



ECONOMIC CONTRIBUTION OF ARIZONA'S GREEN INDUSTRY

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Acknowledgments

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HIGHLIGHTS

In 1994, the Arizona Green Industry provided:

- 13,131 jobs
- \$ 177 million in payroll
- \$ 305 million in value added (i.e. contribution to Gross State Product)
- \$ 662 million in total sales
- \$ 11.1 million in foreign exports
- \$ 18.8 million in state taxes (corporate, property and sales).

The Arizona Green Industry is one of the most rapidly growing sectors in the state.

- 8.7% average annual growth in employment since 1974.
- 7.7% average annual growth in payroll since 1974 in real dollars.

ECONOMIC CONTRIBUTIONS OF ARIZONA'S GREEN INDUSTRY

Preface

This study was commissioned by the Arizona Nursery Association and the Arizona Landscape Contractors Association to provide information about the contributions of the Green Industry to the Arizona economy. The study updates information released in a 1984 publication on the Green Industry. This study differs from the previous study in that it does not include information on retail florists. It does, however, provide more detailed information on landscape services and nurseries.

Like the 1984 study, this publication includes information on employment, payroll, and sales. In addition, it provides estimates of the contribution of the Green Industry to gross state product (i.e., value added in the industry) and its contribution to state government revenues.

The information used in this report includes data released by the U.S. government on landscape services, wholesale and retail nurseries, and nursery growers. Sources of information include County Business Patterns, the 1992 Census of Retail and Wholesale Trade, the 1992 Census of Agriculture, and Arizona Agricultural Statistics. The 1990

IMPLAN Input-Output model was used to estimate value added in the industry.

Additional data on the industry were obtained through a survey of all firms that could be identified as being part of the Green Industry. Those firms that did not respond within three to four weeks were sent a second copy of the survey questionnaire. In the third round, firms that had not responded by mail were called. However, those firms for which a current telephone number was unavailable were not contacted.

Of the 640 firms solicited, a total of 103 completed and returned the survey questionnaires. This represents a response rate of 16.1%. An analysis of the response rate by firm size indicates that, in most sectors of the Green Industry, larger firms had a much better response rate than did smaller ones. Thus, the sample, although smaller than had been hoped for, still represents a larger share of total employment and sales in the industry than the response rate suggests. The exact breakdown of response by industry sub-sectors is provided in Appendix A. The survey instrument itself is presented in Appendix B.

Executive Summary

What is Arizona's 'Green Industry'?

The Green Industry is defined as firms involved in the production, design, installation, maintenance and sale of plant products to enhance human environments. As such, the industry consists of three major components: landscape services, nursery/greenhouse production and distribution, and florists. This study covers only the landscape and nursery sectors.

Within landscape services, there are three basic activities: design, installation and maintenance. Within the nursery sector, there are also three basic activities: production of plant materials, wholesale distribution and retail distribution of nursery products. Production of plant materials includes field production, specialized rose and sod farms, and container and greenhouse production of plants. Unless otherwise noted, the retail nursery sector includes not only full service retail nurseries, but also the nursery and garden sections of major mass merchandisers, home improvement centers and chain stores. In the industry, production and wholesaling often go hand in hand. In this report, they will be considered together.

What was the Green Industry's Contribution to the Arizona Economy in 1994?

The Green Industry is a growing part of agriculture, agricultural services, and trade as is reflected in the following list of contributions to the state economy:

- 13,131 jobs
- \$177 million in payroll
- \$662 million in total sales
- \$305 million in net receipts or value added to the state economy
- \$18.8 million in taxes paid in Arizona

- \$11.1 million in foreign exports
- \$54.9 million in shipments to other states

In addition, 83% of the \$240.6 million that Green Industry firms spent on materials and supplies, were spent in Arizona, along with \$133.7 million of other non-wage expenditures.

How has the Green Industry grown over time?

The Green Industry's growth is closely tied to increases in population and subsequent increases in construction. Consequently, the Industry grew at a phenomenal rate during the 1970's and 1980's. Since 1987, growth in the industry has slowed, reflecting a general economic slow-down throughout the state in the early 1990's, but both the general economy and the Green Industry's growth are starting to pick up again. Part of the growth in the 1980's was also fueled by corporate outsourcing of landscape services. In other words, many commercial establishments that previously would have retained landscape maintenance crews in-house began hiring outside landscape service firms to provide these services. Between 1974 and 1987, the industry increased fourfold in employment and eightfold in nominal payroll. Between 1987 and 1994, employment in the industry increased by 30% and payroll increased by 22%.

Nursery operations have apparently been successful at gaining market share from California competitors over the past two decades. However, retail nurseries appear to be losing market share to mass merchandisers and discount chains. Employment in retail nurseries declined between 1987 and 1992. However, total retail employment is still estimated to be increasing when garden sections of mass merchandisers and chain stores are included.

Introduction

The Green Industry is a dynamic and growing component of the Arizona economy that is closely tied to per capita income growth, population growth and new construction in the state. The Green Industry in Arizona has provided leadership in the development of xeriscapes, or low water use landscapes, and the drought resistant plants used in xeriscapes. This may be part of the reason that the industry has grown despite strong competition from California, the largest nursery plant producer in the nation. Xeriscape refers to low water using landscapes that apply the following seven concepts: 1) good landscape planning and design, 2) appropriate use of turf grass, 3) efficient irrigation, 4) soil improvements, 5) use of mulches, 6) low water use plants, and 7) appropriate maintenance.

Overall, employment growth in the industry has been very strong throughout the 1970's and 1980's with a slight slow down in the early 1990's (Figures 1 and 2). The average number of employees per firm has stayed relatively constant over the past twenty years indicating no clear trend towards downsizing or towards overall larger firm size over time.

Nursery and greenhouse crop production has been growing as a share of total crop production in the State (Appendix C). In 1982, nursery and greenhouse crops were 2% of total crop sales. By 1992, that figure had risen to 7% of total crop sales.

The Green Industry contributes to the quality of life in Arizona by developing and maintaining attractive urban and roadside landscapes. The Arizona Green Industry has been particularly successful in developing aesthetically pleasing xeriscapes and in providing a wide variety of attractive

low water use plants. Results from this study indicate that approximately 62% of all landscape installed in 1994 was xeriscape. The percentage of landscape planted to xeriscapes is predicted to continue increasing. A new direction for the Green Industry is the development of plants and landscapes low in pollen and other airborne plant material.

Figure 1. Green Industry Employment.

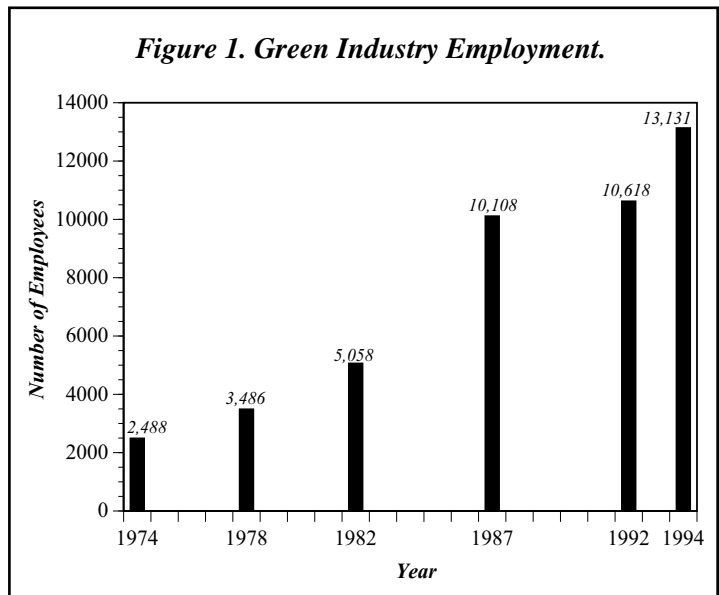
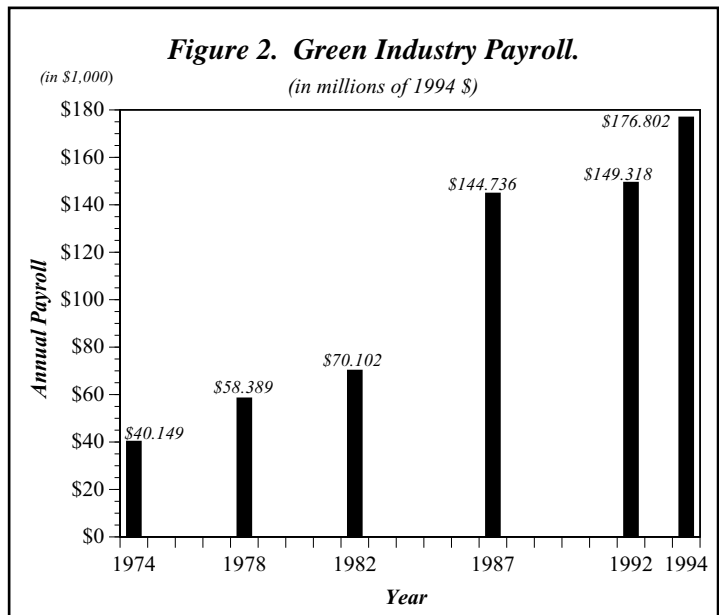


Figure 2. Green Industry Payroll.



Studies in landscape architecture have demonstrated the savings in energy for cooling that can result from effective shading of buildings by trees. Arizona residents appreciate the shade provided by trees and shrubs in parking lots around commercial properties during the summer months. Although the effect of a well landscaped yard on property values has not been well quantified, much of what realtor's refer to as 'curb appeal' is attributable to attractive landscaping.

The National Family Opinion research group recently completed a study for Organic Gardening magazine and concluded that gardening is

the number one recreational activity in the United States, with an estimated 78.3 million adult Americans, tending gardens in 1994.

The Green Industry clearly makes multiple contributions to the economy and quality of life in Arizona. Through improved landscape design and development of new plant varieties it will continue to contribute to the future economy and quality of life in the state.

Current Economic Contributions of the Industry

This section is largely based on the results of the 1995 survey of the industry and provides a snapshot of where the industry stands as of 1994. Based on the survey data and our estimate of total number of firms in the industry in 1994, we estimate that there were approximately 13,131 employees in the industry (Figure 3). Employee payroll was an estimated \$177 million in 1994 (Table 1). The contribution of the industry to Gross State Product was approximately \$305 million. Gross State Product (GSP) is the gross market value of goods and services attributable to labor and property in the state. In other words, it is the value that an industry adds to the goods and services it purchases. Value added, or the contribution to GSP, was calculated using the IMPLAN input output model and expenditure data from the survey.

Sales figures across categories sum to a larger figure than value added because many of the sales were made internal to the industry and hence, the same plant material may have been sold more than once.

The Green Industry's exports or sales outside the state of Arizona were 10% percent of total sales or approximately \$66 million. Approximately \$11.1 million worth of sales were for-

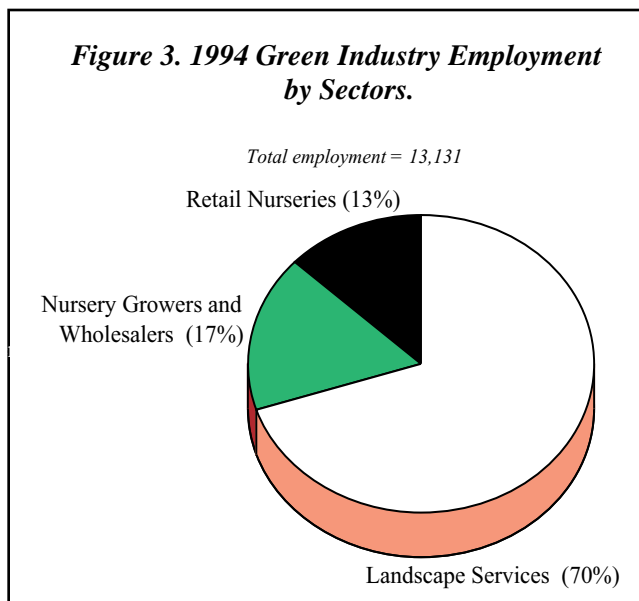


Table 1. 1994 Green Industry Summary Statistics.

Sector	Establishments	Employment	Payroll	Sales
			(millions)	(millions)
Landscape Services	1,416	9,184	126.086	405.992
Nursery Growers - Wholesalers	362	2,237	25.531	133.329
Retail Nurseries	240	1,710	25.185	122.458
Totals	2,018	13,131	176.802	661.779
Sector	<i>(in percentages)</i>			
Landscape Services	70	70	71	61
Nursery Growers - Wholesalers	18	17	15	20
Retail Nurseries	12	13	14	19
Totals	100	100	100	100

Table 2. Total Sales by Destination.

	Arizona	California	Other U.S.	Rest of the World/Foreign
	<i>(in percentages)</i>			
Landscape Services	95	0	5	0
Nursery Growers - Wholesalers	67	5	20	8
Retail Nurseries	100	0	0	0
Total	90%	1%	7%	2%
	Arizona	California	Other U.S.	Rest of the World/Foreign
	<i>(millions)</i>			
Landscape Services	385.692	1.425	20.3	0
Nursery Growers - Wholesalers	89.269	5.900	27.097	11.063
Retail Nurseries	122.215	76	128	.038
Total	597.176	7.401	47.525	11.102

Table 3. Source of Plant Material by Origin.

	Own Products	Arizona	California	Other	Total
	<i>(in percentages)</i>				
Landscape Services	3	82	11	4	100
Nursery Growers - Wholesalers	75	12	9	4	100
Retail Nurseries	20	34	42	4	100

Table 4. Green Industry Expenditures, 1994.

(in millions)

Wages and Benefits ¹	\$213.6
Taxes ²	18.8
Rent, Mortgage and Building Maintenance	15.2
Utilities (electric, gas, water and phone)	8.8
Equipment	28.2
Materials and Supplies	240.6
Plant Material	\$137.2
Irrigation Equipment	42.0
Rock Material	13.4
Agricultural Chemicals	10.4
Soil Amendments	5.8
Gasoline and Oil	5.7
Containers	5.1
Fertilizers	4.5
Greenhouse Supplies	3.7
Hand Tools	.5
Other	12.5
Other Expenses	64.1
Total Expenditures	\$589.3

¹ This figure differs from payroll in that it includes all benefits and compensation to business owners, when the owners paid themselves wages (i.e., primarily in the case of sole proprietorships).

² This figure includes only state and local taxes, any federal taxes paid would appear under other expenses.

foreign exports of products and services (Table 2). Virtually all foreign sales were made by nursery growers and wholesalers. All retail sales were made in Arizona. However, some portion of these sales were made to people who do not reside in Arizona. Estimating retail purchases of nursery and garden products by nonresidents is beyond the scope of this study.

The industry primarily serves Arizona customers. In doing so, it keeps money that Arizonans would have spent on plant material and landscape services from other states, namely California, from leaving the state. As

such, the industry plays an important role in import substitution or in reducing imports into the state. This is not to say, however, that trade of plant materials and services are not important nor that they will not increase in the future.

Forty-two percent of the plant material sold at the retail level in Arizona is from California. About 34% of the plant products sold by retailers were produced in Arizona. Landscape service firms buy almost 82% of their plant material in Arizona. Table 3 provides the approximate percentages of total plant material sold by state of origin.

Green Industry Expenditures

Through its expenditures, the Green Industry provides income for a variety of other sectors. Approximately 83 percent of all purchases of materials and supplies by the Green Industry were made within the state of Arizona. The value of these purchases was over \$200 million. Green Industry spending by category is presented in Table 4.

Table 5. Green Industry Selected Expenditures by Location.

	Arizona	Outside Arizona
	<i>(millions)</i>	
Equipment	\$27.5	\$.7
Materials and Supplies	200.7	39.9
Other Expenditures ¹	63.4	.7
Subtotal	\$291.6	\$41.3
	Arizona	Outside Arizona
	<i>(in percentages)</i>	
Equipment	98	2
Materials and Supplies	83	17
Other Expenditures ¹	99	1

¹ This category does not include wages and benefits, state and local taxes, mortgages, rent, construction, building maintenance or utilities.

The breakdown of spending in and outside Arizona is presented in Table 5.

In addition to a total of \$240.6 million spent on materials and supplies, the industry spent \$28 million on equipment and equipment maintenance and \$8.8 million on electricity, gas, water and communication services. The Green Industry paid \$18.8 million in state taxes.

Between 1990 and 1994, the industry spent approximately \$34.8 million on equipment and \$12.5 million on construction. The industry is likely to spend nearly \$26.2 million on equipment and \$9.8 million on construction during the next three years.

Plant material represented 57% of total material and supply purchases and 23% of all expenditures made by the Green Industry. Irrigation equipment is a distant second, representing 17% of all material and supply purchases. Given the large percentage of plant material that is purchased in Arizona, there are major flows of

money between the various sectors of the Green Industry.

Industry Organization

Ninety-three percent of the state's Green Industry firms are businesses that have their origin in Arizona. Almost two-thirds of these businesses are corporations (Figure 4). The median age of a Green Industry business is approximately 14.5 years. Over half of the current businesses were started after 1979 (Figure 5).

Figure 4. Industry Legal Structure.

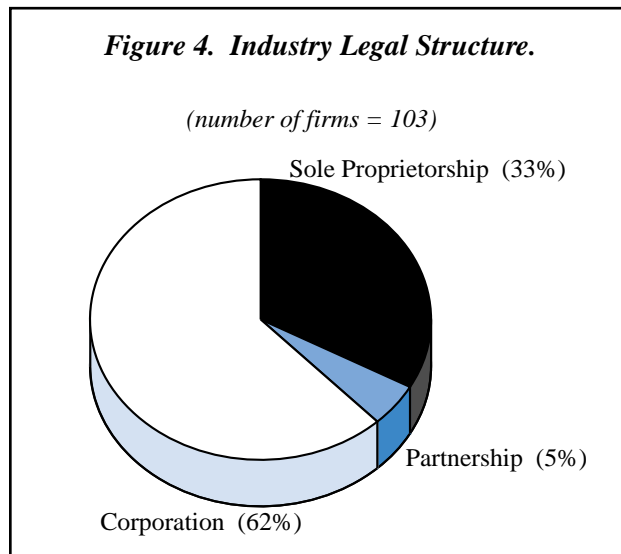


Figure 5. Age Distribution of Survey Firms.

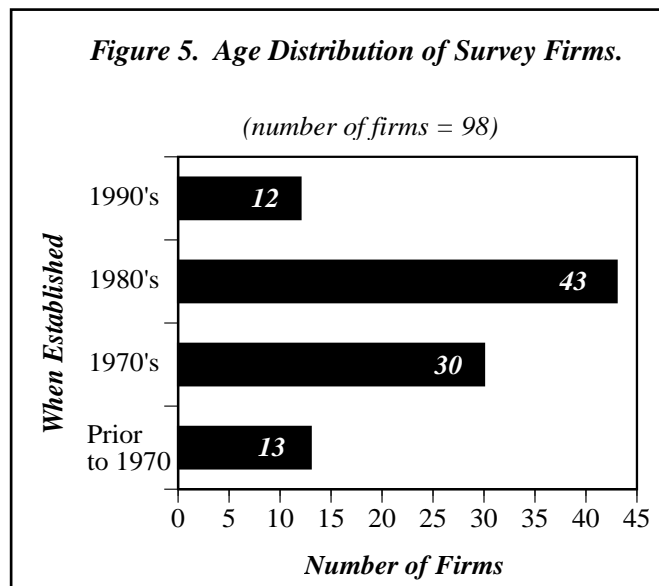


Figure 6. Survey Firms by Types of Enterprises.

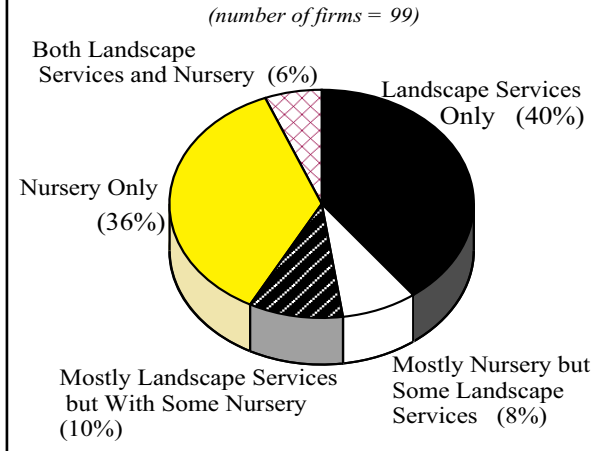


Figure 7. Percentage of Sales by Type of Landscape Services.

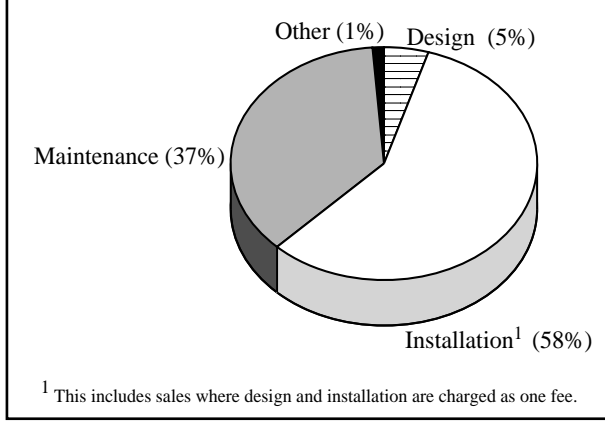


Figure 8. Nursery Sales by Type of Nursery Operation.

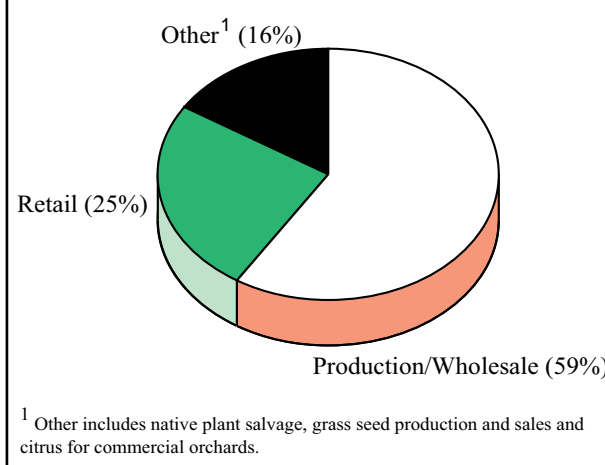


Table 6. Percentage of Landscape Service Sales by Purchasing Sector.

	Landscape Residential	Commercial	Government	Total
	(in percentages)			
Design	54	41	5	100
Installation	16	69	15	100
Maintenance	11	66	23	100
Total	16	67	18	100

The industry is characterized by significant variation in how firms combine enterprises. About one-third of the firms specialized completely in one of the following six areas: landscape design, landscape installation, landscape maintenance, nursery production, nursery wholesaling or nursery retailing. The rest of the firms combined some or all of these activities. Just under one quarter of all firms in the industry are involved both in landscape service and nursery related activity, the remaining 76% of firms are involved exclusively in either landscape services, or nursery activities (see Figure 6).

Within the landscape services sector, installation accounted for the largest share of total sales with a total of 58% (Figure 7). Landscape service sales to the commercial sector (as opposed to households or the government) represented two-thirds of total landscape service sales (Table 6).

Within the nursery sector, nursery production in fields, greenhouses or nurseries and wholesaling represented well over half of all sales. The other category, which included seed production, accounted for about 16 percent of sales (Figure 8).

As part of the survey, firms were asked to rank factors most affecting their ability to expand in Arizona. The top six factors in rank order were as follows:

- 1) Capital or financing
- 2) Own time or management
- 3) Competition
- 4) Ability to hire or develop management
- 5) Labor
- 6) Market demand

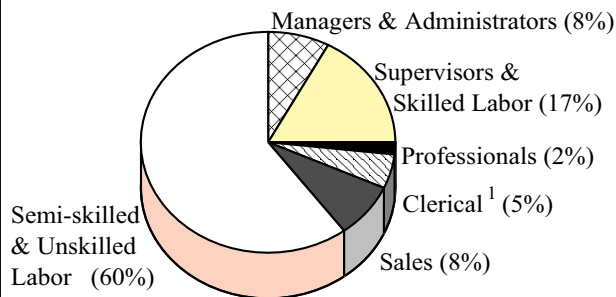
Table 7. 1994 Green Industry Employment.

	Full-time	Part-time	Seasonal	Family	
	(percentages)				
Landscape Services	92	3	4	2	
Nursery Growers - Wholesalers	85	5	6	3	
Nursery Retailers	72	22	3	3	
	Full-time	Part-time	Seasonal	Family	Total
	(number of jobs)				
Landscape Services	8,449	276	367	184	9,184
Nursery Growers - Wholesalers	1,903	118	144	72	2,237
Nursery Retailers	1,226	372	56	56	1,710

Table 8. Green Industry Employment by Occupations.

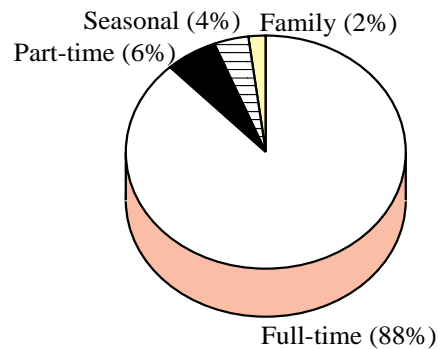
	Manager	Professional	Clerical	Sales- person	Skilled Labor	Semi-skilled/ Unskilled	Total
	(number of jobs)						
Landscape Services	658	218	449	231	1,385	6,244	9,184
Nursery Growers - Wholesalers	169	9	115	222	516	1,205	2,237
Retail Nurseries	186	23	94	686	302	419	1,710
Total	1,013	250	658	1,139	2,203	7,868	13,131

Figure 9. Occupations of Green Industry Labor Force.



¹ Clerical includes administrative assistants, computer support personnel, drafters, and graphic designers.

Figure 10. Green Industry Employment.



The factors that were ranked as lower priority concerns were land, environmental regulation, water, weather and other concerns. Capital or financing was ranked as the most serious constraint to expansion by over 20% of the respondents.

Employment in the Green Industry

As mentioned in previous sections, the Green Industry employed 13,131 people in 1994. The majority of these employees, 88%, work full-time and in a wide range of occupations (Tables 7 and 8, and Figures 9 and 10). Managers, administrators, supervisors, skilled laborers and professionals represented 27% of this labor force. The average payroll per employee was \$13,480. The average payroll per employee across all Arizona industries except agriculture was \$21,924 in 1992. The average payroll per employee was \$14,126 in all agricultural services, \$26,077 for wholesale trade of nondurable goods and \$12,574 for retail trade in 1992. The 1992 Green Industry payroll per employee was \$13,313. Thus, Green Industry payroll per employee is very similar to payroll per employee in other agricultural services and retail trade, but is roughly half of wholesale trade payroll per employee.

Sales in the Nursery Industry

Nursery sales by type of plant material reveal interesting

differences. Almost 42% of what wholesalers and growers sell can be classified as desert trees, shrubs and plants. Retail plant sales are focused heavily on bedding plants which constitute 81% of the plant material that they sell. Landscape service firms that also have nursery operations produce both desert and conventional or lush green trees, shrubs and plants. A large part of the other sales of nursery growers is in grass seed (Table 9).

Similar to sales by type of plants, sales by type of customer reveal distinct patterns for different sectors of nursery. While over half of growers and wholesalers' sales are to landscape services, retail nurseries sell predominately to the general public. Landscape service firms that also have nursery operations sell over half of their product to the general public (Table 10).

Table 9. Percentage of Plant Sales by Plant Type.

Sales from:	Desert Trees Shrubs and Plants	Conventional/Lush Trees, Shrubs and Plants	Bedding Plants	Other ¹
	<i>(percentages)</i>			
Landscape Services ²	49	38	6	7
Nursery Growers - Wholesalers	42	10	15	33
Retail Nurseries	9	9	81	1

¹ Other includes grass seed, roses, houseplants and sod.
² These are figures for landscape service firms that have nursery enterprises only.

Table 10. Type of Customer for Nursery Products Sold.

Sales from:	Sales to: Landscape Services	Wholesale Nurseries	Retail Nurseries	Final Consumer	Total
	<i>(in percentage of sales)</i>				
Landscape Services ¹	19	5	21	54	100
Nursery Growers - Wholesalers	51	13	22	14	100
Retail Nurseries	11	0	1	88	100

¹ These figures are for landscape service firms that have nursery enterprises only.

Sales in Landscape Services

As mentioned earlier, the largest customer for landscape services are commercial establishments. Commercial landscaping is found around stores, restaurants, hotels, malls, office complexes, industrial parks and industrial plants. Almost two-thirds of all landscape service sales were to commercial interests.

Table 11. Percent of Total Landscapes Designed, Installed and Maintained in Xeriscape in 1994.

	Residential	Commercial and Public
<i>(percentage by square footage)</i>		
Designed	59	96
Installed	57	67
Maintained	49	27
<i>(percentage by the number of landscaped yards)</i>		
Designed	81	90
Installed	61	67
Maintained	27	27

Table 12. Price Charged per Landscape Installation or Maintenance Job.

A. Average price per square foot to install landscape.			
	Low	Average	High
Residential			
Average	\$1.00	\$1.38	\$3.28
(std. dev.)	.83	1.01	2.70
Commercial and Public			
Average	\$.84	\$1.45	\$1.98
(std. dev.)	.53	.92	1.18
B. Average price per property to maintain landscape.			
	Low	Average	High
<i>(\$/week)</i>			
Residential			
Average	\$36	\$61	\$137
(std. dev.)	15	28	119
Commercial and Public			
Average	\$67	\$106	\$273
(std. dev.)	68	82	238

Installation of xeriscapes represented approximately 62% of total landscape area installed by landscape service firms. Maintenance of xeriscape was 27% of the total area that landscape maintenance enterprises covered (Table 11). Well over half of the landscapes designed and installed in 1994 were in xeriscape. Demands for professional maintenance may either be lower for xeriscapes or if demand for maintenance of conventional landscape and xeriscape are similar, the lower percentage for maintenance represents the approximate percentage of existing landscape that is in xeriscape.

As part of the survey, an effort was made to collect information on the cost of landscape installation, maintenance and design. Lenders find such information valuable in evaluating the financial plans of landscape service firms that submit loan applications. Table 12 contains the results of this effort. The figures have been aggregated into all installation and maintenance and converted to price per square foot. Standard deviations on these estimates are also included. This is a first attempt at identifying prices in landscape services.

In Table 12, the range of average prices for residential landscape installation was \$1.00 to \$3.28 per square foot. The price range for commercial and public landscape was more narrow, ranging from \$.84 to \$1.98. Maintenance prices were largely provided on per property or yard basis. Here, probably because of much larger variation in property sizes for commercial and public jobs, the commercial/public price range is wider than for residential maintenance.

Summary and Conclusions

The Green Industry is a dynamic contributor to the Arizona economy, providing products and services that enhance the quality of life in Arizona. The industry has grown to four and a half times its size in terms of employment since 1974. In 1994,

the Industry boasted 13,131 employees, 88% of whom worked full-time. Total payroll exceeded \$177 million in 1994 and total sales were \$662 million. This activity resulted in net receipts or value added of \$305 million. The coffers of state and local government contained \$18.8 million in payments by the Green Industry in 1994. Although the industry primarily serves Arizona

customers, Green Industry exported over \$11 million.

The industry is characterized by young firms, the majority of which started in Arizona, which are involved in a variety of different enterprises. Xeriscape landscapes and plants represent a significant share of the industry's sales.

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APPENDIX A. Response Rate Information.

Sector	Total Establishments	Survey Establishments	Survey as a % of Total
Landscape Services	1,416	68	5%
Nursery Growers - Wholesalers	362	44	12%
Retail Nurseries	131	24	18%
Mass Merchandisers	109	NA ¹	NA
Totals²	1,748	136	NA
Sector	Total Employment	Survey Employment	Survey as a % of Total
Landscape Services	9,184	1,751	19%
Nursery Growers - Wholesalers	2,237	678	30%
Retail Nurseries	718	297	41%
Mass Merchandisers	992	NA	NA
Total	13,131	2,726	NA
Sector	Total Payroll	Survey Payroll	Survey as a % of Total
<i>(in millions)</i>			
Landscape Services	\$126.086	\$32.786	26%
Nursery Growers - Wholesalers	25.531	13.295	52%
Retail Nurseries	11.731	4.228	36%
Mass Merchandisers	13.454	NA	NA
Total	176.802	50.309	NA
Sector	Total Sales	Survey Sales	Survey as a % of Total
<i>(in millions)</i>			
Landscape Services	\$405.992	\$76.836	19%
Nursery Growers - Wholesalers	133.329	37.806	28%
Retail Nurseries	58.636	17.946	31%
Mass Merchandisers	63.822	NA	NA
Total	661.779	132.588	NA
¹ Only two mass merchandisers returned the survey although others provided selective information later. Consequently it is not possible to provide information from the survey on mass merchandisers without violating the confidentiality of their responses.			
² Totals for survey do not include mass merchandisers.			

APPENDIX B. Green Industry 1994 Survey

I. Organization

1. Please indicate the approximate percentage of your total dollar volume of sales by activity:

landscape design services:

- ___ % residential
- ___ % commercial/industrial
- ___ % public/government

landscape installation services:

- ___ % residential
- ___ % commercial/industrial
- ___ % public/government

landscape maintenance services:

- ___ % residential
- ___ % commercial/industrial
- ___ % public/government

nursery products:

- ___ % field production of horticultural products for landscaping/gardening
- ___ % container plant production in a nursery
- ___ % greenhouse/bedding plant production
- ___ % sod production
- ___ % re-wholesale trade of greenhouse and nursery products
- ___ % retail trade of greenhouse and nursery products
- ___ % other, please describe:

100%

If your firm is not involved in any of these activities except 'other', please stop here and return the questionnaire. Please indicate that your firm is not involved in these activities.

2. Year established: _____ 3. Year established in Arizona: _____

4. If your firm has operations in more than one state or country, in what city and state/country is your headquarters? _____

5. Check which best describes your firm's legal structure:

- ___ sole proprietorship ___ corporation
- ___ partnership ___ other, Please describe:

6. Please indicate the total number of locations (offices, shops, stores, yards, or nurseries) of your firm: Even if you have several types of facilities at one address, count each address as one location.

_____ in total _____ in Arizona

7. Please describe your Arizona facilities.

- ___ total number of acres of field production
- ___ total number of acres in container production
- ___ total number of acres in greenhouses
- ___ total number of locations with offices
- ___ total number of wholesale and retail outlets
- ___ total number of yards/storage facilities

8. Rank the five factors that most limit the ability of your firm to expand in Arizona. Rank them 1-5 with 1 being the most important.

- ___ water supply _____ land _____ market demand
- ___ labor _____ competition _____ capital or financing
- ___ weather uncertainty _____ environmental regulations _____ own management/time
- ___ ability to hire/develop management _____ other (specify) _____

II. Expenditures

9. What were the starting and ending dates of your last full fiscal year? _____.

10. Please estimate the amount your firm paid in the following types of taxes for your last full fiscal year:

- \$ _____ Arizona corporate income tax
- \$ _____ Property taxes paid in Arizona
- \$ _____ Sales taxes paid in Arizona (only taxes you collected on your sales)

11. Approximately how much did your firm pay for the following expenses for the last full fiscal year:

- \$ _____ Ownership/leasing expenses (i.e. mortgages, rent) for land and buildings
- \$ _____ Facility maintenance or repair (excluding salaries of your employees)
- \$ _____ Facility remodeling, additions, and/or construction
- \$ _____ Water/sewer utilities (including water for irrigation of field or container production)
- \$ _____ Electric and natural gas utilities (this does not include gasoline for vehicles)
- \$ _____ Telephone and other communications

12. Please estimate how much your firm spent on personnel during your last full fiscal year:

- \$ _____ Wages and salaries
- \$ _____ Benefits (including bonuses, health and other types of insurance, FICA, etc.)

13. Please provide the following expenditure estimates for all of your Arizona operations by the location of your **supplier** for your last full fiscal year. Please indicate whether your major supplier is a retail or wholesale distributor/store (R), nursery or greenhouse operation (N), or, a manufacturer or service provider (M).

	R,N,M	Arizona	Outside of Arizona
Equipment purchases/leases	_____	_____	_____
Transportation equipment	_____	_____	_____
All other equipment	_____	_____	_____
Equipment repair	_____	_____	_____

Materials, Supplies and Services
(Please list the 5 items/services that are your largest dollar volume of purchases. Please use the categories in the accompanying list on page 8.)

- 1. _____ \$ _____
- 2. _____ \$ _____
- 3. _____ \$ _____
- 4. _____ \$ _____
- 5. _____ \$ _____

Total Materials and Supplies \$ _____

All Other Expenditures (excluding taxes, building, and personnel expenditures) \$ _____

Total Expenditures (from questions 10-13) \$ _____ \$ _____

14. Approximately how much did your Arizona operations spend on equipment purchases, if any, for the following years.

Fiscal year ending: 1993 \$ _____ 1992 \$ _____
 1991 \$ _____ 1990 \$ _____

15. Approximately how much did your Arizona operations spend on remodeling/construction projects, if any, during the following years.

Fiscal year ending: 1993 \$ _____ 1992 \$ _____
 1991 \$ _____ 1990 \$ _____

16. If you plan to make any major construction or equipment purchases for your Arizona operations in the next three years, can you estimate approximately how much you plan to spend?

\$ _____ equipment \$ _____ construction

17. What percentage of the sale value of plants and planting material you use or sell in Arizona comes from:

- _____ % your own fields, nurseries, greenhouses
- _____ % Arizona suppliers
- _____ % California suppliers
- _____ % Texas suppliers
- _____ % Florida suppliers
- _____ % All other suppliers

III. Marketing

18. Approximately how much were your total sales from Arizona facilities during your last fiscal year? \$ _____.

19. What percent of the dollar volume of sales from your Arizona facilities are to buyers in:

- _____ % Arizona
- _____ % California
- _____ % Nevada
- _____ % New Mexico and Texas
- _____ % rest of the U.S.
- _____ % Mexico
- _____ % other countries

IV. Workforce/Employment

20. Please indicate the number of employees you had in your Arizona operations as of March, 1994 by type:

Employee type	Number of employees	Payroll, excluding benefits
Full-time	_____	\$ _____
Part-time	_____	\$ _____
Seasonal	_____	\$ _____
Family members	_____	\$ _____

21. Please indicate the number of employees you had in your Arizona operations as of March, 1994 that worked in the following areas in the indicated occupations. If an employee worked in more than one area, estimate the fraction of time spent in each area:

Area and Occupation:	Number of employees (in terms of full-time equivalents)
Managerial/administrative	_____
Clerical	_____
Sales people, cashiers, distributors	_____
Nursery, greenhouse or field production:	_____
supervisory or skilled labor	_____
semi-skilled or unskilled labor	_____
Landscape design:	_____
professional	_____
draftsperson, graphic artists, computer specialists	_____
Landscape installation:	_____
supervisory and/or skilled	_____
semi-skilled or unskilled	_____
Landscape maintenance:	_____
supervisory and/or skilled	_____
semi-skilled and unskilled	_____

V. In Field, Greenhouse and Nursery Production: Complete only if your firm is involved in the growing of plants in the field, in greenhouses or in nurseries.

22. What percentage of your total sales are from:

- _____ % sod
- _____ % roses
- _____ % desert shrubs, trees and plants
- _____ % conventional/lush green shrubs, trees and plants (California material)
- _____ % houseplants
- _____ % bedding plants (flowers, herbs, vegetables)
- _____ % other, please describe: _____

23. What percent of the dollar volume of sales from your Arizona facilities are to:

- _____ % wholesale distributors
- _____ % retail distributors
- _____ % landscape service firms
- _____ % final consumers/general public

VI. Landscape Services: (Fill out only if your firm is involved in landscape services.)

24. In the past fiscal year, approximately how many square feet (or jobs) of the following types of landscape did your firm design, install and maintain. Please circle whether these numbers are for square feet or number of landscaped yards or areas. **Square feet** **number of landscaped yards**

Type of landscape	Designed	Installed	Maintained
TOTAL:	_____	_____	_____
Residential:			
xeriscape or desert	_____	_____	_____
conventional or traditional	_____	_____	_____
Commercial:			
xeriscape or desert	_____	_____	_____
conventional or traditional	_____	_____	_____
Public/government/municipal	_____	_____	_____
xeriscape or desert	_____	_____	_____
conventional or traditional	_____	_____	_____

25. What was the approximate amount that your firm charged customers during the past fiscal year per square foot or per landscaped yard. By low, average and high we are referring to the cost of the job due to the types of materials used or the amount of labor required.

Circle whether these figures are **per square foot** or **per landscaped yard**.

If you circled per landscaped yard, can you estimate the average size of the yards you landscaped in square feet? _____

	Low	Average	High
<i>landscape design</i> . (per square foot)	_____	_____	_____
residential	_____	_____	_____
commercial	_____	_____	_____
public/government/municipal	_____	_____	_____
<i>landscape installation</i> . (per square foot)	_____	_____	_____
residential	_____	_____	_____
commercial	_____	_____	_____
public/government/municipal	_____	_____	_____
<i>landscape maintenance</i> . (per square foot)	_____	_____	_____
residential	_____	_____	_____
commercial	_____	_____	_____
public/government/municipal	_____	_____	_____

VII. Additional Comments

26. Are there any additional remarks or suggestions you wish to make?

Materials, Supplies and Services List (for use in answering question # 13).

1. Plant material
2. Rock material- boulders, granite, gravel, and other inert material
3. Containers and stakes - boxes, bags, cans, pots, etc.
4. Fertilizer
5. Chemicals: Herbicides, Insecticides, Fungicides and other pesticides
6. Soil amendments: Bark products, peat moss, compost products, other container amendments
7. Packaging materials and shipping cartons
8. Greenhouse and related supplies: burlap, wire baskets, plastic coverings, other miscellaneous materials
9. Irrigation materials/systems for installed landscape
10. Hand tools
11. Office supplies
12. Diesel, gasoline and oil for motor vehicles
13. Other, please describe: _____

Glossary

commercial/industrial landscaping: includes all landscape activities around commercial facilities such as stores, restaurants, hotels and malls and landscape around office complexes, industrial parks, industrial plants and facilities.

conventional shrubs, trees and plants: includes all plants that are not native to desert environments and may include tropical plants, mediterranean or California plants, etc. Many of these plants can be characterized as being lush green plants.

desert shrubs, trees and plants: includes all plants native to desert environments (but not necessarily native to Arizona) and may include such plants as cacti, mesquite, palo verde, Texas ranger, etc.

equipment: includes irrigation equipment, mechanized nursery/farm implements, heating and cooling equipment, office equipment and transportation equipment such as trucks and cars.

full-time equivalent: is 40 person hours per week for 280 days of the year.

field production: refers to plants grown in the ground.

public, government or municipal: refers to all landscape activities undertaken for public or government organizations and includes such areas as around government office buildings, parks, highways and roads.

residential landscaping: includes all landscape activities for private homeowners, associations of homeowners, apartment and townhouse complexes and other groups that maintain private residences.

xeriscape: refers to low water using landscapes that apply the following seven principles: 1) good landscape planning and design, 2) appropriate turf grass areas, 3) efficient irrigation, 4) soil improvements, 5) use of mulches 6) low water use plants, and 7) appropriate maintenance.

APPENDIX C. Nursery Crops Relative to Other Crops in Arizona.

Gross Sales			
Crop	1992	1987	1982
	<i>(in millions of \$)</i>		
Cotton	310	362	358
Vegetables, sweet corn and melons	262	241	202
Fruits, nuts and berries	140	111	85
Nursery and greenhouse crops	65	61	22
Hay, silage and field crops	63	74	62
Grains	40	35	61
Other Crops	20	12	17
Total	899	897	807
Crop	<i>(in percentages)</i>		
Cotton	35	40	44
Vegetables, sweet corn and melons	29	27	25
Fruits, nuts and berries	16	13	11
Nursery and greenhouse crops	7	7	3
Hay, silage and field crops	7	8	8
Grains	4	4	7
Other Crops	2	1	2
Total	100	100	100

Source: 1992 Census of Agriculture: Arizona, U.S. Bureau of the Census.