Economic Impacts of the Green Industry in the United States

Final Report to the National Urban and Community Forestry Advisory Committee

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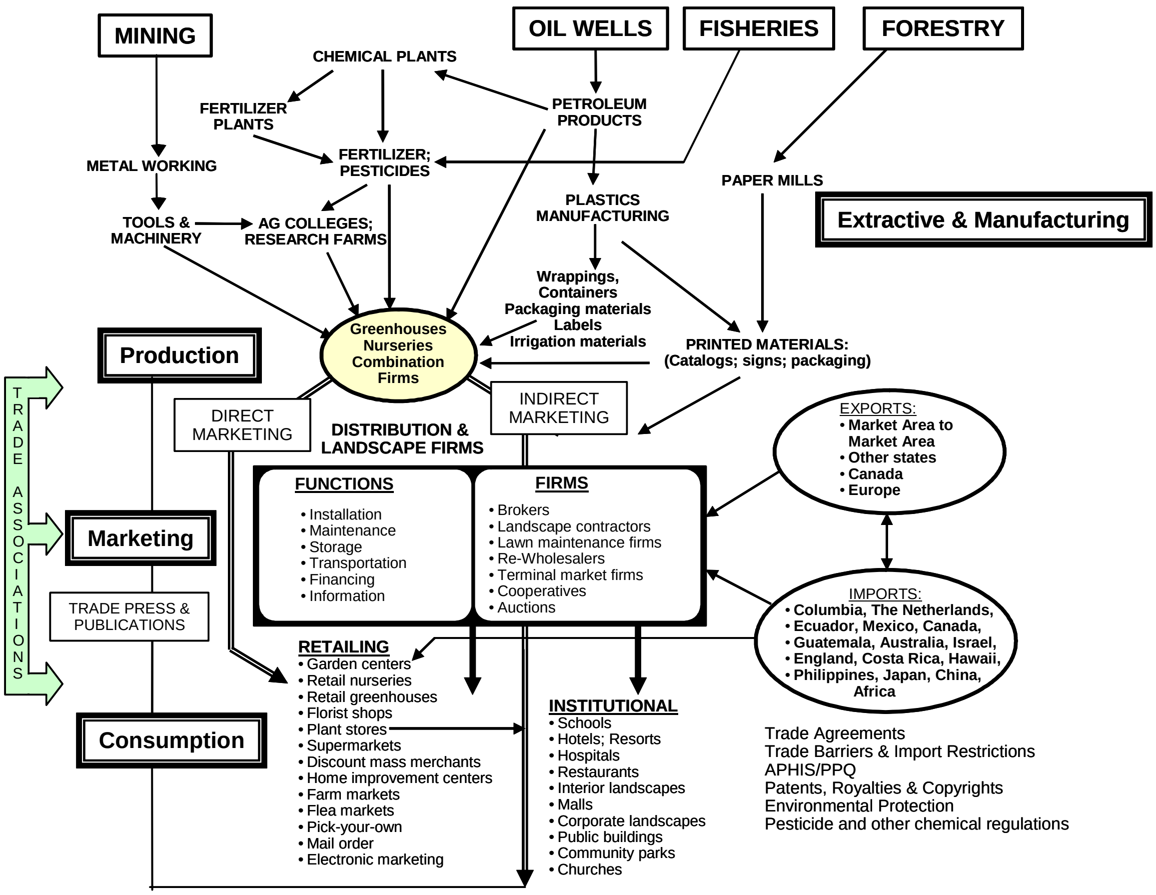

Detailed Structure of the Green Industry in the United States

Executive Summary

The environmental horticulture industry, also known as the “Green Industry”, is comprised of wholesale nursery and sod growers, landscape architects, contractors and maintenance firms, retail garden centers, home centers and mass merchandisers with lawn and garden departments, and marketing intermediaries such as brokers and horticultural distribution centers (re-wholesalers). In addition, many state and local governments have significant urban forestry operations for management of parks, botanic gardens, and right-of-ways.

The environmental horticulture industry is one of the fastest growing segments of the nation’s agricultural economy, often experiencing growth and expansion even during recessionary periods. The nursery and greenhouse sector has experienced considerable growth in the last two decades, albeit the growth rate has slowed somewhat in recent years. The landscape design, construction, and maintenance sector has also expanded, mainly due to strong economic conditions and the robust trends in new housing starts. Retail-level sales have increased for both independent and chain-store type retailers, with considerable consolidation occurring due to the increased presence of home centers and mass merchants in the lawn and garden marketplace. The outlook for the Green Industry is promising, yet offers several structural changes in the industry that will increase competitive pressures. The objective of this study is to estimate the economic impacts of the Green Industry at the national level, synergistically utilizing the studies that have already been conducted by several states, and complementing those with data from other primary and secondary sources.

The relationship between urban/community forestry and the Green Industry has become more widely recognized as urban forestry has become more acknowledged as an integral segment of the infrastructure of our communities. However, this relationship is still vastly unappreciated in terms of the degree of synergy that the two segments share. Not only is the Green Industry crucial for the support of urban forestry in providing quality plant material used in our cities, it also offers professional personnel with specialized expertise for growing, maintaining, and managing city trees. In view of its importance, numerous studies have been conducted to document the Green Industry’s economic impacts in individual states or regions. This present study represents the first attempt to evaluate economic impacts of the Green Industry for the entire United States and to evaluate the value and role of forest tree species (woody ornamental trees) in urban forestry environs.

Nationwide estimates of the economic impacts of the Green Industry were derived from a variety of information sources, including industry statistics from the U.S. Economic Census and Census of Agriculture (2002), County Business Patterns, and primary surveys by horticulture economics researchers. Economic impacts for each state were computed using the *Implan Pro* software to build regional input-output models to derive economic multipliers that estimate the indirect effects of industry purchases and induced effects of employee household spending, and also capture the effects of taxes and transfer payments.

Economic impacts for the U.S. Green Industry in 2002 were estimated at **$147.8 billion (Bn) in outpu**t, **1,964,339 jobs**, **$95.1 Bn in value added**, **$64.3 Bn in labor income**, and **$6.9 Bn in indirect business taxes**, with these values **expressed in 2004 dollars** (Table ES-1). For the production and manufacturing sectors, including nurseries/greenhouses, lawn and garden equipment manufacturers, and greenhouse manufacturers, total output impacts were $34.6 Bn, employment impacts were 300,677 jobs, and value added impacts were $20.8 Bn. For the horticultural services sectors of landscape services and landscape architects, total output impacts were $57.8 Bn, employment impacts were 753,557 jobs, and value added impacts were $39.0 Bn. For the wholesale/retail trade sectors, total output impacts were $55.5 Bn, employment impacts were 910,104 jobs, and value added impacts were $35.3 Bn. The largest individual sectors in terms of employment and value added impacts were landscaping services (704,875 jobs, $35.6 Bn), lawn and garden stores (347,916 jobs, $14.8 Bn), nursery and greenhouses (261,408 jobs, $18.1 Bn), florists (200,451 jobs, $4.0 Bn), and building material supply stores (123,591 jobs, $6.5 Bn). Other sectors with large value added impacts were general merchandise stores ($4.0 Bn), landscape architects ($3.5 Bn), lawn and garden equipment manufacturers ($2.6 Bn), lawn and garden equipment wholesalers ($2.7 Bn), wholesale flower, nursery stock and florist supplies ($1.9 Bn), and food & beverage stores ($1.4 Bn).

Table ES-1. Summary of Economic Impacts of The U.S. Green Industry By Sector, 2002

Industry Group/Sector (NAICS)	Output ($Mn)*	Employ-ment (jobs)	Value Added ($Mn)*	Labor Income ($Mn)*	Indirect Business Taxes ($Mn)*
Production & Manufacturing	34,578	300,677	20,796	11,037	784
Nursery & Greenhouse (1114)	26,053	261,408	18,076	9,612	647
Lawn & Garden Equipment Mfg (333112)	8,281	37,343	2,610	1,346	129
Greenhouse Mfg (332311)	244	1,927	110	78	7
Horticultural Services	57,774	753,557	39,013	30,269	1,387
Landscaping Services (56173)	52,971	704,875	35,564	27,719	1,312
Landscape Architecture (54132)	4,803	48,683	3,449	2,549	74
Wholesale & Retail Trade	55,475	910,104	35,275	23,044	4,701
Wholesale Flowers, Nursery Stock and Florist Supplies (42293)	2,879	68,969	1,907	1,130	440
Garden Equipment Wholesale (421820)	4,146	40,617	2,737	1,601	657
Lawn & Garden Stores (4442)	22,859	347,916	14,806	9,747	1,810
Building Material Supply Stores (4441)	9,982	123,591	6,491	4,258	789
Florists (4531)	7,195	200,451	3,977	2,725	401
Food & beverage stores (445)	2,263	35,117	1,385	944	156
General merchandise stores (452)	6,150	93,443	3,973	2,639	448
Total All Sectors	147,828	1,964,339	95,084	64,349	6,872

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, U.S. Department of Commerce)

Economic impact results are reported by state and region, as summarized in Table ES-2. Total value added impacts were largest in the Midwest region ($19.2 Bn), followed by the Pacific region ($18.4 Bn), Northeast ($17.9 Bn), and Southeast ($13.5 Bn). The largest individual states in terms of value added impacts, all exceeding $3 billion, were California ($13.7 Bn), Florida ($7.1 Bn), Texas ($6.1 Bn), Illinois ($4.3 Bn), Pennsylvania ($3.7 Bn), New York ($3.5 Bn), and Ohio ($3.5 Bn).

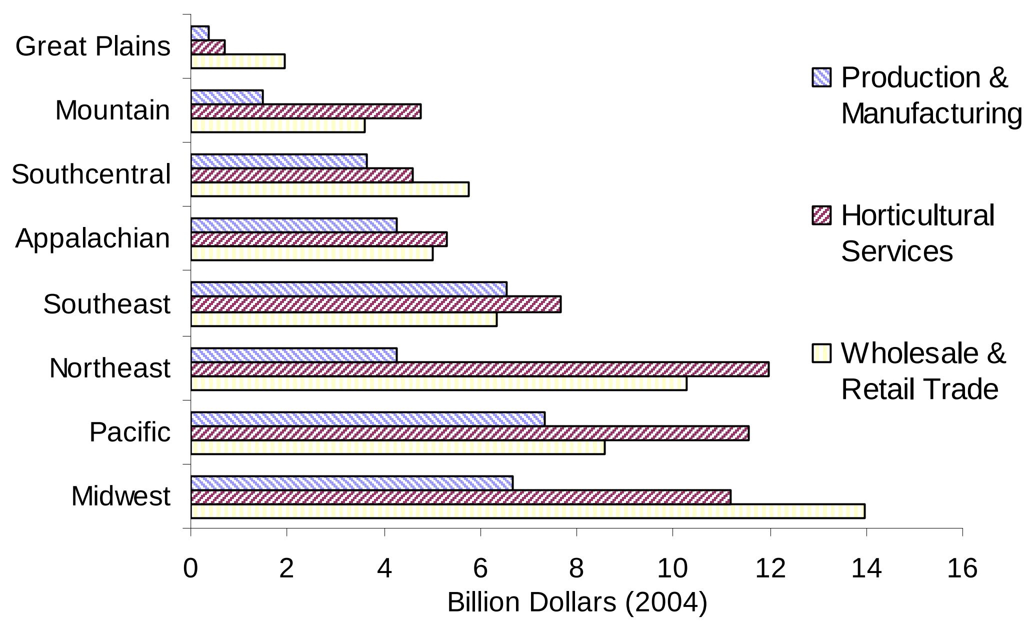

Figure E-1. Output Impacts Of The U.S. Green Industry

Table ES-2. Economic Impacts of The U.S. Green Industry By Region and State, 2002

Region or State	Output Impacts ($Mn)*	Employment Impacts (jobs)	Value Added Impacts ($Mn)*			
			All Sectors	Production & Manufact.	Horticultural Services	Wholesale & Retail Trade
East	**41,118**	**540,496**	**27,033**	**5,494**	**11,749**	**9,790**
Northeast	**26,568**	**336,027**	**17,867**	**2,986**	**8,250**	**6,632**
Connecticut	2,350	27,026	1,659	375	787	496
Delaware	448	6,359	297	44	148	104
Maine	509	7,825	331	39	166	126
Maryland	3,524	46,725	2,440	478	1,230	732
Massachusetts	3,239	37,553	2,159	122	1,225	811
New Hampshire	729	10,153	465	63	208	194
New Jersey	4,210	52,929	2,875	436	1,459	980
New York	5,265	62,113	3,511	437	1,363	1,711
Pennsylvania	5,589	75,829	3,672	924	1,430	1,319
Rhode Island	403	5,289	262	41	156	65
Vermont	302	4,225	196	25	78	93
Appalachian	**14,550**	**204,469**	**9,166**	**2,508**	**3,500**	**3,159**
Kentucky	1,257	21,649	821	112	245	464
North Carolina	5,155	67,472	3,583	1,387	1,261	935
Tennessee	3,854	50,812	2,050	689	648	713
Virginia	3,914	56,905	2,493	308	1,249	936
West Virginia	371	7,631	220	13	96	111
Central	**34,825**	**439,955**	**21,070**	**3,142**	**7,958**	**9,970**
Midwest	**31,825**	**397,099**	**19,243**	**2,994**	**7,494**	**8,754**
Illinois	6,897	75,110	4,335	430	1,972	1,933
Indiana	3,010	41,714	1,804	229	745	830
Iowa	1,459	20,820	906	62	216	627
Michigan	4,845	58,745	2,991	564	1,221	1,205
Minnesota	3,099	37,696	1,864	237	616	1,010
Missouri	2,488	37,690	1,495	134	470	890
Ohio	5,855	79,841	3,532	607	1,556	1,369
Wisconsin	4,170	45,483	2,317	731	697	890
Great Plains	**2,999**	**42,855**	**1,827**	**147**	**463**	**1,216**
Kansas	1,362	19,316	813	93	274	446
Nebraska	961	13,383	596	32	141	424
North Dakota	307	4,500	189	9	21	160
South Dakota	369	5,657	228	13	28	187
South	**34,559**	**498,420**	**22,150**	**6,301**	**8,194**	**7,656**
Southcentral	**13,992**	**209,935**	**8,615**	**1,974**	**3,039**	**3,602**
Arkansas	1,395	16,680	675	195	166	315
Louisiana	1,069	19,617	679	100	173	406
New Mexico	520	8,739	353	72	137	145
Oklahoma	1,352	24,603	819	247	212	359
Texas	9,656	140,295	6,088	1,360	2,351	2,377
Southeast	**20,568**	**288,486**	**13,535**	**4,327**	**5,155**	**4,054**
Alabama	1,681	26,804	1,148	353	434	360
Florida	9,997	147,795	7,076	2,463	2,747	1,866
Georgia	4,726	62,493	3,020	644	1,213	1,162
Mississippi	977	14,236	548	120	122	306
South Carolina	3,187	37,157	1,745	747	638	359
West	**37,326**	**485,467**	**24,830**	**5,859**	**11,112**	**7,859**
Mountain	**9,824**	**132,982**	**6,449**	**954**	**3,185**	**2,309**
Arizona	3,206	43,882	2,081	506	1,013	563
Colorado	3,085	37,630	2,019	178	1,083	758
Idaho	853	12,000	576	91	164	320
Montana	357	5,988	219	31	43	145

Region or State	Output Impacts ($Mn)*	Employment Impacts (jobs)	Value Added Impacts ($Mn)*			
			All Sectors	Production & Manufact.	Horticultural Services	Wholesale & Retail Trade
Nevada	1,248	17,324	844	13	633	198
Utah	901	13,577	600	130	206	264
Wyoming	174	2,581	109	4	44	61
Pacific	**27,502**	**352,485**	**18,382**	**4,905**	**7,927**	**5,550**
Alaska	159	2,110	104	10	36	58
California	20,362	253,977	13,656	3,165	6,429	4,063
Hawaii	745	11,166	531	200	220	112
Oregon	3,173	43,980	2,010	1,048	448	515
Washington	3,064	41,251	2,080	482	795	803
Total All Regions	**147,828**	**1,964,339**	**95,084**	**20,796**	**39,013**	**35,275**

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce)

The economic impacts of the urban forestry sector within the Green Industry were evaluated in relation to (1) the production of trees suitable for urban forestry by nurseries, and (2) tree care services provided by the landscape services sector. Based on survey information, the value of tree production suitable for urban forestry, including deciduous, evergreen, fruit, and Christmas trees, was $4.63 Bn. This value represented 27.2 percent of total output by the nursery and greenhouse sector. The value of tree care services was $9.92 Bn, which represented 27.1 percent of the output of the landscaping services sector. The total output of tree production and care services was valued at $14.55 Bn, which translated into $21.02 Bn in total output impacts, 259,224 jobs, $14.12 Bn in value added, $9.93 Bn in labor income, and $516 Mn in indirect business tax impacts. Trees sold to municipalities for use in urban forest settings (e.g., parks and other recreational areas) also are associated with significant public sector employment.

Various studies have shown that well landscaped homes with appropriate tree canopy have a 7 to 11 percent premium in value compared to similar properties without such landscaping. In addition, urban forests have other non-monetary or non-market economic and environmental impacts, including energy savings for building heating and cooling, reduction of atmospheric carbon dioxide, improved air quality, reduction of stormwater runoff , and other aesthetic benefits.

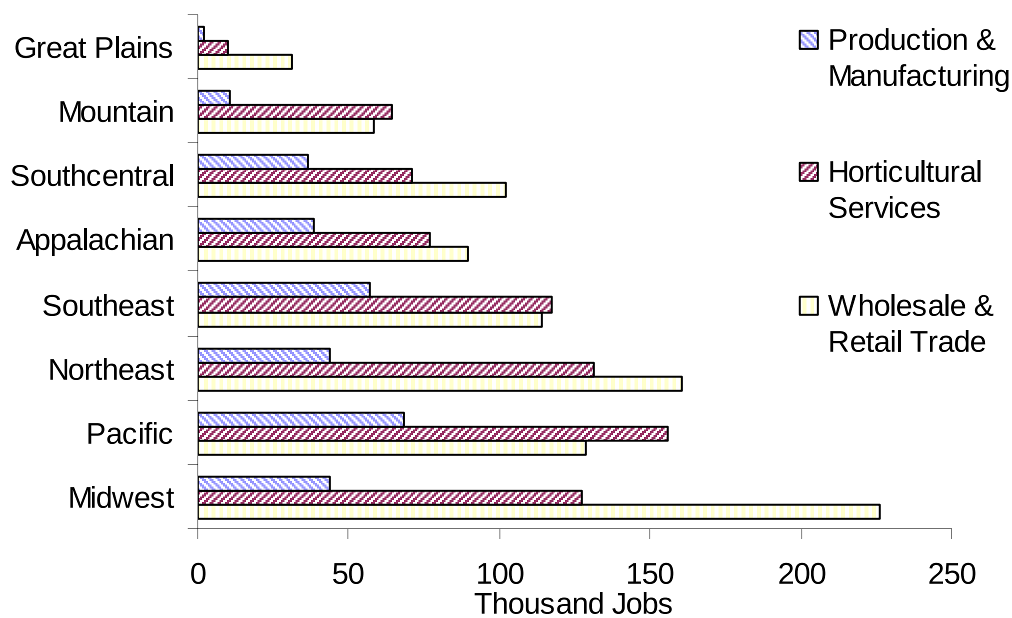

Figure E-2. Employment Impacts of the U.S. Green Industry

Table ES-3. Output Impacts of the U.S. Green Industry, by Sector and State, 2004.

State	Nursery & Green-house	Lawn & Garden Equip. & Grnhse. Mfg	Land-scaping Services	Land-scape Archi-tecture	Horticul-tural Whole-salers	Garden Equip-ment Whole-sale	Lawn & Garden Stores	Building Material Supply Stores	Florists	Food & beverage stores	General merch-andise stores	Total All Sectors
						*Output Impacts ($Mn)**						
Alabama	420	17	627	41	26	47	189	117	75	24	98	1,681
Alaska	18	0	46	6	2	0	19	29	12	5	21	159
Arizona	600	225	1,393	115	56	49	311	194	89	60	114	3,206
Arkansas	78	549	240	15	7	75	232	64	59	11	66	1,395
California	4,492	244	8,269	1,102	485	297	2,517	1,210	725	355	665	20,362
Colorado	291	3	1,408	204	42	76	521	247	126	51	117	3,085
Connecticut	453	0	1,080	62	29	34	329	159	114	35	54	2,350
Delaware	53	0	213	16	6	16	60	31	28	6	19	448
Florida	3,016	9	3,801	250	446	119	748	617	439	153	399	9,997
Georgia	579	565	1,664	118	101	156	690	384	198	67	204	4,726
Hawaii	254	0	274	46	10	7	41	30	41	10	31	745
Idaho	107	0	239	11	3	52	337	46	21	8	29	853
Illinois	446	511	2,621	256	224	284	1,288	479	427	82	278	6,897
Indiana	284	238	1,096	44	25	106	654	211	166	33	152	3,010
Iowa	111	23	306	23	7	183	569	94	60	20	62	1,459
Kansas	115	116	378	39	16	119	357	85	57	17	63	1,362
Kentucky	135	3	353	20	16	45	385	102	87	21	90	1,257
Louisiana	154	3	244	21	14	49	271	110	79	24	100	1,069
Maine	53	3	227	26	2	10	81	44	30	11	23	509
Maryland	602	3	1,720	87	54	47	427	222	196	60	107	3,524
Massachusetts	199	0	1,558	230	73	31	417	291	263	74	102	3,239
Michigan	915	206	1,561	236	65	117	756	380	286	63	258	4,845
Minnesota	312	245	877	56	40	220	728	239	207	43	134	3,099
Mississippi	61	235	168	22	15	43	249	60	48	11	65	977
Missouri	148	215	676	27	33	107	674	216	169	37	186	2,488
Montana	57	0	62	6	3	32	122	29	22	6	18	357
Nebraska	55	20	199	16	4	127	391	61	39	11	37	961
Nevada	16	0	897	32	9	19	109	66	35	18	48	1,248
New Hampshire	104	0	298	18	8	13	121	70	50	13	35	729
New Jersey	564	17	1,982	146	198	54	443	326	259	93	131	4,210
New Mexico	87	0	184	23	3	12	80	53	26	10	41	520
New York	539	212	1,693	194	156	100	927	528	509	142	265	5,265
North Carolina	1,650	106	1,803	122	41	152	592	311	160	52	165	5,155
North Dakota	19	3	31	1	1	95	109	21	13	3	11	307
Ohio	763	539	2,248	107	159	255	821	355	294	78	237	5,855
Oklahoma	432	17	305	17	19	46	252	86	74	15	88	1,352
Oregon	1,694	17	602	58	28	58	407	114	66	29	100	3,173
Pennsylvania	1,327	50	1,909	183	76	97	830	407	364	105	242	5,589
Rhode Island	67	0	226	7	9	3	18	28	26	7	12	403
South Carolina	448	1,196	933	44	32	29	220	120	63	23	78	3,187
South Dakota	24	3	41	4	8	48	181	24	15	5	14	369
Tennessee	558	1,183	910	65	26	77	524	198	137	33	142	3,854
Texas	2,313	10	3,179	372	169	276	1,505	703	454	157	517	9,656
Utah	162	3	302	14	9	28	174	94	39	18	57	901
Vermont	34	3	111	9	3	10	75	26	20	6	6	302
Virginia	374	210	1,760	109	29	73	647	244	236	57	174	3,914
Washington	631	5	1,096	85	61	78	606	196	113	52	140	3,064
West Virginia	40	0	141	6	4	6	62	37	35	7	32	371
Wisconsin	430	1,274	957	89	25	154	751	214	129	35	112	4,170
Wyoming	8	0	62	5	2	14	39	13	18	3	9	174
Total All States	26,297	8,281	52,971	4,803	2,879	4,146	22,859	9,982	7,195	2,263	6,150	147,828

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce).