,414	19,418	0	0
140401	166	16,952	9,828	0	0
140402	0	0	0	0	0
140500	323	25,002	14,393	0	0
140600	1,290	252,050	129,737	0	0
140700	1,937	302,577	155,212	0	0
140801	3,964	414,796	262,926	0	0
140802	3,353	276,966	168,251	0	0
150100	2,172	265,429	169,249	0	0
150200	27,522	2,090,981	1,286,416	38,643	23,774
150301	352	121,025	63,824	0	0
150302	404	66,924	44,516	0	0
150400	553	128,339	86,163	0	0
150501	15,084	4,436,969	1,928,449	0	0
150502	1,400	389,632	186,673	0	0
150503	47,895	8,854,086	2,953,169	0	0
150601	4,525	833,312	377,881	0	0
150602	786	115,739	74,226	0	0
150701	57,074	8,076,444	3,384,170	0	0
150702	13,123	3,297,357	1,105,491	0	0
150801	1	357	242	0	0
150802	0	0	0	0	0
150803	151	11,628	6,262	0	0
160101	64	14,144	9,059	0	0
160102	10,536	1,964,202	829,400	0	0
160201	379	82,263	44,996	0	0
160202	7,241	1,542,997	635,348	0	0
160203	5,469	1,348,801	552,334	0	0
160300	74,775	8,668,448	4,869,949	0	0
160401	795	111,696	47,310	0	0
160402	89	5,381	3,190	0	0
160501	157	50,891	22,995	0	0
160502	1,826	552,375	235,198	0	0
160503	1,823	224,179	121,360	0	0
160600	2,910	407,579	204,174	0	0
170101	185	10,517	4,575	0	0
170102	640	144,721	85,193	0	0
170103	624	39,088	20,108	0	0
170200	26,580	6,928,156	2,502,437	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
170300	16,124	4,784,846	1,991,106	0	0
170401	47	8,793	5,413	0	0
170402	65,971	20,623,036	8,485,531	0	0
170501	37,681	11,300,756	4,307,970	0	0
170502	106	24,361	14,646	0	0
170601	381	130,172	54,642	0	0
170602	13	1,227	757	0	0
170603	184	10,218	6,237	0	0
170701	21,721	6,250,959	2,289,063	0	0
170702	128	42,084	24,493	0	0
170703	1,506	140,850	74,594	0	0
170800	26,139	2,322,678	1,056,138	0	0
170900	46,735	5,816,520	2,509,881	0	0
171001	16,187	1,604,140	649,344	0	0
171002	13,845	1,448,500	613,115	0	0
171003	3,330	321,432	144,813	0	0
171100	15,293	2,839,206	1,196,204	0	0
171200	327	30,289	19,401	0	0
180101	51,738	4,470,653	1,920,985	0	0
180102	2,883	321,363	132,322	0	0
180200	104	9,335	5,771	0	0
180201	6,732	2,011,806	890,711	0	0
180300	238,129	57,782,950	24,618,243	0	0
180400	222,870	47,310,091	21,123,237	0	0
180500	4,520	885,453	403,357	0	0
180600	12,361	902,130	440,426	0	0
180701	3,411	293,504	143,902	0	0
180702	11,417	1,895,570	789,414	15,270,752	6,359,537
180703	10,753	827,048	348,634	2,802,610	1,181,414
180800	183	16,834	10,313	0	0
180901	11	809	465	0	0
180902	10,976	1,224,421	539,901	1,299,162	572,857
181001	3,287	130,703	54,872	840,151	352,712
181002	38,333	10,168,963	3,084,468	0	0
190101	0	0	0	0	0
190102	0	0	0	0	0
190103	0	0	0	0	0
190104	0	0	0	0	0
190201	0	0	0	0	0
190202	0	0	0	0	0
190203	10	631	363	0	0
190204	0	0	0	0	0
190205	117	5,995	3,699	0	0
190206	0	0	0	0	0
190207	12	221	149	0	0
190301	0	0	0	0	0
190303	0	0	0	0	0
190305	0	0	0	0	0
190401	0	0	0	0	0
190403	0	0	0	0	0
190404	5	311	209	0	0
190405	29	1,021	592	0	0
190406	0	0	0	0	0
190408	0	0	0	0	0
190501	0	0	0	0	0
200100	2,735	206,168	91,115	0	0
200200	192	13,814	8,716	0	0
200400	0	0	0	0	0
200500	30	1,825	1,333	0	0
200600	1,581	121,096	53,970	289,029	128,814

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.

Table S7. Off-Farm Excess Manure Nutrients and Related Results from the Land Application Simulation Model on Non-AFOs, by 6-digit HUC, Derived from the 2007 Census of Agriculture Database—**continued**

6-digit HUC	Cropland and pastureland acres receiving off-farm manure applications in the model simulation	Manure nitrogen applied (pounds) in the model simulation	Manure phosphorus applied (pounds) in the model simulation	HUC 6-level excess manure nitrogen (pounds)	HUC 6-level excess manure phosphorus (pounds)
200700	380	14,524	8,543	0	0
200800	0	0	0	0	0

Notes: For complete definitions of variables, see the USDA/NRCS report entitled “**Estimates of Recoverable and Non-Recoverable Manure Nutrients Based on the Census of Agriculture**,” authored by Robert L. Kellogg, David C. Moffitt, and Noel Gollehon, dated September, 2014. For these results, the off-farm land application simulation was conducted at the *6-digit HUC level*. National results reported in the report, however, are for the off-farm land application simulation conducted at the *county level*. Consequently, the national totals for the results shown in this table differ from those in the full report. For example, cropland and pastureland acres receiving off-farm manure applications in the model simulation conducted at the *county level* totaled 10.992 million acres (table 16), compared to 12.337 million acres for the simulation conducted at the *6-digit HUC level*. Consequently, total amounts of manure nutrients applied are larger and total amounts of excess manure nutrients are smaller here than reported in table 16. There were no disclosure issues for these results.