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by

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Executive Summary

The environmental horticulture industry, also known as the “Green Industry”, is comprised of a variety of businesses involved in production, distribution and services associated with ornamental plants, landscape and garden supplies and equipment. Segments of the industry include wholesale nursery, greenhouse 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, horticultural distribution centers, and re-wholesalers. In addition to these commercial sectors, many state and local governments have significant urban forestry operations for management of parks, botanic gardens, and right-of-ways that are an integral segment of community infrastructure. The Green Industry is linked to urban forestry by providing quality plant material and 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, however, the present study represents the first attempt to evaluate its economic impacts for the entire United States using data from previous studies together with secondary industry statistics. A specific objective of the study was to evaluate the role, value and economic impact of forest tree species (woody ornamental trees) in the urban forestry environment. 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 were estimated at \$147.8 billion (Bn) in output, 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).

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).

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. In addition to these economic impacts of commercial activity within the Green Industry, various studies have shown that 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. Well landscaped homes with appropriate tree canopy have a 7 to 11 percent premium in value compared to similar properties without such amenities.

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

Industry Group/Sector (NAICS)	Output (\$Mn)*	Employment (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)

Table ES-2. Economic Impacts of the U.S. Green Industry by Region/State and Industry Group, 2002

Region or State	Output Impacts (\$Mn)*	Employment Impacts (jobs)	Value Added Impacts (\$Mn)*			
			All Sectors	Production & Manufacturing	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
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)