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Economic Information
Report EIR 02-4

Economic Impacts of the Florida Golf Course Industry

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Economic Impacts of the Florida Golf Course Industry

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Economic Impacts of the Florida Golf Course Industry

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Executive Summary

Economic impacts of the Florida golf industry were estimated for year 2000 based upon a survey of golf courses, together with other published data and regional economic models. A survey questionnaire was mailed to 1,334 golf courses. Responses were received from 223 firms, representing a 17 percent response rate, and results for survey respondents were extrapolated to estimate values for the entire population. The respondent golf courses were classified as private (50%), semi-private (27%), public (14%), municipal (9%), resort (5%), and military (1%). Residential developments were part of 54 percent of Florida golf courses, with some 756,000 residential units, which had an average value of \$366,000 and a total value of \$158Bn. Florida golf courses had 27,718 golf holes.

Total annual revenues amounted to \$4.44 billion (Bn), including membership and initiation fees (38%), playing fees (27%), food and beverage services (18%), retail sales (6%), lodging (4%), and miscellaneous other activities (9%). The revenues for year 2000 were 49 percent higher than a previous estimate of \$3.0Bn in 1991–92, representing an average annual growth rate of 5 percent in nominal dollar terms. Florida counties with golf course revenues in excess of \$100 million (Mn) were Palm Beach (\$664Mn), Collier (\$476Mn), Dade (\$288Mn), Broward (\$261Mn), Indian River (\$211Mn), Lee (\$196Mn), Hillsborough (\$193M), Pinellas (\$145Mn), Orange (\$131Mn), Martin (\$115Mn), and Duval (\$110Mn). Results were also summarized for 8 economic regions of Florida.

Golf industry employment was 73,000 persons, including clubhouse personnel (68%), and golf course maintenance personnel (32%), with 71 percent as full-time and 29 percent as part-time, temporary or seasonal employees. Annual expenses amounted to \$3.70Bn, including golf course maintenance (29%), food and beverage service (20%), golf operations (13%), administrative overhead (12%), clubhouse (10%), capital (9%), tennis, fitness and other recreation services (4%), and miscellaneous other expenses (4%). Charitable contributions made by golf courses amounted to \$12Mn in cash and \$25Mn in-kind. The book value of assets owned by golf courses was \$10.8Bn, including land (58%), buildings and installations (26%), vehicles and equipment (10%) and golf course irrigation systems (6%).

Area owned by golf courses was 205,000 acres, with 147,000 acres in maintained turf, and 140,000 acres irrigated. Bermudagrass was the predominant type of turfgrass used on golf courses, representing 93 percent of maintained turf area. Water used for irrigation amounted to 173 billion gallons, of which recycled water was the dominant source (49%), with lesser amounts from surface waters (29%) and wells (21%). Compared to 5 years ago, water use per acre was increased by 9 percent of firms, decreased by 42 percent, and remained the same for 42 percent. Fertilizer use per acre was increased by 29 percent of firms, decreased by 18 percent, and remained the same for 47 percent. The irrigation control system was automated by 94 percent of courses.

Rounds of golf played in Florida totaled 58.6 million in 2000, with 33 percent by out of state visitors, 14 percent by non-local Florida residents, and 54 percent by local residents. There were 26,298 tournament events hosted by Florida golf courses, with attendance of 2.11 million spectators. Travel expenses in Florida by golf playing visitors were estimated at \$22.9Bn, of which \$5.4Bn may be attributed directly to the golf experience, based upon national average golf travel data. These expenditures had an impact on the Florida

economy of \$9.2Bn in personal and business net income (value added) and 226,000 jobs.

The study evaluated the effect of golf courses on property values in 18 counties. Value measures included assessed value, tax value, land value, sale price, and total value, and types of properties examined included residential, commercial, agricultural, industrial, government, and utility. Overall, the influence of golf courses on property values appeared to be very positive. In 13 of the 18 counties, total values and land values across all land use types were significantly greater within the same square mile section as golf courses. Differentials were as high as \$46,537 for residential properties near golf courses in Martin County. Collier County had the highest differential value for the commercial (\$184,244) and agricultural (\$386,866) land uses. Total county property taxes attributed with golf courses in the selected counties, based on average county millage rates in 1999, were estimated at \$214Mn.

Acknowledgments

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Introduction

Golf is a highly popular recreational activity in the United States. In 2000, there were over 15,000 golf facilities in the country (NGF, 2001). Florida has over 1,300 public and private golf courses, more than any other state. Numerous acclaimed golf courses in Florida are host to prestigious tournaments, including the PGA tour, which is headquartered in the state. Golf courses in the Ft. Myers, Naples, and Ft. Pierce/St. Lucie areas of Florida are among the top five specific golf destinations in the U.S. Florida's warm climate allows golf play throughout the year, and golf is a primary activity for many of the millions of tourists who visit the state each year.

Florida's golf industry is large and robust. According to a 1991 economic study (Hodges *et al*, 1994), there were about 1,100 golf facilities in Florida. Sixty percent were privately owned, 17 percent semi-private, 12 percent public, with the remainder either resort, municipal, or military. Nearly 80 percent of the facilities were 18-hole courses on which nearly 40 million rounds of golf were played. This translates into 45,000 rounds of golf played per course in 1991. In terms of economic activity, Florida's golf industry generated \$3.01Bn in sales and \$2.92Bn in economic value added, employed 13,400 full-time equivalent persons in golf course maintenance, spent \$469Mn for labor, equipment, materials and services, had total assets of \$1.07Bn, and managed 131,000 acres of land.

The present study updates this information for year 2000 to reflect the growth in the industry and to assess the impact of golf tourism to Florida. Because out-of-state visitors bring new money into the Florida economy, their impact on the golf industry and tourism sector is associated with an economic multiplier effect. This involves three levels of economic activity: *direct* expenditures by tourists, *indirect* expenditures by golf facilities on inputs used in operations and maintenance, and *induced* impacts resulting from personal consumption expenditures by industry employees and allied suppliers.

Water use for landscape irrigation is a critical and growing issue in Florida. Many golf course superintendents are aware of the increasing political pressures to reduce consumption or switch to alternative water sources, such as reclaimed water. Mounting urban populations are placing unprecedented pressures on the natural resource base in many regions of the United States. At the same time, heightened environmental awareness by the public is focusing attention on heavy consumers of water, fertilizers, and pesticides. These pressures are being felt increasingly by agricultural interests and commercial users of these inputs. Golf courses, which are generally located close to or within urban centers, are particularly prone to public scrutiny of resource use practices. With more golf courses than any other state, and with a rapidly expanding urban population, the Florida golf course industry is often in the spot light with regard to water consumption practices. This is particularly true during periods of drought, which Florida has experienced in recent years, according to a study that examined water and chemical use patterns by Florida golf courses over the past twenty years (Haydu *et al*, 1997).

There is a need for information to better inform policy makers about the economic value of water use by golf courses and the potential economic impacts of water use restrictions. Some of the key questions in this regard include:

- What is the history and projected future water use by golf courses?
- What sources of water do golf courses use and what share of total use does each represent? (e.g. potable groundwater, treated effluent, de-salinated)
- What are the capital and operating costs for golf course irrigation?
- How many golf courses have upgraded to new higher efficiency irrigation systems?

Increasingly, golf courses are being constructed as part of larger residential community development projects. In fact, interviews with developers in Florida indicated that the majority of new golf courses constructed are located within residential settings. Golf course communities are typically viewed as a highly desirable place to live — for their enhanced aesthetic qualities, recreational sport activities, and the amenities derived from clubhouse and dining facilities. Because of the premiums people typically pay to enjoy these amenities, it is anticipated that golf facilities may significantly influence overall real estate values in the community. An objective of this research is to document these potential impacts.

Methodology

Survey

Information to be collected from Florida golf courses and issues of concern to the golf industry were determined based on comments received in two focus group sessions with golf course owners and managers at Apopka and Naples, Florida in July, 2001. These sessions included a total of 12 industry professionals, representing industry associations, individual golf course owners, managers, and superintendents. Based on their recommendations it was decided to use a mail survey approach rather than a telephone or internet survey, since typically several people in each organization would be required to provide different types of information. Information collected in this survey was for year 2000 and included two major categories:

1. Financial Information

- Business revenues
- Financial expenditures
- Employment
- Value of assets managed

2. Descriptive, Operational and Cultural Information

- Type of golf course
- Number of golf rounds played
- Geographic origin of golfers
- Number and value of associated residential developments
- Golf course area managed
- Types of turfgrass maintained
- Volume and source of irrigation water consumption.

Survey questionnaires were mailed to a list of golf courses that was compiled from three different sources: 1) the membership of the *Florida Golf Course Superintendents Association*, 2) the subscribers to *Florida Golf News* magazine, and 3) Florida firms listed in the *Reference USA* database under Standard Industrial Code 7992 (public golf courses) and 7997 (private membership sports clubs). These lists were combined, sorted and checked to eliminate duplicates, resulting in a list of 1,334 firms. Surveys were mailed to the listed firms two times, in October and November 2001, with a followup reminder postcard mailed one week later. Completed survey questionnaires were received from 223 firms, representing a 17 percent response rate. Results for survey respondents were extrapolated to estimate values for the entire population using expansion factors computed as the number of qualified courses divided by the number of respondents for each major type of variable (Table 1). The overall expansion factor was 5.8, which meant, for example, that each acre of golf course land reported by respondents represented an estimated 5.8 acres industry-wide.

Table 1. Florida golf course population, survey respondents, and expansion factor.

Item Description	Number
Golf course population	1,334
Number undeliverable questionnaires	40
Number qualified golf courses	1,294
Number survey respondents	223
Overall expansion factor	5.8

Revenues

Revenues for golf courses were reported by responding firms in the categories shown in Table 2. From this information, actual sales were estimated for the purpose of computing total industry revenues by using the midpoint value of each revenue range in conjunction with the appropriate expansion factor.

Table 2. Annual revenue categories, estimated sales, and number of respondents, Florida golf course survey, 2000.

Revenue Category	Estimated Sales (midpoint of range)	Number Survey Respondents
Less than \$500,000	\$250,000	15
\$500,000 to \$999,999	\$750,000	24
\$1,000,000 to \$1,999,999	\$1,500,000	42
\$2,000,000 to \$2,999,999	\$2,500,000	46
\$3,000,000 to \$3,999,999	\$3,500,000	22
\$4,000,000 to \$4,999,999	\$4,500,000	24
\$5,000,000 to \$7,499,999	\$6,250,000	16
\$7,500,000 to \$9,999,999	\$8,750,000	4
\$10,000,000 to \$14,999,999	\$12,500,000	5
\$15,000,000 to \$19,999,999	\$17,500,000	4
\$20,000,000 to \$24,999,999	\$22,500,000	1
\$25,000,000 or greater	\$27,500,000	1

Property Values

Data on property values in proximity to golf courses was obtained from a database of county property tax records for 1999 from the Florida Department of Revenue (Tallahassee). The data were analyzed for 18 of the top Florida counties that collectively accounted for 71 percent of all golf courses in the state. These data were then segmented into two basic groups — areas that contained golf course facilities and similar areas that did not contain golf course facilities. The spatial resolution of analysis was a one-square mile area of the Public Land Survey System (section, township, range). Properties in each respective group and land use type were then compared to assess the likelihood of significant differences in property values. Land use categories included residential, commercial, agricultural, industrial, utility and government. Measures of value examined were market values, assessed tax values and land values of each parcel. For example, values of residential properties in Collier County that fell within a defined one-square mile section and that contained a golf course were compared with values of residential properties in sections that did not contain a golf course. Statistical tests were conducted on the difference in values with respect to presence or absence of a golf course (t-test, SAS) to determine the statistical significance.

Economic Impact Analysis

The total economic impacts of the Florida golf industry were evaluated using the *Implan* input-output analysis and social accounting software package and data for Florida counties (MIG, Inc., Stillwater, MN). A regional economic model was developed for the state of Florida. Economic multipliers from the regional model were used to estimate the secondary economic effects of inter-industry purchases, investment, and consumer expenditures by industry employees. Economic impact measures included output, employment, value added, personal income, and indirect business taxes (Table 3). Impact measures were expressed on the basis of per acre of golf course area and per million gallons water consumed to enable comparisons of economic efficiency with other economic sectors and to other major golf states.

Table 3. *Implan* multipliers for Florida golf tourism sectors (1999).

Industry (<i>Implan</i> Sector)	Output	Value Added	Labor Income	Indirect Business Taxes	Employment (jobs per \$Mn output)
Hotels and Lodging Places	2.418	1.580	1.008	0.143	36.2
Transportation Services	2.393	1.614	1.222	0.076	37.6
Eating & Drinking	2.306	1.404	0.935	0.137	42.3
Amusement and Recreation Services, N.E.C.	2.377	1.577	1.003	0.124	39.7
Membership Sports and Recreation Clubs	2.501	1.537	1.127	0.115	46.3
Miscellaneous Retail	2.407	1.746	1.102	0.229	44.5

Source: MIG, Inc, Stillwater, MN

Results were also reported for eight areas of the state (Table 4 and Figure 1) that represent functional economic regions, defined on the basis of worker commuting patterns by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA).

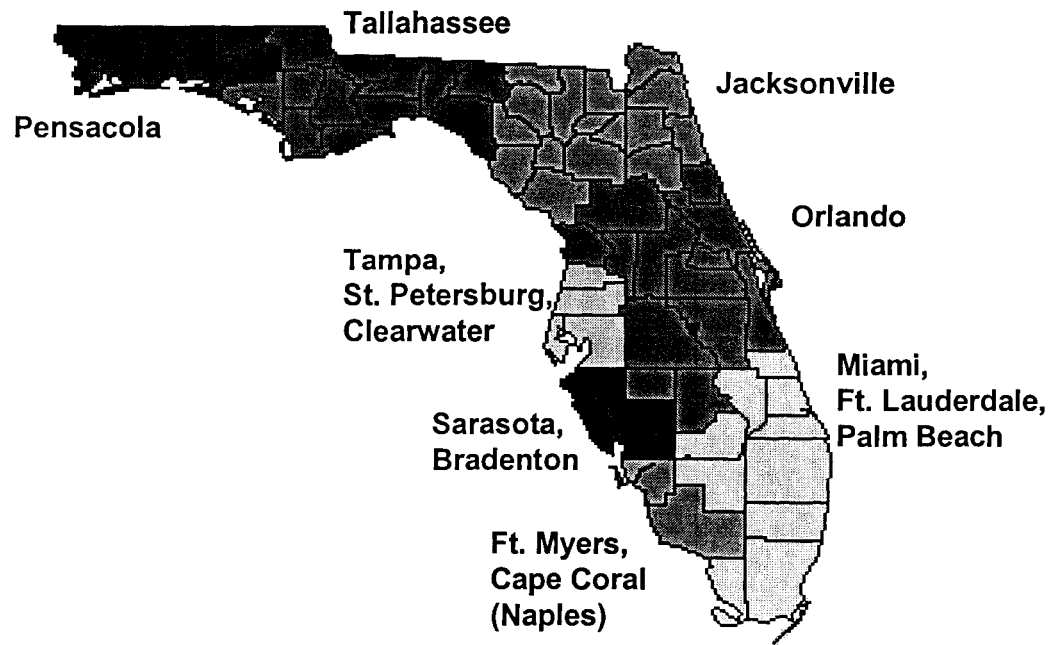
Table 4. Economic regions for the state of Florida.

BEA Region	Region Name, Central Place	Counties Included
31	Miami-Ft. Lauderdale	Indian River, St. Lucie, Okeechobee, Glades, Hendry, Palm Beach, Broward, Dade, Monroe, Martin
32	Ft. Myers-Cape Coral (Naples)	Lee, Collier
34	Tampa-St. Petersburg-Clearwater	Hernando, Pasco, Pinellas, Hillsborough,
33	Sarasota-Bradenton	Sarasota, Manatee, Charlotte, Desoto
30	Orlando	Flagler, Marion, Citrus, Sumter, Lake, Polk, Hardee, Highlands, Osceola, Orange, Seminole, Brevard, Volusia
29	Jacksonville	Hamilton, Suwannee, Lafayette, Dixie, Levy, Gilchrist, Columbia, Alachua, Baker, Union, Bradford, Nassau, Duval, Clay, Putnam, St. Johns
35	Tallahassee	Bay, Jackson, Calhoun, Gulf, Liberty, Franklin, Gadsden, Leon, Wakulla, Jefferson, Madison, Taylor
81	Pensacola	Escambia, Santa Rosa, Okaloosa, Walton, Holmes*, Washington*

* Counties from adjacent Dothan, Alabama economic region

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Figure 1. Economic regions of Florida



Results

Golf Course Characteristics

Florida golf courses fall into eight main categories, but are dominated by three major types — private, semi-private and public. From the survey sample, half (50 percent) of the golf courses were privately owned, an additional quarter (27 percent) were semi-private, and 14 percent were public facilities (Table 5). The remainder was comprised of municipal, residential development, resort and miscellaneous other types. These percentages differ moderately from estimates in the 1991 study that showed 60 percent of courses were classified as private, 17 percent semi-private, and 12 percent were classified as resort. The decline in the percent of courses that are private is consistent with the findings of the National Golf Foundation (NGF). Their 2000 study showed that fully 87 percent of all new openings nationwide were public access facilities, and they expect this trend to continue in the coming years.

Table 5. Ownership of Florida golf courses, 2000.

Course Type	Number Survey Respondents	Percent Respondents (%)
Private	112	50
Semi-Private	61	27
Resort	12	5
Public	31	14
Military	2	1
Residential Development	17	8
Municipal	20	9
Other	1	<1

Note: percent does not sum to 100 because some respondents checked more than one category.

From a sample of 221 golf courses, 8 percent had 9 golf holes or less, 70 percent had 18 holes, 8 percent had 27 holes, 11 percent had 36 holes, and 3 percent had more than 36 holes (Table 6). The overall average number of golf holes per course in 2000 was 21, which represented an estimated 27,683 holes for all courses statewide. Par for the typical course was 76 strokes, and the par value of all golf course holes was 98,541 strokes.

Table 6. Number of golf holes for Florida golf courses, 2000.

Number of golf holes	Number Survey Respondents	Percent Respondents (%)
9 or less	17	8
18	155	70
27	18	8
36	24	11
more than 36	7	3
Total	221	99

Most golf course facilities in Florida are relatively new. The vast majority (83 percent) were built since 1960 and a full one-quarter of existing courses were established in the last 10 years (Table 7). This increase in new golf facilities parallels the state's rapidly growing population, which mushroomed from 4.9 million in 1960 to nearly 16 million in 2000. The increase is also indicative of the growing popularity of golf as a recreational sport, not only in Florida, but around the country. For instance, the number of new facility openings nationwide in 2000 was 20 percent higher than five years earlier, and Florida led the nation with 41 new openings. This growth in supply has been driven by demand. Since 1986, although the overall golf participation rate has declined, the number of golfers has increased 34 percent, from 19.9 million to 26.7 million (NGF, 2001).

Table 7. Year of establishment of Florida golf courses surveyed.

Year	Number Survey Respondents	Percent Respondents (%)
Before 1910	2	1
1910-19	2	1
1920-29	12	6
1930-39	2	1
1940-49	5	2
1950-59	10	5
1960-69	31	15
1970-79	44	21
1980-89	48	23
1990-99	51	24
2000 or later	6	3
All	212	95

Golf Course Area, Turf Varieties and Water Use

Total acreage devoted to Florida golf facilities in year 2000 was 207,582 acres, of which 147,927 acres (95%) were maintained in turfgrass playing areas, and 140,274 acres (70%) were irrigated (Table 8). The maintained turf area (fertilized and mowed) was up from 131,300 acres in 1991, a 13 percent increase for the ten years. The average area per course in year 2000 was 108 acres irrigated and 114 acres maintained turf, down from 125 acres in 1991.

Table 8. Golf course area in Florida, 2000.

	Number Survey Respondents	Mean Per Course +/- Standard Error (Acres)	Expanded Total (Acres)
Land owned	214	160 +/- 11	207,582
Turf area maintained	217	114 +/- 5	147,927
Area irrigated	217	108 +/- 5	140,274

Although more than half a dozen varieties of turfgrass are used on Florida golf courses, by far the most predominant was bermudagrass (Table 9). Roughly 92 percent of the 147,927 acres of maintained turf area was planted in bermudagrass, or 102 acres per course. This grass is preferred in Florida for its drought resistance, tolerance to heavy traffic, and utility in either the fairways or rough. Far down the list in second place was bahiagrass with 5,251 acres, representing 3.5 percent of the total, or 4 acres per course. Bahiagrass is typically limited to the golf course rough. St. Augustinegrass was the only other turf variety that was of significance, with 2.7 percent of the total acreage planted. Each of the remaining varieties constituted less than 1 percent, and are generally limited to the special tee and greens areas.

Table 9. Turfgrass varieties used by Florida golf courses, 2000.

Turfgrass Variety	Survey Respondents		Mean Per Course +/- Standard Error (Acres)	Share of Total Area (Percent)	Expanded Total Area (Acres)
	Number	Percent			
Bermudagrass	214	96	102 +/- 5	93	136,773
Bahiagrass	67	30	4 +/- 2	4	5,251
St. Augustinegrass	89	40	3 +/- 1	3	3,996
Mixed/other grasses	25	11	1 +/- 1	1	1,351
Zoysiagrass	25	11	<1 +/- 0	<1	257
Centipedegrass	6	3	<1 +/- 1	<1	299
Specific other type(s)	26	12			
Total				100	147,927

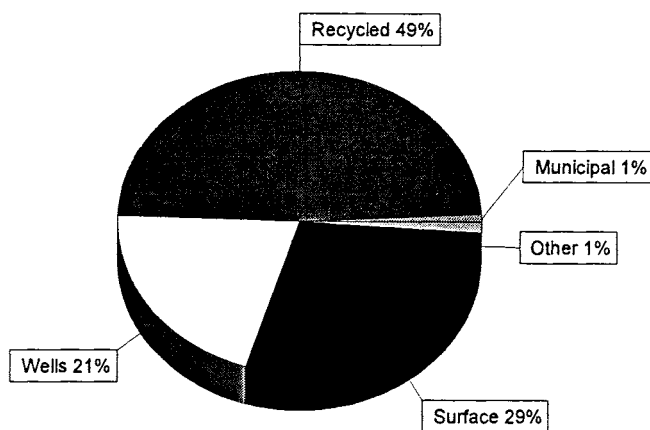
This study examined several aspects of management practices used by golf courses: 1) sources of irrigation water, 2) changes in water use per acre, 3) changes in fertilizer use per acre, and 4) whether or not the golf course had installed an automated irrigation control system.

Total water use by Florida golf courses in 2000 was estimated at 172 billion gallons. Average water use per golf course was 133 million gallons per year, plus or minus 30 million gallons (95% confidence interval). Information related to water sources is shown in Table 10 and Figure 2. Nearly 85 billion gallons of water came from recycled water, compared to 49 billion for surface water, 35 billion from wells, and 1.5 billion from municipal sources. Taking total irrigated acres and dividing it into the total amount consumed from all water sources, average consumption by Florida golf courses was 1.23 million gallons per acre, or 3.75 acre feet applied in 2000.

The use of recycled water was the primary source for almost half of all golf facilities and has grown from 8 percent in 1974 to 21 percent in 1994 and to 49 percent in 2000. The second most common source was

Figure 2. Sources of irrigation water for Florida golf courses, as a percentage of total water use, 2000.

Irrigation Sources for Florida Golf Courses, 2000



surface water such as canals and lakes (29 percent), followed by groundwater (21 percent) from wells. Use of surface water rose from 23 percent of golf courses in 1974 to 37 percent in 1994, but then declined to 29 percent in 2000. Groundwater as a source declined from 61 percent in 1974 to 41 percent in 1994, falling further to 21 percent in 2000. Clearly, much of the shift from surface and groundwater has been replaced by the dramatic growth in the use of recycled water to irrigate Florida's golf courses.

Table 10. Water used for irrigation of Florida golf courses, by source, 2000.

Water Source	Survey Respondents		Mean Per Course +/- Standard Error (Million gallons)	Share of Total (Percent)	Expanded Total Amount (Billion gallons)
	Number	Percent			
Recycled	71	32	51 +/- 22	49	85
Surface Water	75	34	30 +/- 8	29	49
Wells	85	38	21 +/- 5	21	36
Municipal	8	4	1 +/- 3	1	2
Other (desalination, ASR, etc.)	3	1	1 +/- 4	1	1
Total Water Used	169	76	133 +/- 16		173

Other surveys of water and fertilizer use indicate that Florida golf courses have markedly reduced consumption of fertilizers and pesticides on a per acre basis and were increasingly shifting sources of water from ground to recycled. From a water policy and efficiency standpoint, perhaps even more important than total consumption per acre are changes in water use patterns over time. To address this issue, golf course superintendents were asked whether irrigation water use per acre over the past five years had increased, decreased or remained the same (Table 11). If it increased or decreased, respondents were asked to specify how much it had changed. About 42 percent of respondents indicated that their water consumption had decreased, and the same share (42%) said that per acre use remained the same. For those who indicated a reduction in water use, the amount of decrease averaged 37 percent. Nine percent of respondents indicated per acre water use actually increased over the past five years and that it increased by roughly 8 percent.

Table 11. Changes in Florida golf course consumption of water and fertilizer use, 2000.

Change Variable	Survey Respondents	
	Number	Percent
Irrigation water use per acre over past 5 years		
Increased	20	9
Decreased	94	42
Remained same	93	42
Amount increased	18	8
Amount decreased	83	37
Fertilizer use per acre over past 5 years		
Increased	64	29
Decreased	39	18
Remained same	104	47
Amount increased	64	29
Amount decreased	39	18

A similar set of questions was asked about fertilizer use patterns over the past five years. Nearly half (46%) of all respondents stated that fertilizer use per acre remained the same. More than a quarter (29%) indicated that it had increased and that the average percentage increase was 28 percent. Almost a fifth (18 %) stated fertilizer use had declined, with the magnitude of reduction a similar percentage (18%).

Finally, respondents were asked whether or not the golf course had automated irrigation systems installed, and whether they were original or retrofitted from a manual system. Nearly all (94%) stated that their course had an automated system and more than half (53%) indicated it was installed at the time of original construction.

Golf Play

Total golf play on Florida golf courses in 2000 was estimated at nearly 59 million rounds. As a percentage of total rounds played, nearly half (49%) occurred during the January through April period (Table 12). Fall was the second most popular period with 28 percent, or 16 million rounds being played, followed lastly by the May through September period with just under one-quarter, or 14 million rounds.

Table 12. Seasonal distribution of golf play in Florida, 2000.

Season	Survey Respondents		Mean Per Course +/- Standard Error (Rounds)	Share of Total (Percent)	Expanded Total (Million Rounds)
	Number	Percent			
January-April	198	89	19,763 +/- 962	49	28.7
May-September	195	87	9,468 +/- 574	23	13.7
October-December	199	89	11,150 +/- 591	28	16.2
Total	205	92	45,259 +/- 1,715		58.6

Florida is well known for its large influx of winter visitors from many northern states as well as international locations, particularly Europe and South America. The geographic origin of golfers in general tends to be associated with distance to the course. At 54 percent or 31.4 million rounds, local county residents were the group most frequently playing golf (Table 13). The second most common group were U.S. residents from outside Florida, representing 27 percent of total rounds played. Non-local Florida residents were the third-ranked group with 14 percent or 8 million rounds, followed lastly by international visitors who accounted for just over 5 percent or 3.2 million rounds of golf. A total of over 19 million rounds (32%) were played by out-of-state visitors to Florida.

Table 13. Geographic origin of golfers playing golf in Florida, 2000.

Geographic Origin	Survey Respondents		Mean Per Course +/- Standard Error (Rounds)	Share of Total (Percent)	Expanded Total (Million Rounds)
	Number	Percent			
Local (county) residents	184	83	20,372 +/- 1,315	54	31.5
International visitors	133	60	2,049 +/- 347	5	3.2
U S residents outside Florida	175	79	10,277 +/- 980	27	15.9
Non-local Florida residents	146	66	5,209 +/- 663	14	8.1
Total				100	58.6

Florida Golf Visitors and Expenditure Impacts

One of the objectives of this research was to estimate the total economic impact of golf visitors to the state of Florida. The tourism industry publishes information regarding the impact of tourism to the state, but not estimates of the impact of golf-related recreation. Information was obtained from the National Golf Foundation on golf traveler characteristics in the United States, such as the average number of rounds played per day and per year, the number of days spent annually in golf-related travel, the average number of golf trips per year, and average expenditures per trip. The typical U.S. golf traveler makes 6.6 golf-related trips per year with an average of 3.95 days per trip, or a total of 26 days each year in golf-related travel (Table 14), and spends an average of \$1,114 per trip or \$282 per day on lodging, local transportation, food, entertainment, golf lessons, gifts, and miscellaneous other expenses (NGF, 1999). This excludes transportation expenses to the destination since these expenditures were not necessarily made in Florida.

Table 14. Descriptive characteristics for golf course travelers in the United States, 1998.

Description	Average Number
Rounds played per year played by golf travelers	6.1
Days spent in golf-related travel	26.1
Golf-related trips per year	6.6
Rounds played per trip	0.92
Days per trip	3.95
Rounds played per day	0.23

Source: National Golf Foundation, 1999. "The U.S. Golf Travel Market, 1998 edition", Pub. 99MR002, Jupiter, FL.

The U.S. travel data were used together with survey data from the present study to estimate the travel characteristics of Florida golf visitors. It is reasonable to assume that the U.S. average golf travel data are representative of golf travelers to Florida since this state is the largest golf travel market in the United States. Based on 19.04 million rounds of golf played in Florida by out-of-state visitors, it is estimated that there were 3.12 million golf-playing visitors to Florida in 2000, who made 20.6 million golf-related trips and spent a total of 81.5 million visitor days in Florida (Table 15).

Table 15. Estimated golf-playing visitor activity in Florida, 2000.

Description	Number (million)
Golf rounds played by visitors	19.04
Golf travelers	3.12
Golf traveler-days	81.48
Golf trips	20.60

Based on the U.S. average golf-travel expenses per day and the estimated number of golf-visitor days in Florida, total golf-travel expenditures by Florida visitors amounted to nearly \$23 billion (Table 16). Of this amount, about 23 percent of the total trip expenditures, or \$5.4Bn, may be attributed to golf, based on the number of travel days and number of rounds of golf played.

Table 16. Travel expenditures by Florida golf visitors, 2000.

Type of Expenditure	Average Per Trip ¹	Average Per Day ²	Estimated Total Expenses ³	Expenses Attributable to Golf ⁴
	\$		\$Million	
Lodging	403	102	8,303	1,941
Transportation	87	22	1,793	419
Food	203	51	4,183	978
Entertainment	113	29	2,328	544
Golf lessons	106	27	2,184	510
Gifts	87	22	1,793	419
Other	115	29	2,369	554
Total expenses ⁵	1,114	282	22,953	5,364

¹ National Golf Foundation, 1999. "The U.S. Golf Travel Market, 1998 Edition".

Publication 99MR002.

² Average per trip divided by average number travel days per trip.

³ Average expenditure per day multiplied by estimated number of traveler-days.

⁴ Share of trip expenses attributable to golf (23%).

⁵ Excludes transportation expenses to destination of \$227 per trip.

As noted earlier, visitors to Florida impact the economy at three levels — *directly* on expenditures such as food, recreation, lodging and entertainment, *indirectly* by the receiving industries of those dollars as they in turn spend money to purchase goods and services to operate their businesses, and *induced* impacts from personal consumption expenditures by the employees of these companies and their allied suppliers. The cross-section of industries influenced by tourism spending for the major sectors of the Florida economy, and the three levels of economic impact, are shown in Table 17. The impacts were estimated for the measures of output, value added, and employment.

Output represents total revenues generated from the three levels of economic activity. The output impact from golf tourism spending totaled \$12.86Bn. It was dominated by three sectors — services, which accounted for \$5.06Bn, or 39 percent of the total; trade with \$3.05Bn, or 24 percent; and finance, insurance and real estate, which comprised \$1.36Bn or 10 percent. Combined, these three sectors represented more than four-fifths of the total output impact. Direct impacts represented 41 percent of the total output impacts, indirect effects constituted 11 percent, and induced effects made up 47 percent.

Value-added is a measure of net industry income after cost of goods sold have been subtracted from total sales. Of the \$8.46Bn in total value added impact, the services sector accounted for \$3.27Bn (39%), trade for \$2.14Bn (25%), and finance, insurance and real estate comprised \$984Mn (12%). Value added included impacts on labor income of \$5.58Bn and on indirect business taxes paid to local, state, and federal governments of \$792Mn.

Finally, the total employment impact represents the jobs that are generated from all economic activities due to golf visitor spending, which totaled 215,873 in 2000. The component responsible for the majority of employment was the service sector with 96,000 jobs, followed by trade with 72,000 jobs, and third was the government, which accounted for nearly 17,000 jobs.

Table 17. Total economic impacts of golf visitor expenditures in Florida, by major industry sector, 2000.

Industry Sector	Total Output	Total Value	Total
	Impact (\$million)	Added Impact (\$million)	Employment Impact (jobs)
Services	5,060	3,268	95,641
Trade	3,049	2,144	71,574
Finance, Insurance, Real Estate	1,355	984	7,092
Transportation, Communication, Public Utilities	1,031	649	11,229
Government	971	886	17,109
Construction	779	282	7,509
Manufacturing	534	192	3,321
Agriculture	63	36	1,385
Other	11	11	958
Mining	6	3	55
Total	12,860	8,455	215,873

Golf Course Revenues

Total revenues for Florida golf courses in 2000 were estimated at \$4.44Bn. Golf courses ranged widely in financial size from a less than \$500,000 to greater than \$25Mn in annual revenues (Table 18). Golf courses in the \$1 to \$3Mn size range represented the largest share of respondents (44%). About 86 percent of all respondent firms had annual revenues under \$5Mn. Golf courses with revenues in the \$2 to \$3Mn range represented the largest share of total industry revenues (16%).

Table 18. Distribution of golf course respondents based on revenue, 2000.

Annual revenue range	Survey Respondents		Share of Total Revenues (Percent)	Expanded Total Revenues (\$ million)
	Number	Percent		
Less than \$500,000	15	7	1	22
\$500,000 to \$999,999	24	12	3	120
\$1,000,000 to \$1,999,999	42	21	9	384
\$2,000,000 to \$2,999,999	46	23	16	727
\$3,000,000 to \$3,999,999	22	11	11	491
\$4,000,000 to \$4,999,999	24	12	15	659
\$5,000,000 to \$7,499,999	16	8	15	647
\$7,500,000 to \$9,999,999	4	2	5	212
\$10,000,000 to \$14,999,999	5	3	9	387
\$15,000,000 to \$19,999,999	4	2	10	454
\$20,000,000 to \$24,999,999	1	1	3	143
\$25,000,000 or greater	1	1	4	190
Total/All	204	100	100	4,437

Sources of revenue and their relative importance are presented in Table 19 and Figure 3. The primary source of revenue was membership and initiation fees, which accounted for \$1.7Bn or 38 percent of total revenues. The second most important revenue generating source was golf course playing fees, accounting for at \$1.2Bn or 27 percent of total revenues. Restaurant, food and beverage services accounted for \$794Mn or 18 percent, retail sales (proshop and gift shops) accounted for \$267Mn or 6 percent, lodging represented \$164Mn or 4 percent, and miscellaneous other revenues comprised \$366Mn, for the remaining 8 percent.

Figure 3. Sources of revenue for Florida golf courses in 2000.

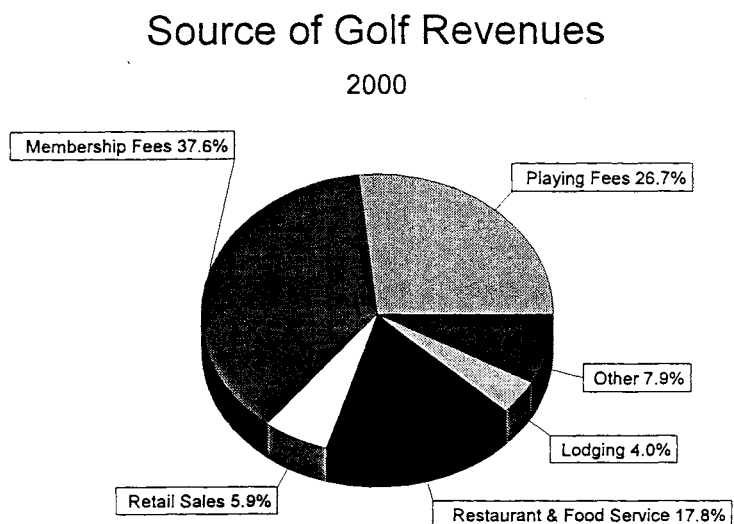


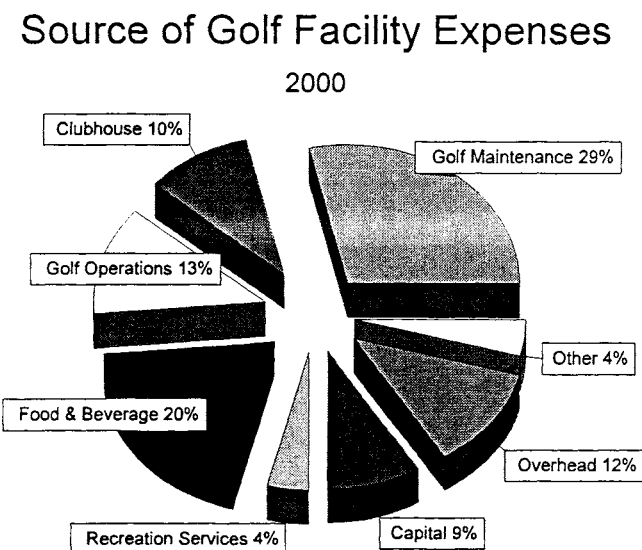
Table 19. Revenues to Florida golf courses, by business activity, 2000.

Business Activity	Respondents		Mean Revenues Per Course +/- Standard Error (\$1000)	Expanded Total Revenues (\$ million)
	Number	Percent		
Golf course membership and initiation fees	173	78	1,135 +/- 137	1,665
Golf course playing fees (greens, carts, dues)	198	89	808 +/- 61	1,186
Restaurant, food and beverage services	176	79	542 +/- 66	794
Other	79	35	249 +/- 149	366
Retail sales (pro shop, gift shop)	161	72	182 +/- 21	267
Lodging	12	5	112 +/- 304	164
Total			3,429 +/- 272	4,437

Golf Course Expenses

Expenses to operate Florida golf course facilities averaged \$2.86Mn for the sample of responding firms (Table 20). Expanding this to represent the entire population of Florida golf courses, industry-wide expenses totaled \$3.7Bn in 2000. Eight expense categories were identified in this study. The most significant expense was golf course maintenance, representing 29 percent of the total (Figure 4). Average maintenance expenses were \$677,000 per firm or \$7,139 per acre of turf area. The second largest category was expenses associated with food and beverage services, which averaged \$464,000 per firm or 20 percent of total expenses. Golf operations was the third most significant category at \$301,000 per facility or 13 percent of total

Figure 4. Distribution of expenses for Florida golf facilities in 2000.



expenses. This was followed closely by administrative overhead accounting for 12 percent of expenses (\$283,000), clubhouse operations at 10 percent or \$244,000, capital expenditures (purchases, interest, and depreciation) at 9 percent or \$222,000, and lastly by recreational services such as tennis and fitness training, accounting for 4 percent or \$82,000 per facility. Florida golf courses purchased a total of \$511Mn in goods and services, or 14 percent of total expenses, from vendors outside the state.

Golf courses are frequently asked for charitable contributions for local schools, civic organizations, and other non-profit organization. In 2000 the average golf course provided \$9,000 worth of cash contributions and in-kind contributions, including golf rounds valued at \$19,000. Total contributions averaged \$28,000 per golf facility or \$36 million for the industry as a whole.

Table 20. Expenses for golf course operations and related business activities, 2000.

Expense Category	Survey Respondents		Mean Expense Per Course +/- Standard Error (\$1,000)	Expanded Total Expenses (\$ million)
	Number	Percent		
Golf course maintenance	183	82	677 +/- 47	1,056
Food & beverage service	155	70	464 +/- 63	725
Golf operations	169	76	301 +/- 28	470
Administrative overhead	146	66	283 +/- 36	441
Clubhouse	152	68	244 +/- 37	381
Capital (purchases, interest, depreciation)	118	53	222 +/- 64	347
Other	47	21	94 +/- 57	147
Tennis/fitness, other recreation services	82	37	82 +/- 27	129
Total costs	187	84	2,856 +/- 230	3,696
Purchases from vendors outside Florida	119	53	395 +/- 78	511

Golf Course Employment

Employment is an important indicator of an industry's contribution to a local, regional, or national economy. Wages paid to employees stimulate an economy when they are spent locally in the purchase of other goods and services. In 2000, Florida's golf course industry employed an estimated 72,038 people, including 51,375 full-time workers and 20,663 part-time workers (Table 21). One-third (33%) of these full and part-time employees worked on golf course maintenance activities, while the remaining two-thirds (67%) worked for the golf course clubhouse and/or related food service or recreational concerns.

The average golf course employed 16 full-time and three part-time people for its highly intensive maintenance work, which includes both the care of the course and the equipment used to maintain the turfgrass. On a per acre basis, this translates into roughly one person for every 5 acres of maintained grass. At two-thirds of the total, the clubhouse component of the golf facility utilizes the larger share of total employment, due primarily to the larger number of separate business activities. For example, depending on the size of the facility, services may include hotel operations, restaurant management and service, and recreational services such as golf and tennis instruction. The average golf course employed 27 full-time people and 19 part-time or seasonal labor for clubhouse related activities. On average, total facility employment translates into one employee for every \$150,000 of financial assets in land, vehicles and equipment, irrigation systems, and golf-owned buildings and installations. These figures attest to the substantial employment impact Florida's golf course industry has on the state's economy. Put in different perspective, golf course industry employment was close to the 80,000 people

that work for all the theme and amusement parks in the state and greatly exceeded the 50,000 wage and salaried employees in production agriculture (Florida Statistical Abstract 2000).

Table 21. Employment by Florida golf courses, 2000.

Employee Type	Survey Respondents		Mean Per Course	Expanded Total
	Number	Percent	+/- Standard Error (Jobs)	Employment (Jobs)
Course maintenance, full-time	221	99	16 +/- 1	21,205
Course maintenance, part-time/seasonal	156	70	3 +/- 0	2,396
Clubhouse/other, full-time	190	85	27 +/- 3	30,170
Clubhouse/other, part-time/seasonal	167	75	19 +/- 2	18,268
Total Employment	222	100	56 +/- 4	72,038

Golf Course Assets

In 2000, Florida’s 1,334 golf courses owned assets with an estimated value of \$10.8Bn (Table 22). Asset categories include land, vehicles and equipment, irrigation systems and golf-owned buildings and equipment. Land comprised the largest share of total industry assets, at \$6.2Bn or 58 percent of the total (Figure 5). Golf-owned buildings and equipment accounted for the second largest share (26%), valued at \$2.8Bn, followed by vehicles and equipment valued at \$1.1Bn (10%), and irrigation systems valued at \$684Mn (6%). At the firm level, the average golf facility owned \$8.3Mn of total assets, comprised of land (\$5.2Mn), buildings and installations (\$2.3Mn), vehicles and equipment (\$848,000), and irrigation systems (\$570,000). The average golf course owned \$29,995 worth of assets on a per acre basis.

Figure 5. Distribution of Florida golf course assets as a percentage of total assets, 2000.

Distribution of Golf Facility Assets

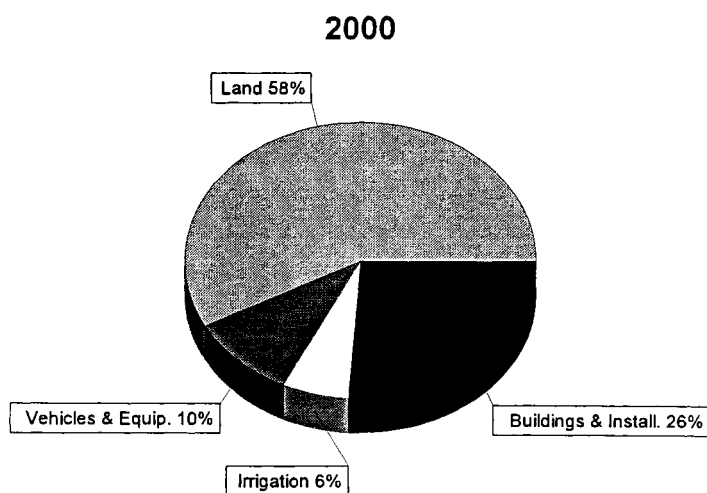


Table 22. Value of total assets owned by Florida golf course facilities as of December 2000.

Asset Type	Survey Respondents		Mean Per Course	Expanded
	Number	Percent	+/- Standard Error (\$1000)	Total Assets (\$ million)
Land	134	60	5,180 +/- 872	6,226
Golf-owned buildings & installations	135	61	2,323 +/- 231	2,813
Vehicles and equipment	142	64	848 +/- 72	1,080
Irrigation systems	134	60	570 +/- 59	685
Total	147	66	8,350 +/- 926	10,805

Regional and County Economic Characteristics

Economic characteristics and impact estimates for the Florida golf course industry were also developed for counties and regions of the state, to support local policy analysis. Table 23 shows economic characteristics for eight regions defined by the U.S. Department of Commerce's *Bureau of Economic Analysis*, including the number of golf courses, revenues, employment, assets, rounds of gold played, and turfgrass area maintained. The share of total statewide economic activity in each region is summarized in Figure 6.

The most prominent region was the Miami-Ft. Lauderdale economic area, which comprised 27 percent of the state's golf courses (363), generated 41 percent of total industry revenues (\$1.6Bn), employed 39 percent of the industry workforce (28,759 workers), comprised nearly 44 percent of capital assets (\$3Bn), golf play of 16.5 million rounds, and 48,450 acres of turfgrass maintained.

The Orlando area and the Ft. Myers-Cape Coral (Naples) economic areas vied closely for second and third place, depending on the indicator being examined. The Orlando area had nearly twice as many golf courses as Ft. Meyers (341 vs.173) but generated 20 percent less

revenue (\$610Mn vs \$738Mn). Orlando also employed more people (14,561 vs 10,144), but owned fewer assets (\$1.0Bn vs \$1.5Bn). Golfers in the Orlando area played three times as many rounds of golf (15.1Mn vs 5.8Mn) and had about twice the acreage (32,526 acres vs 18,755) of maintained turf. This pattern of substantially fewer courses, fewer rounds of golf played and less turf area, yet greater revenues and capital assets reflects the higher income levels associated with residents in Florida's southwest region compared to residents in the state's central region.

The Tampa-St. Petersburg-Clearwater economic area was the fourth most prominent region with 151 courses, \$400Mn in revenues, 8,400 employees, \$558Mn in assets, 8.2Mn rounds of golf played, and nearly 20,000 acres of maintained turf. Sarasota-Bradenton followed closely behind in the number of courses, but generated half the revenues (\$201Mn), employed half the people (4,652), owned 20 percent fewer capital assets, played 40 percent fewer golf rounds and maintained roughly 30 percent less turf area. Jacksonville was ranked next with 7 percent of the courses and a comparable share of the other economic indices. The Tallahassee area comprised 3 percent of courses, 2 percent of industry revenues, 3 percent of industry employment (1,838 jobs), and \$41Mn in assets. The Pensacola area had more golf courses, golf rounds and maintained turf area than Tallahassee, but less revenues, jobs and capital assets.

Figure 6. Share of economic impacts of golf courses in Florida regions, 2000 (see region definitions in Table 4).

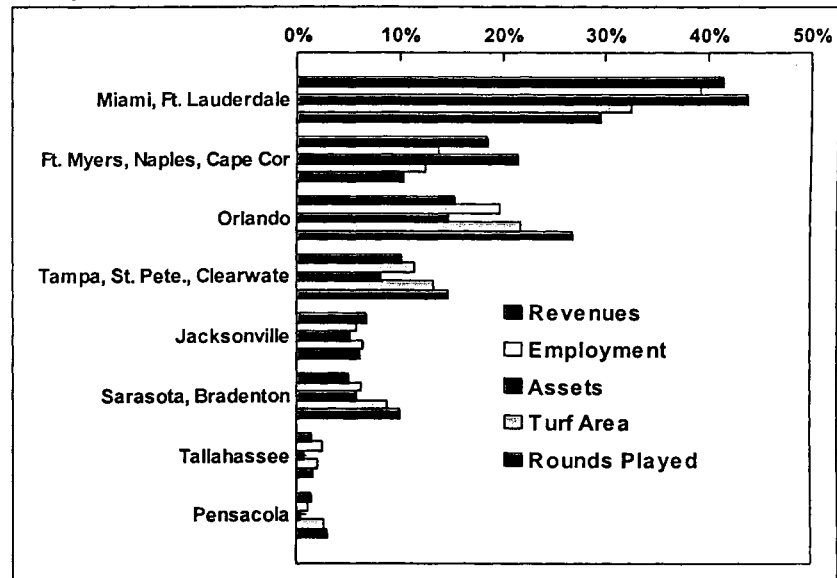


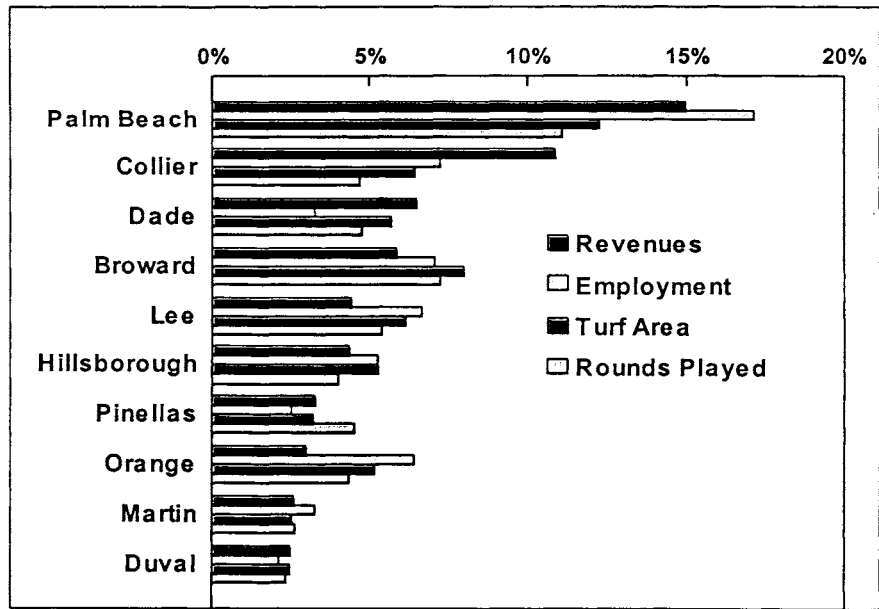
Table 23. Economic characteristics of golf courses in Florida regions, 2000.

Region*	Number Survey Respondents	Number Golf Courses	Revenues (\$ million)	Employment (jobs)	Assets (\$ million)	Golf Rounds Played (1000)	Turf Area Maintained (Acres)
Miami, Ft. Lauderdale	53	363	1,650	28,759	2,992	16,547	48,450
Ft. Myers, Cape Coral (Naples)	52	173	737	10,144	1,471	5,851	18,775
Orlando	47	341	611	14,561	1,011	15,121	32,526
Tampa, St. Pete., Clearwater	21	151	405	8,420	559	8,262	19,982
Sarasota, Bradenton	20	116	202	4,652	395	5,635	13,050
Jacksonville	13	94	272	4,302	361	3,422	9,675
Tallahassee	6	37	59	1,838	41	937	3,176
Pensacola	4	59	55	870	19	1,659	4,019

*Regions defined by the U.S. Department of Commerce, Bureau of Economic Analysis. See Table 4 for counties included.

Summary information is presented for Florida counties in Table 24 and is graphically depicted for the top ten counties in Figure 7. Palm Beach was the top-ranked county in Florida with \$633Mn in revenues, employment of 12,332 people, 18,120 acres of turf area, and golf play of 6.5 million rounds. Collier county had \$483Mn in revenues, 5,235 jobs, 9,550 acres of turf, and golf play of 2.7 million rounds. Miami-Dade County had \$288Mn in revenues, 2,364 jobs, 8,400 acres of turf, and golf play of 2.8 million rounds. Broward County accounted for \$261Mn in revenues, 5,075 employee positions, 11,847 acres of turf, and its members played 4.2

Figure 7. Share of economic impacts of golf courses in the top ten Florida counties, 2000



million rounds of golf. Lee County had \$196 Mn in revenues, 4,814 employees, 9,118 acres of turf, and golf play of 3.2 million rounds. A second tier of counties were Orange, Hillsborough, Pinellas, Martin and Duval, with revenues ranging from \$193Mn for Hillsborough to \$110Mn for Duval. Employment varied from 4,651 (Orange) to 1,536 (Duval), turf area ranged from 7,800 acres (Hillsborough) to 3,634 acres (Duval), and rounds played ranged from 2.7 million (Pinellas) to 1.4 million (Duval).

Table 24. Economic characteristics of Florida golf courses, by county, 2000.

County	Number Survey Respondents	Number of Golf Courses	Revenues (\$Mn)	Employment (jobs)	Assets (\$Mn)	Golf Rounds Played (1000)	Turf Area Maintained (acres)
Palm Beach	23	142	664	12,342	1,019	6,514	18,120
Collier	31	86	476	5,235	985	2,759	9,550
Dade	4	48	288	2,364	1,412	2,784	8,400
Broward	10	66	261	5,075	212	4,244	11,847
Indian River	6	27	211	3,335	387	749	3,672
Lee	21	87	196	4,814	360	3,165	9,118
Hillsborough	6	52	193	3,822	342	2,357	7,800
Pinellas	7	47	145	1,826	195	2,659	4,794
Orange	5	57	131	4,651	226	2,565	7,627
Martin	6	46	115	2,354	220	1,560	3,703
Duval	7	32	110	1,536	193	1,391	3,634
Sarasota	10	55	99	2,624	208	3,138	7,524
Volusia	12	37	93	1,989	148	1,957	4,320
Pasco	5	34	74	2,183	29	1,863	4,420
Brevard	5	31	73	1,717	112	1,897	3,658
Lake	4	38	58	599	127	1,321	3,563
Charlotte	4	27	54	1,040	72	1,181	2,903
Manatee	5	31	53	1,011	122	1,401	2,492
Seminole	3	17	50	1,417	135	782	1,513
Polk	5	64	45	858	108	2,035	2,445
St. Johns	3	13	40	706	20	442	1,335
St. Lucie	3	19	34	855	17	589	1,552
Citrus	6	18	24	447	16	700	1,305
Alachua	2	9	16	374	14	135	788
Leon	3	8	13	547	2	125	720
Hernando	3	18	10	822	29	1,242	3,090
Marion	4	29	9	631	na	645	2,755

Impact of Golf Courses on Real Estate Values

This section examines the influence of golf courses on local real estate values in the 18 Florida counties with the largest number of golf courses, which accounted for 71 percent of the golf courses in the state. The analysis compares assessed property values using information from county property appraisers compiled by the Florida Department of Revenue for 1999. The basic approach compares property values that are near a golf course with similar properties in the same county that are not near a golf course. Properties "near" golf courses were defined as those within the same one square mile section of the Public Land Survey System, and properties "not near" fell outside these sections. The information is broken down by county, value measure, and land use type. Land use categories include residential, commercial, industrial, agricultural, institutional, government, and utility. Value measures include assessed value, tax value, land value, sale price, and total value. Assessed value is the value put on the property by the respective county property appraisers in each county for purposes of property tax assessment. Tax value reflects the assessed value less exemptions, such as the homestead exemption on residential property. Land value is the assessed value on the land alone, exclusive of buildings or other

improvements. Total value is an estimate of market value of the property, including any improvements. Means were computed for each property type and differences in values between properties near vs. not-near golf courses were subjected to a t-test to determine statistical significance.

Differences in total value, by land use and county are summarized in Table 25. Positive numbers indicate that values were greater near golf courses, while negative values indicate that values were lower near golf courses. Values denoted by an asterisk indicate that the difference was statistically significant at the 95 percent level of confidence; in other words, a difference this large would occur by chance only 5 times in 100 ($p < 0.05$). In general, the number of positive values greatly exceeded negative values. In 12 of the 18 counties, there was a positive difference in total values that was statistically significant across all land use types, while in 3 counties there was negative difference, and in 3 counties there was no significant difference. To this extent, the influence of golf courses on property values appears to be favorable.

Table 25. Average difference in total values for properties with respect to Florida golf courses, by land use and county, 1999.

County	All Land Uses	Residential	Commercial	Industrial	Agricultural	Institutional	Government	Utility
dollars per parcel								
Broward	-34887*	-22859*	347000*	535956*	213582	208406	-116657	-91289*
Collier	47933*	14179*	323081*	781000	1067982*	0	0	5104
Dade	-3505	6884*	-82972	-173922*	-102558*	-394392*	-202385	423635
Duval	49957*	71280*	406477	-166525*	922976	46533	-727335*	-125124*
Escambia	-10677	-2721*	60884*	144433	31896*	-59576*	67056	9739*
Hillsborough	9002*	32113*	220082*	-87367	18447	-64422	-264544*	-228099*
Lake	4703*	9281*	180852*	211204	-18234*	194324	-102124*	-10196
Lee	48406*	52021*	199500*	11618	296024*	687000*	92300	3237
Manatee	-6624*	541	88582*	144120	418055*	379669*	50060	-177772
Martin	71906*	72006*	-144126*	173740	-103515*	130996	37471	-98842
Okaloosa	60171*	60961*	139581*	283630	8010	377384*	455000	129775
Orange	702*	46803*	13604	2260000*	236798	672000	-335379	-29352*
Palm Beach	37143*	39807*	609979*	593623*	36236	739000*	202000	-7089
Pasco	1051	7856*	-31662*	-98401*	39275	-41495	-10529	-126100
Pinellas	13886*	12774*	173383*	557106*	-38504	303853	274000	-45432*
Polk	5387*	-223	96933*	170697	65358	76714	57143	-151222*
Sarasota	32509*	38896*	-126957*	-41567	79062	42566	-819087*	7551
Volusia	-4823*	1363*	14276	-10553	70690*	373634	-104182*	18695

Asterisks denote a statistically significant difference ($p < .05$)

Analysis conducted by square mile section (public land survey system section, township, range).

Data source: Florida Department of Revenue, Tallahassee; and University of Florida, Florida Geographic Data Library.

Perhaps a better measure of property values is the difference in value of the land alone, exclusive of the value of improvements, as shown in Table 26. For residential properties, the positive difference in land values was greatest for Martin County, averaging \$46,537 per parcel, and there were also large positive differences for Duval County (\$20,633), Okaloosa, Orange, and Palm Beach counties. Counties with a significant negative residential land value associated with golf courses included Broward, Miami-Dade, Manatee Volusia and Pinellas counties. Commercial property land values were generally positively related to golf courses, with 13 of the 18 counties having statistically significant positive value. Collier County had the highest differential value

for commercial land uses associated with golf courses at \$184,244. However, commercial values were negatively associated in Sarasota and Miami-Dade counties. Collier County also had the largest positive difference for agriculture land (\$386,866). Orange County had the highest differential value for industrial properties near golf courses (\$722,000), more than twice that of the next closest county, Collier.

Table 26. Average difference in land values for properties with respect to Florida golf courses, by land use and county, 1999.

County	All Land Uses	Residential	Commercial	Industrial	Agricultural	Institutional	Government	Utility
Broward	-21920*	-15697*	158747*	164201*	72085	12531	-82893*	-50903*
Collier	10741*	-152	184244*	311227*	386866*	146882	481955*	2582
Dade	-9257*	-5634*	-59352*	-83142*	-15850*	-136943	17489	96604
Duval	14191*	20633*	112389*	-33129	69001	108371	-147265*	-25398*
Escambia	-7166	18	41980*	-5538	1674	58908*	-111605	6801*
Hillsborough	-1398	5657*	176598*	303	1672	-26520*	40607*	-100961*
Lake	-906	894	79818*	18871	-4270*	41371	-62463*	3746
Lee	6915*	7286*	117720*	21345	-1441	159277*	19236	-13524*
Manatee	-5620*	-3688*	44518*	15985*	145799	198239	-40046	-39591
Martin	46470*	46537*	-37602	37059	-51223*	75611	151841	-21978
Okaloosa	22673*	16399*	137362*	108512	11207	207511*	734000	48248
Orange	787	13305*	159702*	722000*	98635	232665	-67805	-12874*
Palm Beach	9990*	11532*	243066*	270690*	-43254*	383342*	38682	-12305
Pasco	-869*	1567*	-9926	-9099	3318	-14778	-26568*	-13367
Pinellas	-723	-2934*	78559*	262112*	-12957	9431	365708	-28888*
Polk	2773*	546*	65589*	30905*	4081	11464	-25821*	-62777*
Sarasota	5182*	4554*	-36812	-48136*	66630	72639	-379516*	13172
Volusia	-4989*	-2359*	1791	-15438	7416	118151	-37583*	5277

Asterisks denote a statistically significant difference ($p < .05$)

Analysis conducted by square mile section (public land survey system section, township, range).

Data source: Florida Department of Revenue, Tallahassee; and University of Florida, Florida Geographic Data Library.

Overall weighted average differences in all property value measures across the 18 counties evaluated, by land use type, are indicated in Table 27. Commercial, agricultural, industrial, institutional, and government land use types all showed an increase in total value associated with golf courses averaging \$10,942 per parcel, and ranging from nearly \$20,00 for residential properties, \$70,000 for commercial properties, \$114,000 for industrial, to nearly \$121,000 for agricultural land. Government and utility lands had a negative difference in total value. Differences in land values were positive but smaller, averaging \$464 across all property types, and \$2,871 for residential properties, but again were negative for utility properties. Assessed values showed a positive value averaging \$12,461 per parcel associated with golf courses, and tax values (net of exemptions) averaged \$17,981 greater. Sale prices had an average difference of about \$9,000 per parcel.

Table 27. Weighted average property values with respect to Florida golf courses, 1999.

Measure	Land Use	Near Golf Course (\$)	Not-Near Golf Course (\$)	Difference, Near Minus Not-Near (\$)
Total Value	All Land Uses	124,101	113,159	10,942
	Residential	104,559	84,965	19,594
	Commercial	526,518	456,838	69,681
	Industrial	686,775	572,396	114,379
	Agricultural	330,423	209,440	120,984
	Institutional	587,227	504,902	82,325
	Government	522,668	550,617	(27,949)
	Utility	36,816	71,075	(34,259)
Land Value	All Land Uses	38,398	37,935	464
	Residential	28,709	25,837	2,871
	Commercial	250,992	200,333	50,660
	Industrial	251,119	208,984	42,135
	Agricultural	56,992	34,626	22,366
	Institutional	177,916	137,378	40,538
	Government	278,535	234,695	43,839
	Utility	20,249	30,757	(10,507)
Assessed Value	All Land Uses	120,133	107,672	12,461
Tax Value		101,180	83,200	17,981
Sale Price (Most Recent)		144,986	135,590	9,396

Data source: Florida Department of Revenue, Tallahassee, and University of Florida, Florida Geographic Data Library.

A more geographically focused analysis was conducted to compare property values near golf courses with similar properties only in adjacent land sections for eight counties (Collier, Lee, Sarasota, Pinellas, Hillsborough, Lake, Orange, Duval). This was done to account for possible bias by eliminating from the analysis properties in rural areas that may have inherently lower values. The results of this analysis, summarized in Table 28, by county and land use, generally indicate somewhat lower differences in value. However, among the eight counties and 19 different land use/property value measures, there were 43 instances in which values associated with golf courses were significantly higher, while in 31 cases values were significantly lower. There were mixed results across all counties, land use types, and value measures. Counties with overall positive differences in value associated with golf courses included Lee, Duval, Sarasota, Pinellas and Lake, whereas Collier, Hillsborough and Orange counties had generally negative values. The largest positive difference in total value was in Lee County (\$31,426), while the largest negative difference was in Orange County (-\$49,176). These results confirm that the effect of golf courses on land values is rather localized, extending perhaps only a few miles.

Table 28. Difference in property tax values associated with golf courses, for adjacent land sections, by land use and Florida county, 1999

Land Use	Value Measure	Collier	Lee	Duval	Sarasota	Pinellas	Hillsborough	Lake	Orange
All	Assessed Value	-21813*	31913*	16648	21585*	14643*	-6165	3784	-47392*
	Tax Value	-18327*	31893*	31674*	22753*	15840*	3167	4911*	-33254*
	Land Value	-23666*	4790*	8179*	3168*	1283	-7901*	67	-17796*
	Sale Price	-2981	61923*	55031*	11238*	14467*	-19392	5563*	24645*
	Total Value	-30644*	31426*	19266	21293*	14453*	-8886*	3275	-49176*
Residential	Total Value	-31082*	35274*	45743*	30367*	13000*	13422*	8721*	25255*
	Land Value	-22865*	5711*	14319*	3630*	-980*	-877*	901	7251*
Commercial	Total Value	269171*	90421	132384	-191890*	111415	160692*	171831*	-659082*
	Land Value	144522*	59206*	27812	-65707*	43538*	166780*	72421*	-141234
Industrial	Total Value	874000*	3534	-577018*	-20644	387853*	-57556	214774	1050000
	Land Value	321961*	10005	-163380*	-32430	181091*	9761	18629	318000
Agricultural	Total Value	535000	178475	589000	27914	45357	-20472	-8822*	82851
	Land Value	348311	1343	60796	64451	-15291	303	-1512	67502
Institutional	Total Value	586000	602000*	-264935	-146013	274765	-68908	104547	540000
	Land Value	86038	121057*	-18953	67448	2371	-38317*	15028	166377
Government	Total Value	400000	-40201	-1860000	-639895*	369819	-371974*	-115376	-329931
	Land Value	-226250	41	-191303	-250717*	413729	-146612*	-3541	-53729
Utility	Total Value	-14564	-10774	-8715*	-14587	-33210*	-255005	-78904	-43132*
	Land Value	-4734	-22892*	-6022*	-4397	-20519*	-87625*	525	-16347*

Results represent difference in tax values for properties near golf courses minus not-near golf courses. Statistically significant differences noted by asterisk. Parcels "near golf course" are within the same square mile section (public land survey system section, township, range) and parcels "not near" golf course are within sections adjacent to sections with golf courses.

Data source: Florida Department of Revenue, Tallahassee; and University of Florida, Florida Geographic Data Library.

The differences in property values associated with golf courses were used to estimate the share of local property tax revenues that may be attributable to golf courses, as summarized in Table 29. First, the average difference in assessed value per parcel associated with golf courses was multiplied by the number of parcels near golf courses (within the same one square mile section), to determine the difference in total assessed value. This calculation was applied only for those counties in which the differences were determined to be statistically significant. The average *ad valorem* millage rate for each county was multiplied by the difference in assessed value to estimate the difference in total property taxes, which was then expressed as a share of the total county property tax collections for 1999. *Ad valorem* millage rates ranged from 11.9 to 20.7 (dollars per \$1000 assessed value). This analysis was conducted separately for all 18 of the counties evaluated, and for the 8 selected counties in which the analysis of properties "not-near" golf courses was restricted to adjacent land sections.

For all counties and properties, the greatest difference in assessed value (\$5.4Bn) occurred in Palm Beach County, followed by Collier (\$3.7Bn), Lee (\$2.6Bn) and Martin Counties (\$2.2Bn). Sarasota and Okaloosa Counties also had a difference in total assessed value exceeding \$1Bn, while Broward County had a decrease in assessed value of \$3.8Bn associated with golf courses. Applying the county-specific millage rates resulted in a difference in total property taxes of \$87Mn in Palm Beach County, \$44Mn in Collier, \$40Mn in Lee, \$33Mn in Martin, and minus \$66Mn in Broward. Among all 18 counties, there was a net increase in property taxes of \$214Mn. As a share of total county tax collections, this represented 8 percent in Palm Beach County, 15 percent in Collier, 10 percent in Lee, 22 percent in Martin, and 15 percent in Okaloosa County.

For the restricted analysis of properties in adjacent land sections, again, differences in total property tax collections were dramatically smaller, due to lower differences in average value per parcel. The difference in total property taxes was \$26Mn in Lee County, followed by \$17Mn in Pinellas, and \$11Mn in Sarasota, which

represented 3 to 7 percent of total county property tax collections. In Collier and Orange Counties there was a decrease in property taxes of \$18 and \$22 Mn, respectively.

Table 29. Difference in assessed value associated with golf courses and total property tax implications in selected Florida counties, 1999

County	Difference in Average Assessed Value Per Parcel (\$)	Number parcels near golf courses	Difference in Total Assessed Value (\$Mn)	Ad Valorem Millage Rate*	Difference in Total Property Taxes (\$Mn)	Total County Tax Collections (\$Mn)	Share of Total County Tax Collections (%)
Analysis includes all parcels outside sections with golf courses							
Palm Beach	38,442*	140,000	5,382	16.1742	87.0	1,091	8.0%
Collier	52,042*	70,753	3,682	11.8633	43.7	290	15.1%
Lee	48,778*	52,595	2,566	15.5825	40.0	383	10.4%
Martin	73,621*	28,672	2,111	15.7687	33.3	154	21.6%
Duval	46,276*	17,134	793	20.6781	16.4	560	2.9%
Sarasota	33,187*	34,935	1,159	14.1164	16.4	309	5.3%
Pinellas	14,302*	67,517	966	16.8242	16.2	612	2.7%
Okaloosa	61,588*	17,095	1,053	12.4824	13.1	87	15.1%
Hillsborough	12,730*	33,063	421	18.0022	7.6	629	1.2%
Polk	7,649*	36,168	277	17.4710	4.8	247	2.0%
Pasco	4,786*	26,159	125	18.7010	2.3	170	1.4%
Lake	5,897*	21,346	126	14.4595	1.8	97	1.9%
Volusia	(3,111)*	56,478	(176)	16.8160	(3.0)	253	-1.2%
Broward	(32,699)*	116,000	(3,791)	17.3663	(65.9)	1,229	-5.4%
Orange	2,718	32,426	na	14.3204	0.0	649	0.0%
Escambia	(8,556)	67,508	na	17.8170	0.0	130	0.0%
Dade	(1,004)	36,895	na	17.0100	0.0	1,561	0.0%
Manatee	(1,098)	31,447	na	17.1601	0.0	201	0.0%
Total		886,191	14,691		214	8,652	
Analysis includes only parcels in sections adjacent to sections with golf courses							
Lee	31,913*	52,595	1,679	15.583	26.2	383	6.8%
Pinellas	14,643*	67,517	989	16.824	16.6	612	2.7%
Sarasota	21,585*	34,935	754	14.116	10.6	309	3.4%
Collier	(21,813)*	70,753	(1,543)	11.863	(18.3)	290	-6.3%
Orange	(47,392)*	32,426	(1,537)	14.320	(22.0)	649	-3.4%
Duval	16,648	17,134	na	20.678	0.0	560	0.0%
Hillsborough	(6,165)	33,063	na	18.002	0.0	629	0.0%
Lake	3,784	21,346	na	14.460	0.0	97	0.0%
Total		329,769	341		13.1	3,528	

Statistically significant differences (p<.05) denoted by asterisks.

Analysis compares values parcels within the same square mile section (public land survey system section, township, range) as golf course, vs. not in same section.

* Data source: Florida Department of Revenue, Tallahassee

(<http://sun6.dms.state.fl.us/dor/property/99FLpropdata.pdf>)

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Appendix A: Florida Golf Course Survey Questionnaire

Sponsored by a consortium of industry organizations, including the *Florida Turfgrass Association, Florida Golf Alliance, Florida Golf Course Superintendents Association, Everglades Golf Course Superintendents Association, WCI Communities, Taylor Woodrow, and Bonita Bay Group.*

Dear Florida Golf Course Superintendent, Owner, or Manager,

This survey is being conducted by the University of Florida's Institute of Food & Agricultural Sciences, as part of a research project to document the economic impact of the Florida golf industry. The survey is being sent to all golf courses in the state of Florida. It is important that you provide information for your golf course, so that your type of facility is represented in this study.

All information obtained in this survey about your particular business will be kept strictly confidential; only averages or totals for all survey respondents will be disclosed. You do not have to answer any questions that you do not wish to. There is no compensation for participating in this survey, however, you may receive a copy of the final project report if you wish. All questions in this survey pertain to the most recent fiscal year (2000). If you have more than one golf course under your management, please request an additional survey booklet or copy this form and fill-out a separate survey for each golf course.

Please return the completed questionnaire to the investigators in the postage-paid, return addressed envelope provided. If you have any questions about this survey, you may contact the investigators (see below). For questions about human subjects research approvals for this project contact the University of Florida Institutional Review Board (PO Box 112250, Gainesville FL 32611-2250). Thank you for your cooperation!

Sincerely, Alan W. Hodges and John J. Haydu, University of Florida,
PO Box 110240, Gainesville, FL 32611, tel 352-392-1881 x312,
AWHodges@ufl.edu. Survey revised October 4, 2001

Company and Respondent Information

Name and position of person(s) filling out this form. Please sign below that you have read the informed consent statement above, and you agree to participate in the survey. Note: The Revenues, Expenditures and Contributions, and Assets/Investments sections should be filled-out by the comptroller or financial officer.

<u>Name and Signature</u>	<u>Position</u>

Name of golf course: _____

Golf course owner: _____

Street address: _____

City, Zip code: _____

Florida county: _____

Telephone: _____

_____ Check here if you wish to receive a summary report on the survey results

Golf Course Type

Type of golf course (check any that apply):

- Private Semi-Private
 Resort Public
 Military Residential development
 Municipal
 Other (specify) _____

Total number of golf holes at this course (9, 18, 27, 36, etc): _____

Par for the course (number strokes): _____

Year that this golf course was established: _____

If this course is part of a residential development, how many units are in the development, and what is the average value per unit?

Number of units: _____
Average value per unit (\$1,000): _____

Golf Play and Events

Total number of golf rounds played on this course last year (may round number to nearest 1,000): _____

Geographic origin of golfers playing last year (percent of total play):

- _____ % International visitors
_____ % U S residents from outside Florida
_____ % Non-local Florida residents
_____ % Local (county) Florida residents

Seasonal distribution of golf play last year (percent of total golf play):

- _____ % January-April:
_____ % May-September:
_____ % October-December:

Number of golf tournaments hosted last year: _____

Total number of spectators attending tournament event(s) last year:

Golf Course Grounds Management

Area used by the golf course last year

Total area of golf course: _____ acres
Turfgrass area maintained: _____ acres
Area irrigated: _____ acres

Turfgrass varieties used (percent of total turfgrass area maintained):

- _____ % St. Augustine
_____ % Bahia
_____ % Centipede
_____ % Bermudagrass
_____ % Zoysiagrass
_____ % Mixed/other grasses

Specify other type(s) used _____

Amount of water used for golf course irrigation last year:
_____ million gallons

Percent of total water used for irrigation, by source:

- _____ % Municipal
_____ % Recycled
_____ % Wells
_____ % Surface Water
_____ % Other Sources (desal, ASR, etc.)

Compared to five years ago, has your irrigation water use per acre increased, decreased or remained the same? (check appropriate response):

___ Increased ___ Decreased ___ Remained same
If increased or decreased, by what percent?: _____ %

Compared to five years ago, has your fertilizer use per acre increased, decreased, or remained the same? (check appropriate response):

___ Increased ___ Decreased ___ Remained same
If increased or decreased, by what percent? _____ %

Does this golf course have an automated irrigation control system?

___ Yes ___ No

If yes, was the automated system installed originally or as a retrofit?

___ New construction ___ Retrofit

Employment

Number of full-time and part-time or seasonal employees last year, including management and administrative staff, for the golf course, and for the clubhouse and other facilities:

	<u>Full-time</u>	<u>Part-time/ seasonal</u>
Golf course maintenance	_____	_____
Clubhouse/other facilities	_____	_____

Note: The remainder of the survey should be filled-out by the comptroller or financial officer.

Revenues

Total revenues last year, including golf play, membership fees, dues, and all other business activities (check appropriate range or give actual amount):

- | | |
|--------------------------------|--------------------------------|
| ___ Less than \$500,000 | ___ \$500,000 to \$999,999 |
| ___ \$1.00 to \$1.99 million | ___ \$2.00 to \$2.99 million |
| ___ \$3.00 to \$3.99 million | ___ \$4.00 to \$4.99 million |
| ___ \$5.00 to \$7.49 million | ___ \$7.50 to \$9.99 million |
| ___ \$10.00 to \$14.99 million | ___ \$15.00 to \$19.99 million |
| ___ \$20.00 to \$24.99 million | ___ \$25.00 million or greater |

Actual amount: \$ _____

Percent of total revenues obtained from each of the following business activities last year

- _____ % Golf course playing fees (greens, carts, dues)
- _____ % Golf course membership and initiation fees
- _____ % Retail sales (pro shop, gift shop)
- _____ % Restaurant, food and beverage services
- _____ % Lodging
- _____ % Other (specify activities included) _____

Expenditures and Contributions

Total costs of operation last year for all golf course and related business activities:

\$ _____

Percentage of total expenses, by category

- _____ % Golf course maintenance
- _____ % Clubhouse
- _____ % Golf operations
- _____ % Food & beverage service
- _____ % Tennis/fitness and other recreation services
- _____ % Capital (purchases, interest, depreciation)
- _____ % Administrative overhead
- _____ % Other (specify activities included) _____

Percentage of total expenses for goods purchased from vendors outside of Florida last year (percent of total): _____ %

Value of charitable contributions last year

- Cash contributions _____ \$
- In-kind contributions, including golf rounds _____ \$

Assets/Investment

Current value of total assets owned at the end of last year (Dec. 2000) and for the following categories:

- Land: _____ (\$)
- Vehicles and equipment: _____ (\$)
- Irrigation systems: _____ (\$)
- Golf-owned buildings and installations: _____ (\$)
- Total: _____ (\$)