

Supplementary Material.

Table S1. Tonnes and proportions of total HANPP and HANPP from crops in 1997, 2002, 2007 and 2012 derived from livestock grazing, timber, and crops allocated to human food, livestock feed, biofiber, biofuel and exports for a) all HANPP, b) all crops, and c) corn grain. These data are graphed in Figure 3.

	1997		2002		2007		2012	
	Million tonnes	Prop	Million tonnes	Prop	Million tonnes	Prop	Million tonnes	Prop
<i>Total HANPP</i>								
Direct food	101	.129	89	.124	105	.126	95	.132
Livestock feed	395	.504	374	.521	392	.470	305	.422
Biofiber	141	.180	121	.169	140	.168	97	.134
Biofuel	11	.014	15	.020	56	.068	98	.136
Exports	135	.173	118	.165	141	.169	127	.176
Total	784	1	717	1	834	1	722	1
<i>Crop HANPP</i>								
Direct food	101	.181	89	.172	105	.170	96	.172
Livestock feed	319	.570	298	.579	320	.520	240	.435
Biofiber	2	.004	2	.019	1	.002	1	.002
Biofuel	11	.019	15	.028	56	.092	98	.178
Exports	126	.225	112	.217	133	.216	118	.213
Total	559	1	515	1	615	1	552	1
<i>Corn HANPP</i>								
Direct food	29	.146	27	.138	35	.127	26	.115
Livestock feed	121	.600	115	.596	138	.494	83	.361
Biofiber	0	.000	0	.000	0	.000	0	.000
Biofuel	10	.050	14	.072	53	.189	92	.401
Exports	41	.204	38	.194	53	.19	28	.123
Total	201	1	193	1	280	1	229	1

Table S2. Mass (in kilotonnes) and proportions of total HANPP allocated to food, feed, fiber fuel and exports by U.S. state in 2012. The item with the highest proportion in each state is italicized. These data are mapped in Figure 4a.

	Total	Food		Feed		Fiber		Fuel		Exports	
State	kT	kT	Prop	kT	Prop	kT	Prop	kT	Prop	kT	Prop
Alabama	12477	505	.040	3041	.244	7374	.591	272	.022	1285	.103
Arizona	3270	85	.027	2753	.842	264	.081	0	.000	167	.051
Arkansas	16588	1748	.106	4400	.265	4880	.294	1329	.080	4231	.255
California	14504	4271	.294	3153	.217	3147	.217	352	.024	3581	.247
Colorado	11024	1516	.137	6634	.602	280	.025	1147	.104	1448	.131
Connecticut	444	16	.036	229	.516	144	.326	34	.077	20	.046
Delaware	991	108	.109	392	.395	52	.053	220	.222	220	.222
Florida	9962	2627	.264	2479	.249	4109	.413	52	.005	695	.070
Georgia	16413	1754	.107	2675	.163	9120	.556	493	.030	2371	.144
Idaho	12210	3007	.246	5420	.444	1836	.150	0	.000	1947	.160
Illinois	41315	3819	.092	17027	.412	127	.003	11576	.280	8766	.212
Indiana	21193	1749	.083	9119	.430	342	.016	5423	.256	4560	.215
Iowa	56106	4668	.083	24423	.435	447	.008	16671	.297	9897	.176
Kansas	29536	5949	.201	11049	.374	162	.005	4052	.137	8323	.282
Kentucky	11165	719	.064	4409	.395	3230	.289	984	.088	1823	.163
Louisiana	12089	1482	.123	2230	.185	5407	.447	953	.079	2016	.167
Maine	2799	144	.052	690	.247	1690	.604	32	.012	242	.086
Maryland	3503	378	.108	1444	.412	453	.129	469	.134	760	.217
Massachusetts	442	24	.055	292	.661	75	.169	30	.067	21	.047
Michigan	16201	1963	.121	4865	.300	3766	.232	2810	.173	2797	.173
Minnesota	47496	5859	.123	18671	.393	2241	.047	12177	.256	8547	.180
Mississippi	12724	843	.066	4369	.343	3674	.289	1268	.100	2570	.201
Missouri	17988	1404	.078	9143	.508	1270	.071	2367	.132	3804	.211
Montana	16108	4214	.262	7878	.489	839	.052	51	.003	3127	.194
Nebraska	40893	4064	.100	18647	.456	120	.003	11399	.279	6663	.163
Nevada	1755	16	.009	1686	.961	44	.025	0	.000	8	.005
New Hampshire	655	8	.012	263	.402	322	.492	19	.029	43	.065
New Jersey	824	64	.078	445	.540	109	.132	93	.113	112	.136
New Mexico	3850	109	.028	3341	.868	229	.059	53	.014	117	.031
New York	7931	511	.064	5786	.729	271	.034	802	.101	561	.071
North Carolina	13215	1124	.085	4923	.372	3438	.260	940	.071	2792	.211
North Dakota	36482	10468	.287	12299	.337	0	.000	3836	.105	9879	.271
Ohio	19477	1472	.076	8081	.415	1758	.090	4032	.207	4134	.212
Oklahoma	11255	2147	.191	5355	.476	770	.068	334	.030	2651	.235
Oregon	12184	974	.080	3466	.284	6183	.507	0	.000	1562	.128
Pennsylvania	12079	519	.043	6554	.543	2867	.237	1161	.096	979	.081
Rhode Island	109	3	.029	57	.523	40	.367	5	.042	4	.040
South Carolina	9304	421	.045	1529	.164	5751	.618	350	.038	1253	.135

South Dakota	30243	3500	.116	17007	.562	220	.007	4830	.160	4687	.155
Tennessee	9961	555	.056	3608	.362	3392	.341	775	.078	1630	.164
Texas	24626	2485	.101	10861	.441	4371	.177	2567	.104	4341	.177
Utah	3079	63	.021	2896	.940	98	.031	0	.000	22	.007
Vermont	1492	28	.019	1065	.714	243	.163	96	.064	60	.040
Virginia	10614	361	.034	4203	.396	4617	.435	321	.030	1111	.105
Washington	14836	3261	.220	3265	.220	5091	.343	211	.014	3008	.203
West Virginia	1816	20	.011	1382	.763	317	.175	40	.022	52	.029
Wisconsin	16485	1561	.095	7708	.468	1410	.086	3496	.212	2310	.140
Wyoming	3792	276	.073	3269	.862	75	.020	54	.014	117	.031
TOTAL	673502	82862	.123	274482	.408	96667	.144	98175	.146	121316	.180

Table S3. Mass (in kilotonnes) and proportions of crop-based HANPP allocated to food, feed, fiber fuel and exports by U.S. state for 2012. The item with the highest proportion in each state is italicized. These data are mapped in Figure 4b.

	Total	Food		Feed		Fiber		Fuel		Exports	
State	kT	kT	Prop	kT	Prop	kT	Prop	kT	Prop	kT	Prop
Alabama	3153	505	.160	1760	.558	34	.011	272	.086	583	.185
Arizona	1983	85	.043	1733	.874	26	.013	0	.000	137	.069
Arkansas	9996	1748	.175	3113	.311	46	.005	1329	.133	3761	.376
California	9142	4271	.467	1267	.139	54	.006	352	.038	3198	.350
Colorado	8701	1516	.174	4619	.531	0	.000	1147	.132	1419	.163
Connecticut	283	16	.057	221	.781	0	.000	34	.121	12	.041
Delaware	899	108	.120	356	.396	0	.000	220	.245	215	.239
Florida	3593	2627	.731	649	.181	5	.002	52	.014	259	.072
Georgia	5200	1754	.337	1379	.265	137	.026	493	.095	1436	.276
Idaho	8854	3007	.340	4129	.466	0	.000	0	.000	1718	.194
Illinois	40416	3819	.094	16263	.402	0	.000	11576	.286	8758	.217
Indiana	20073	1749	.087	8363	.417	0	.000	5423	.270	4539	.226
Iowa	54679	4668	.085	23470	.429	0	.000	16671	.305	9870	.181
Kansas	26032	5949	.229	7716	.296	1	.000	4052	.156	8314	.319
Kentucky	5604	719	.128	2274	.406	0	.000	984	.176	1627	.290
Louisiana	5509	1482	.269	1574	.286	20	.004	953	.173	1479.	.269
Maine	876	144	.165	667	.761	0	.000	32.	.037	33	.037
Maryland	2840	378	.133	1268	.446	0	.000	469	.165	727	.256
Massachusetts	353	24	.069	288	.815	0	.000	30	.084	11	.033
Michigan	11867	1963	.165	4566	.385	0	.000	2810	.237	2528	.213
Minnesota	44715	5859	.131	18298	.409	0	.000	12177	.272	8380	.187
Mississippi	7530	843	.112	3240	.430	41	.005	1268	.168	2138	.284
Missouri	14012	1404	.100	6482	.463	31	.002	2367	.169	3727	.266
Montana	11437	4214	.368	4150	.363	0	.000	51	.004	3022	.264
Nebraska	37851	4064	.107	15733	.416	0	.000	11399	.301	6655	.176
Nevada	872	16	.018	854	.979	0	.000	0	.000	3	.003
New Hampshire	296	8	.026	262	.887	0	.000	19	.065	7	.022
New Jersey	688	64	.093	425	.617	0	.000	93	.136	106	.154
New Mexico	1182	109	.092	927	.784	3	.003	53	.045	89	.076
New York	7403	511	.069	5563	.751	0	.000	802	.108	528	.071
North Carolina	8874	1124	.127	4379	.493	53	.006	940	.106	2379	.268
North Dakota	34128	10468	.307	9945	.291	0	.000	3836	.112	9879	.289
Ohio	16519	1472	.089	6988	.423	0	.000	4032	.244	4027	.244
Oklahoma	6885	2147	.312	1809	.263	10	.001	334	.048	2585	.375
Oregon	4220	974	.231	2431	.576	0	.000	0	.000	816	.193
Pennsylvania	8967	519	.058	6489	.724	0	.000	1161	.129	799	.089
Rhode Island	48	3	.066	38	.802	0	.000	5	.096	2	.035
South Carolina	2445	421	.172	967	.395	26	.011	350	.143	681	.279
South Dakota	27430	3500	.128	14439	.526	0	.000	4830	.176	4661	.170
Tennessee	4239	555	.131	1483	.350	31	.007	775	.183	1395	.329

Texas	12321	2485	.202	3103	.252	240	.019	2567	.208	3926	.319
Utah	1756	63	.036	1681	.957	0	.000	0	.000	13	.007
Vermont	1207	28	.023	1054	.873	0	.000	96	.079	30	.024
Virginia	3728	361	.097	2319	.622	7	.002	321	.086	720	.193
Washington	8296	3261	.393	2426	.292	0	.000	211	.025	2398	.289
West Virginia	692	20	.029	604	.872	0	.000	40	.058	29	.042
Wisconsin	14324	1561	.109	7077	.494	0	.000	3496	.244	2190	.153
Wyoming	1641	276	.168	1202	.733	0	.000	54	.033	108	.066
TOTAL	503762	82862	.164	210044	0.417	767	0.002	98175	.195	111914	.222