II. The Impact of Golf and Why Turfgrass Research is Needed

Golf is played on grass. As the game of golf has grown, so has the knowledge on how to produce, establish, and maintain the turfgrasses used for golf course playing surfaces. The growth in the number of golfers and the number of rounds played has required construction of more golf courses able to withstand an increased number of rounds. At the same time, golf courses have experienced increased maintenance costs and tougher government regulation with regard to water use and environmental issues.

The interaction of the increase in the game's popularity with higher maintenance costs and government regulation created several problems needing solutions. Turfgrass research was needed to solve these problems; however, significant funding for this research was not available to the university researchers able to address these problems. The following sections document the increased popularity of golf, its economic impact, environmental issues golf courses face, and why the USGA got involved in turfgrass research.

Golfers and Golf Courses

The popularity of golf has increased steadily in the United States since 1946. In the short span from 1985 to 1990, the number of golfers increased from 17 to 25 million (Table 1). In this same period, the number of rounds of golf played annually increased by 17.6 percent. Between 1968 and 1990, the number of golf facilities increased from 9,600 to 12,800 (Table 2) and the National Golf Foundation estimates that over 12 percent of the population in the United States over the age of 12 plays golf (Table 3).

Most golf courses and the golfers using these facilities are concentrated in the major urban centers of the United States. The expansion of golf in regions with densely populated urban areas has increased concern about land use, water

Table 1. Increase in the number of golfers and rounds played in the United States from 1958 to 1990.

Total	Year					
number	1958	1963	1968	1985	1990	
			in million	s		
Golfers	4.0	7.3	11.3	17.5	25.0	
Rounds			194	415	488	

From: Nutter and Watson (1969) and National Golf Foundation (1989, 1991).

resources, and environmental quality. The concentration of golf courses in areas requiring extensive water resources and expensive management practices has led to the need for increased funding of research to develop methods that reduce the resources needed to manage golf course facilities.

According to National Golf Foundation estimates, there are over 13,951 golf courses in the United States. Assuming an average size of 124 to 180 acres per facility, there are from 1.7 to 2.5 million acres of land dedicated to golf facilities. This estimate includes all areas of golf facilities, such as clubhouse and parking lots, that are not covered with turfgrass. The actual managed turfgrass acreage on golf courses is less than the total area of the facility reported by the National Golf Foundation.

The average dimensions of greens, surrounds,

Table 2. Increase in the total number of golf facilities in the United States from 1946 to 1990.

			Year		
Item	1946	1958	1963	1968	1990
	-	in	thousan	ds	
Number of facilities	4.8	5.7	7.5	9.6	12.8
Estimated acreage			300	417	533°

From: Nutter and Watson (1969), Heuber (1984), National Golf Foundation (1991) and *Estimate from Table 5.

tees, fairways, and rough vary among regulation, executive, and Par-3 golf courses. Golf course acreage in the United States (Table 5) was estimated on the basis of median turfgrass area dimensions (Table 4) and estimates of the number of golf holes by state (Table 3). Approximately 1.3 million acres of land are managed for golf course turfgrass in the United States.

The construction and maintenance intensity of golf course turfgrass areas decreases in the following order: putting greens, tees, surrounds, fairways, and roughs. The total annual amount used and number of applications for fertilizers and pesticides decreases from the greens to the rough. The portion of the golf course receiving

the intensive management of green and tee areas is relatively small (6%) compared to the total acreage of turfgrass on the golf course.

Economic Impact of Golf

Table 3. Distribution of golf courses, number of rounds played and golfers by State in 1990.

		Annual T	otal	% Total
State	Courses	Rounds	Golfers*	Population
31010	OSAROOD		ousands	ropulation
AL	211	5,254	264	7.9
AZ	236	8,736	416	13.7
AR	151	4,404	109	5.6
CA	853	56,556	2,842	11.8
co	187	7,567	409	14.5
CT	168	7,823	354	12.8
DE	28	832	52	9.3
DC	10	459	23	4.0
FL	1,011	44,518	1,374	12.3
GA	324	11,577	510	9.5
ID	82	1,963	130	17.0
ĪĹ	606	22,950	1,530	16.0
IN	387	13,355	639	
IA	367	8,235	394	13.8
KS	243	5,270	288	17.4
KY	228	8,280	345	13.8
LA	148	5,105		11.1
ME	121	2,038	201 109	5.6
MD	146	7,134	392	10.8
MA	329	12,960	720	10.0
MI	749	22,532		14.3
MN	394	11,123	1,273	16.9
MS	145	3,047	727	21.2
MO	280	8,283	110	5.3
MT	75	1,047	499	11.7
NE	173	3,899	88 1 94	13.6
NV	55	2,348		15.0
NH	99	1,629	118 90	13.0
NJ	263	11,680	730	9.5
NM	82	3,779	171	11.0
NY	781	25,631		13.6
NC	474	12,119	1,643 609	10.9
ND	103	1,634	99	11.0
OH	704	25,713	1,375	19.3
OK	172	6,528	257	18.7
OR	159	4,452	291	9.6
PA	643	18,850	1,071	15.3
RI	48	1,962	93	10.8
SC	316	9,222	290	10.9
SD	110	2,349	250 77	10.0
TN	234	7,482	358	13.0
TX	756	32,036	1,497	8.5
UT	94	3,257	267	10.5
VT	60	720	207 55	21.0
VA	256	8,348	469	11.6
WA	240	6,834	510	9.4
WV	109	3,213	135	13.4
WI	417	11,766	769	8.8
WY	49	1,668	769 67	19.3
Total	13,876	488,167	25,033	17.4
From:	National Gol	f Foundation (22,033	12.7

From: National Golf Foundation (1991); *Age > 12; *Average.

The economic impact of the game of golf is difficult to estimate; however, more attention is being paid to the impact of "golfing dollars" as more regions of the United States become highly urbanized or develop as tourist destinations. The National Golf Foundation recently estimated that there are approximately 12 million "Core Golfers", 14 million "Occasional Golfers" and 2 million "Junior Golfers" in the United States. A core

Table 4. Range and median dimensions of turfgrass areas on golf courses in the United States.

		Median dimension			
Area	Range*	Regulation	Executive ^b	Par-3 ^b	
	***************************************	acres			
Greens	0.027 - 0.618 0.124 - 0.195 ^d	0.128°	0.111	0.086	
Surrounds	0.163 - 0.272	0.205*	0.148	0.148	
Tee	0.025 - 0.166	0.049°	0.049	0.049	
Fairways	1.656 - 3.29e	2.800*	1.977	1.648	
Rough	2.197 - 4.942	3.568*	2.224	2.224	

- * Beard (1982)
- Estimates only
- ^c National Golf Foundation (1985)
- d Most popular range
- e Range for 18-hole courses only
- ^f Total dimension includes non-turfgrass facilities

golfer is defined as someone who is at least 18 years of age and plays eight or more rounds of golf per year. An occasional golfer is someone of the same age who plays fewer than eight rounds annually.

The average annual expenditure of core golfers for golf equipment and facility fees is \$3,246 compared to \$1,087 for occasional golfers (Table 6). These estimated annual expenditures for core and occasional golfers translate to an economic impact over \$54 billion across the United States. The amount spent on green and guest fees at public and private courses, respectively, would comprise over \$6.6 billion of the total amount spent by core and occasional golfers. The National Golf Foundation also estimated that during 1985 to 1990, the cost of an 18-hole weekday round of golf at a public facility increased 42 percent compared to a 23 percent growth in the Consumer Price Index experienced in the United States.

The maintenance of golf courses continues to make a major economic impact and has experienced rapid increases during the last twenty years. During the 1970's, the cost of energy rose substantially and caused an inflationary increase in the cost of living. The cost of mantaining golf courses was not immune to increasing energy costs which resulted in higher prices for the fuel, fertilizers and pesticides manufactured by the petroleum and chemical industries (Figure 1). The increased cost of living led to higher labor costs, which put additional strain on golf course

Table 5. Estimate of turfgrass acreage by golf courses by State*.

	Tota	l Holes		Estimated Acreage of Turfgrass in hectares			Estimated Acreage of Turfgrass in hectares		
State -	Reg.	Exec.	Par-3	Green	Surrounds	Tec	Fairway	Rough	Total
		mber		**		******	- acres		
AL	2,943	·54	54	389	619	151	8,435	10,741	20,335
AK	90	9	0	13	20	5	270	341	649
ΑZ	3,006	621	117	466	726	185	9,836	12,367	23,580
AR	1,962	27	27	257	410	100	5,591	7,121	13,479
CA	10,710	1,341	891	1,602	2,528	639	34,104	43,178	82,051
co	2,475	126	135	344	546	135	7,401	9,412	17,838
CT	2,412	63	81	324	516	126	7,011	8,926	16,903
DE	432	18	18	59	94	23	1,275	1,621	3,072
DC	126	27	0	19	30	8	406	510	973
FL	13,851	2,016	747	2,068	3,249	821	43,994	55,567	105,699
GA	4,626	63	90	609	971	236	13,224	16,846	31,886
HI	1,026	27	36	138	220	54	2,985	3,801	7,198
ID	1,035	36	45	141	225	55	3,043	3,873	7,337
IL	8,019	387	288	1,098	1,745	430	23,690	30,114	57,077
IN	5,148	189	360	714	1,137	281	15,380	19,590	37,102
IA	3,843	117	99	515	820	201	11,154	14,193	26,883
KS	2,736	81	45	364	581	141	7,894	10,043	19,023
KY	2,826	99	135	386	615	151	8,330	10,604	20,086
LA	2,043	9	18	265	423	102	5,742	8,634	15,166
ME	1,332	36	81	182	292	72	3,934	5,013	9,493
MD	2,169	90	54	293	467	114	6,339	8,059	15,272
MA	4,293	126	342	595	949	235	12,832	16,359	30,970
MI	10,098	522	396	1,390	2,207	544	29,955	38,072	72,168
MN	4,212	450	351	622	983	248	13,260	16,810	31,923
MS	1,881	0	54	246	393	96	5,355	6,832	12,922
MO	3,456	63	117	461	736	180	9,993	12,732	24,102
MT	864	0	45	115	183	45	2,493	3,183	6,019
NE	1,710	144	117	246	390	97	5,265	6,682	12,680
NV	801	45	9	109	173	42	2,346	2,978	5,648
NH	1,089	45	126	156	250	62	3,345	4,266	8,079
NJ	3,834	162	171	525	835	206	11,336	14,421	27,323
NM	1,053	27	36	141	225	55	3,061	3,897	7,379
NY	10,170	576	468	1,411	2,241	554	30,382	38,610	73,198
NC	7,326	144	189	974	1,552	379	21,106	26,881	50,892
ND	981	45	27	133	213	52	2,880	3,661	6,939
OH	9,702	567	405	1,345	2,135	528	28,950	36,780	69,738
OK	2,268	27	27	297	474	115	6,448	8,213	15,547
OR	1,764	234	99	261	410	104	5,564	7,035	13,374
PA	8,910	315	477	1,221	1,945	479	26,354	33,553	63,552
RI	675	0	27	89	143	35	1,934	2,469	4,670
SC	4,833	63	171	643	1,025	250	13,937	17,765	33,620
SD	1,089	36	18	146	232	57	3,150	4,006	7,591
TN	3,312	36	54	434	692	168	9,433	12,018	22,745
TX	10,350	162	297	1,374	2,192	534	29,786	37,951	71,837
UT	1,152	54	81	161	257	64	3,465	4,411	8,358
VT	765	27	18	103	163	40	2,225	2,830	5,361
VA	3,807	72	99	506	806	197	10,964	13,964	26,437
WA	2,871	198	234	411	652	163	8,815	11,205	21,246
wv	1,341	45	99	186	297	73	4,006	5,105	9,667
WI	5,121	252	288	711	1,129	280	15,310	19,473	36,903
WY	630	9	0	82	131	32	1,782	2,268	4,295
Total	183,168	9,882	8,163	25,340	40,247	9,944	545,770	694,984	1,316,285

^{*} Estimates of acreage based on the median dimensions of turfgrass areas on golf courses (Table 4) and the distribution of the types of golf course holes by state (Table 3).

The distribution of golf course holes (Table 3) is available from estimates of the number of regulation (Reg.), executive (Exec.), and Par-3 holes (National Golf Foundation 1991)

Table 6. Annual expenditures: Core vs. Occasional Golfers.

	Average I	xpenditure*	
Item	Core	Occasional	
Clubs			
Woods	\$141.10	\$101.05	
Irons	225.22	124.77	
Putters	46.20	41.34	
Other Equipment			
Bags	68.77	60.46	
Balls	67.25	36.62	
Gloves	30.84	12.09	
Pull Carts	46.00	42.55	
Shoes	60.83	50.27	
Umbrellas	23.60	17.07	
Fees			
Green Fees/Public Courses	243.17	97.52	
Guest Fees/Private Courses	130.17	54.16	
Cart Rental	206.69	57.06	
Pull Cart Rental	22.42	8.53	
Caddy Fees	228.45	27.54	
Initiation Fees	908.26	51.78	
Annual Dues	797.59	304.20	
Totals	\$3,246.56	\$1,087.01	

National Golf Association Report (1992) of expenditures made by core and occasional golfers in 1989.

maintenance budgets.

In 1992, average payroll climbed to \$15,888 per hole while payroll taxes and benefits increased to \$3,610 per hole. Rising personnel costs, which totaled 63 cents of every maintenance dollar, pushed the nationwide maintenance cost per golf hole to \$30,870. This increase continues a 20-year trend during which maintenance costs have risen 500 percent.

An estimate of the economic impact of golf

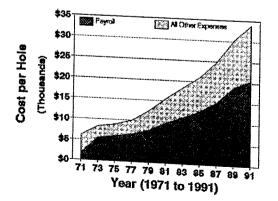


Figure 1. Increase in golf course maintenance costs from 1971 to 1991.

course maintenance for the United States is \$6.2 billion. This figure is the total number of regulation, executive, and par-3 golf holes (201,213) and the average maintenance cost per hole (\$30,870). Even though this figure approximates the amount spent on golf course maintenance, it closely corresponds with the estimated \$6.6 billion spent annually by core and occasional golfers on green and guest fees. A 1982 estimate of turfgrass maintenance costs on golf courses, prepared by the University of California, suggested an annual expense of \$1.5 billion as compared to a 1985 NGF/GCSAA estimate of \$1.7 billion.

Table 7. Golf course maintenance costs by region.

Item	East	South	Mid-west	West	Average
Payroll	14,959	15,291	12,303	18,781	15,888
Taxes Benefits	3,123	2,919	2,544	5,396	3,610
Supplies	5,761	6,097	5,423	6,043	5,904
Repairs	2,351	2,872	1,742	3,303	2,695
Other	1,797	3,142	1,518	4,422	2,733
Total	27,991	30,321	23,529	37,945	30,870

Source: Pannell Kerr Forster (1992)

Golf and the Environment

The establishment and culture of turfgrasses used on golf courses has become a well accepted practice in the United States. In addition to the enjoyment golf courses provide, they also serve as important soil and water conservation features in both urban and rural areas. The maintenance of quality turfgrass at the levels currently demanded by the public, however, requires intensive management of water, nutrients, and pests. As a result, potential environmental effects of these practices have become a public concern.

The major environmental concern from the 1930's through the 1950's involved soil and water conservation on agricultural land. The use of forage grasses and maintenance of turfgrass was one of the major soil and water conservation practices developed by the United States Department of Agriculture Soil Conservation Service to reduce soil erosion. In many urban areas, golf courses and other large turfgrass areas were incorporated into storm water management plans to stabilize the soil in areas prone to flooding.

By the 1960's, the primary environmental issue

focused on the pollution of water resources due to contamination by soil, nutrients, and chlorinated organic pesticides. Agricultural, forestry and urban areas were identified as potential sources of chemical and sediment losses. Eutrophication of surface water, sedimentation of streams and lakes, introduction of persistent pesticides in the global food chain, and identification of high levels of nitrates in drinking water became important environmental issues.

In the 1970's, the focus of environmental research shifted from the identification of pollution problems to the development of management practices to mitigate nonpoint pollution from agricultural and urban areas. In addition to concerns about water quality, the increased use of water resources by agriculture, industry, and municipalities has led to shortages in many areas. In arid regions of the United States and in regions with periodic drought conditions, allocation of water for turfgrass irrigation has been a controversial policy issue.

Although consumption of water for turfgrass is relatively small compared to agricultural and industrial use, irrigation of golf facilities is highly visible and has been considered a luxury use by certain sectors of the public. The development of cultural practices to conserve water used in the management of golf courses, even in humid regions, became a critical research need during this period and was not being adequately addressed.

The USGA Decides to Become More Involved in Turfgrass Research

The original concept of the need for a national turfgrass research program to address the escalating maintenance costs and water use of golf courses was developed by A. M. Radko of the USGA Green Section and Dr. James B. Beard of Texas A&M University. The primary purpose of the program was to develop minimal maintenance turfgrasses to meet the future needs of golf. Emphasis was placed on the development of water conserving, salt-tolerant, cold and heat-tolerant, disease and insect resistant grasses having low nutritional requirements.

Never before had such an intensive and extensive turfgrass research program been undertaken. In January 1982, William Bengeyfield, national director of the Green Section, chaired the newly formed Turfgrass Research Committee to help guide the USGA's multi-million dollar

turfgrass research program for a span of ten years or more (Table 8). "We believe this will develop into one of our most important undertakings," said Harry W. Easterly, Jr., who, in 1982, was the Senior Executive Director of the USGA. "In time, the research program developed by this Committee could lead to major breakthroughs in all phases of turfgrass maintenance ..." The Committee's entire purpose was to establish a sound program, closely follow its progress, and achieve the proposed objectives.

The Committee has successfully brought a greater sense of direction, cost effectiveness, and concentration to vital areas of turfgrass research

Table 8. Research Committee Members

Table 8. Research Comi	nittee Members
Raymond Anderson	Howard Kaerwer
1990 - 1992	1987 - 1992
George M. Bard	Dr. Michael P. Kenna
1983 - 1989	1988 - 1992
William H. Bengeyfield	Dean Knuth
1983 - 1989	1990 - 1992
Dr. Bruce Branham	Ann Leslie
1991	1990 - 1992
Thomas Burton	Dr. Charles F. Mancino
1987 - 1992	1986 - 1987
Dr. Nick Christians	James B. Moncrief
1989 - 1990	1983 - 1986
Dr. Karl Danneberger	Charles Passios
1985	1991 - 1992
Ron Dodson	Dr. Charles Peacock
1990 - 1992	1992
Marion B. Farmer	James G. Prusa
1986	1983 - 1986
Gerald Faubel	Dr. Paul E. Rieke
1985 - 1989	1983- 1992
David B. Fay	William R. Roberts
1988 - 1992	1989 - 1990
Dr. Marvin H. Ferguson	Charles W. Smith
1983-1984	1983 - 1989
Dr. Victor Gibeault	James T. Snow
1985 - 1992	1990 - 1992
Frank Hannigan	F. Morgan Taylor
1985 - 1987	1987 - 1989
Dr. Peter Hayes	Jaime Ortiz-Patino
1988 - 1992	1991 -1992
Rees Jones	Dr. James R. Watson
1990 - 1992	1983 - 1992

for golf. The Committee successfully established specific agreements, reduced indirect costs to 16 percent, monitored expenditures, set expectations, ensured proper progress and was accountable to those providing funds.

In the spring of 1982, turfgrass researchers throughout the nation were invited to express their views and interests in research needs. Gradually, a long range plan evolved from the Committee's work, objectives were established and guidelines were carefully drawn. The Committee also initiated plans for developing a computerized reference source for published turfgrass literature, and for improving germplasm for future turfgrass breeding projects. The computerized reference source has become the Turfgrass Information File, or TGIF, located at Michigan State University. The effort to support germplasm development led to successful expeditions to Asia, South Africa, and the United Kingdom, and to cooperative research in New Zealand.

Fund Raising

USGA Fund-Raising Campaign, inaugurated in 1983 to raise funds for research, moved into full swing through the efforts of B. P. "Bobby" Russell, Chairman of the USGA Capital Campaign, and Donald L. Spencer, USGA Foundation and Membership. After reading the article, "The Search for Better Grasses" by the late Dr. Victor B. Youngner, Bobby Russell wrote a letter to Harry Easterly and suggested a simple plan that could raise significant funding for turfgrass research. The idea was to have all golfers at USGA Member Clubs contribute \$1 a year for each year of the ten-year USGA Turfgrass Research Program. Baltusrol Golf Club, where Bobby Russell is a member, passed a resolution endorsing the concept and committed \$1,000 per year for the Turfgrass Research Program.

Golf course superintendents, green committee chairman and the boards of directors for clubs across the United States were asked to solicit their clubs to contribute to the USGA Turfgrass Research program following the example of Bobby Russell and Baltusrol Golf Club. A special plea was directed toward golf course superintendents to help "get the ball rolling."

The Golf Course Superintendents Association of America, through Research Committee member Jim Prusa, then Assistant Executive Director of GCSAA, helped the fund raising effort and initiated a spirit of cooperation between the USGA

and GCSAA to accelerate the turfgrass research efforts. The cooperative effort was based on the premise that for any business, including the maintenance of golf courses, to be successful, individuals and organizations must believe in something larger than themselves. A common bond grew between the GCSAA and USGA Green Section and it was agreed to work together to support a national turfgrass program.

Over the last ten years, the "Honor Roll" of donors to the USGA Capital Campaign has listed many contributions made through the direct efforts of the club's golf course superintendent. The response of USGA Member Club officials, the GCSAA and, most important, individual golfers and golf course superintendents, demonstrated the widespread support of a national turfgrass research program to provide minimal maintenance turfgrasses. Because of the support from these organizations and individuals, the USGA/GCSAA Turfgrass Research Program has been successful.

Table 9. The Honor Roll - List of Donors to the USGA/GCSAA Turfgrass Research Program

Memorial Turfgrass Deners

Robert L. Baker, In Memory of O. Sproule Baker & Family
The Ohio Valley Senior Golf Assn., In Memory of J. Earle Nelson
Alexander M. Radko, In Memory of Dr. Marvin H. Fergusen
Charles Rainwater, Jr., Brown
Rainwater, For the Charles V.
Rainwater Memorial Endowment
Russell Scarpelli, In Memory of James
W. Kirwan

The Toro Company, In Memory of Dr. Marvin H. Fergusen Dr. James R. Watson, In Memory of Dr. Marvin H. Fergusen

Foundation Turigrass Denors

American Express Foundation Frank E. & Seba B. Payne Foundation, Chicago, IL The William Penn Foundation

Corporation Turfgrass Donors

Arthur Hills & Associates Asahi Broadcasting Corp., Japan Bentgrass Research, Inc., TX Boulders Carefree Partners, AZ City of Tucson Parks & Recreation Department, AZ Draft Company Ford Motor Company Garden Services, Inc., GA General Cinema Theaters Hilton Head Company, Inc., SC Ico, Inc., TX John Knorr Associates, PA Lofts Seed, Inc., NJ Mobil Oil Corp, NY Piney Coking Coal Land Company Princeville Development Corp., HI Royal Lawns of Monmouth, NJ Satsuma Landscape & Maintenance Sentry Services, Inc. Toro Company, MN Xerox Corp., CT

Association Turigrass Donors

Alabama Golf Assn., AL Alabama Seniors Golf Assn. California Golf Writers Assn. Connecticut State Golf Assn., CT Club Managers Assn., SC Golf Course Supt. of America GCSA of Oregon GCSA of New Jersey, NJ GCSA of South Dakota Hoosier Turfgrass Assn., IN Houston Golf Assn. Indian Hills Senior Men's Golf Assn. Maine State Golf Assn., ME Minnesota Golf Course Supt. Assn. National Golf Fund, Inc., FL Southern Golf Assn., AL Western NY GCSA, NY West Virginia Golf Supt. Wy-Mont Golf Course Supt. Assn., MT

Clubs in Which Individuals Have Made Donations

Abenaqui Country Club, NH Alpine Country Club, NJ Golf Club of Avon, CT Birnam Wood Golf Club, CA Black Hall Club, CT Blind Brook Club, NY Brae Burn Country Club, MA Brentwood Country Club, CA Canoe Brook Country Club, NJ Carmel Valley Golf and Country Club, CA Cohasset Golf Club, MA Concord Country Club, MA Creek Club, The, NY Dallas Athletic Club, TX Dallas Country Club, TX Deal Golf & Country Club, NJ Diablo Country Club, CA Echo Lake Country Club, NJ Essex Country Club, MA Fairmount Country Club, NJ Fairview Country Club, CT Country Club of Farmington, The, CT Gaston Country Club, NC Glen Ridge Country Club, NJ Grandfather Golf & Country Club, NC Greenwich Country Club, CT Hartford Golf Club, CT Huntingdon Valley Country Club, PA Inglewood Country Club, WA Kent Country Club, MI Kittansett Club, The, MA Knollwood Club, IL Lochinvar Golf Club, TX Los Angeles Country Club, The, CA Manasquan River Golf Club, NJ Manufacturers Golf & Country Club, PA Merion Golf Club, PA Minikahda Country Club, MN Montclair Golf Club, NJ Moraga Valley Country Club, CA Myopia Hunt Club, MA Navesink Country Club, NJ New Orleans Country Club, LA Northland Country Club, MN Oak Park Country Club, IL Peachtree Golf Club, GA Pepper Pike Club, OH Pine Valley Golf Club, NJ Plainfield Country Club, NJ Prairie Dunes Country Club, KS Presidio Army Golf Club, CA Rehoboth Beach Country Club, DE Riverton Country Club, NJ Salem Country Club, MA Silverado Country Club, CA Spokane Country Club, WA Spring Brook Country Club, NJ Spring Lake Golf Club, NJ St. Andrews Country Club, IL St. Andrew's Golf Club, NY St. Louis Country Club, MO Tucson Country Club, AZ Vintage Club, The, CA Waterbury, Country Club of, CT Wellesley Country Club, MA Westmoreland Country Club, IL Westwood Country Club, MO Wilmington Country Club, DE Wilshire Country Club, The, CA Woodbury Country Club, NJ Woodhill Country Club, MN Worcester Country Club, MA

Club Deners

Alamance Country Club, NC Alcoma Golf Club, PA Algonquin Golf Club, MO American Golfer's Club Andover Country Club, MA Annandale Golf Club, CA Apawamis Club, NY Arcola Country Club, NJ Arizona Country Club, AZ Aspetuck Valley Country Club, CT Atlanta Athletic Club, GA Atlantic City Country Club, NJ Augusta National Golf Club, GA Bakersfield Country Club, CA Baltusrol Golf Club, NJ Bangor Municipal Golf Course, ME Battleground Country Club Bay Hill Club, Inc, The Baywood Country Club, TX Bayou Desiard Country Club, LA Bedens Brook Club, NJ Bedford Golf & Tennis Club, NY Bel-Air Country Club, CA Bellerive Country Club, MO Belmont Country Club, MA Belmont Hills Country Club, OH Big Foot Country Club, WI Bend Golf & Country Club, OR Bernardo Heights Country Club Biltmore Country Club, IL Biltmore Forest Country Club, NC Birmingham Country Club, MI Blackhawk Country Club, WI Blacksburg Women's Golf Club, VA Bloomfield Hills Country Club, MI Bloomington Country Club, IL Bob O'Link Golf Club, IL Bodega Harbour Golf Club, CA Braemar Men's Club, CA Brandermill Men's Golf Assn., VA Broadmoor Golf Club, CO Brook Hollow Golf Club, TX Brookhaven Country Club, TX Burning Tree Club, MD Butler National Golf Club, IL C.C. of Sapphire Valley, NC California Golf Club of San Francisco, CA Calumet Country Club, IL Candlewood Country Club, CA Canterbury Golf Club, OH Canton Public Golf Course, CT Cary Country Club, IL Castle Pines Golf Club, CO Cedar Ridge Country Club, OK Centerton Golf Club, NJ Chagrin Valley Country Club, OH Champaign Country Club, IL Champions Golf Club, TX Charlotte Country Club, NC Chartiers Country Club, PA Cherokee Town & Country Club, GA Cherry Hills Country Club, MO Cherry Hills Country Club, CO Chevenne Country Club, WY Chicago Golf Club, IL Chikaming Country Club, MI Churchill Valley Country Club, PA Claremont Country Club, CA Clinton, PA Club at Morningside, CA Cold Spring Country Club, NY Collision Par 3, IA Colonial Country Club, TN Colonial Country Club, TX Columbia Country Club, MD Columbus Country Club, OH Concordia Golf Club Congressional Country Club, MD Coral Ridge Golf Club Cordova Junior Golf, CA Corral De Tierra Country Club, CA The Country Club, MA The Country Club, OH

The Country Club, UT Cove Cay County Club, FL Cress Creek Country Club, IL Crestmont Country Club, NJ Crestwicke Country Club, IL Crystal Lake Country Club, IL Crystal Downs Country Club, MI Cypress Point Club, CA Del-Paso Country Club, CA Desert Forest Golf Club, AZ Desert Island Country Club, CA Detroit, Country Club of, MI Dorset Field Club, Inc., VT Druid Hills Golf Cub, GA **Dunedin Country Club** Dunes Golf & Beach Club, SC Dupont Country Club, DE Edgewood Country Club, PA Edison Club, The, NY Ekwanok Country Club, VT El Niguel Country Club, CA Eldorado Country Club, CA Elkins Lake Country Club, TX Essex Fells Country Club, NJ Etowah Valley Country Club, NC Exmoor Country Club, IL Findley Country Culb Forest Hills Country Club, MO Fox Den Country Club, TN Franklin Hills Country Club, MI Premont Country Club Friendly Hills Country Club, CA Friends of College Golf, Inc., CA Garland Golf Course, MI Glenwood Golf Association, VA Goshen Plantation Country Club, GA Green Hill Yacht & Country Club, MD Green Hills Country Club, CA Green Oaks Country Club, PA Green Valley, Country Club, of AZ Greensboro Country Club, NC Greensburg Country Club, PA Greenville Country Club Guif Stream Golf Club, FL Guyan Golf & Country Club, WV Hazeltine National Golf Club, MN Hercules Country Club, DE Hermitage Country Club, VA Hershey Country Club, PA Highland Country Club, PA Highland Meadows Golf Club, OH Hillcrest Country Club, CA Hillcrest Country Club, IL Hillendale Country Club, NY Hinadale Golf Club, IL Hole-In-The-Wall Golf Club, FL Holly Tree Country Club, SC Hollywood Golf Club, NJ Honors Course, Inc., The, TN Idlewild Country Club, IL Illini Country Club, IL Imperial Golf Club Indian Creek Yacht & Country Club, VA Indian Hill Club, IL Indian Hills Country Club, GA Indian Hills Men's Golf Assn., GA Indian Hills Senior Men's Golf Assn Industry Hills Rec. & Conf. Center, CA Innis Arden Golf Club, CT Jackson, Country Club of, MI Jupiter Island Club, FL Kayak Point Men's Golf Club, WA Kings River Golf & Country Club, CA Kirtland Country Club, OH Kissing Camels Golf Club, CO Kitsap Golf & Country Club, WA Knickerbocker Country Club, NJ La Grange Country Club, IL

La Jolla Country Club, CA Lafayette Elks Country Club, IN Lake Merced Golf & Country Club, CA Lake Shore Country Club, IL Lake Sunapee Country Club, NH Lakeside Golf Club of Hollywood, CA Lakewood Country Club, CO Lakewood Country Club, TX Lancaster Country Club Laurel Golf Club, MT Leewood Golf Club, NY Lincolnshire Fields Country Club, IL Lochmoor Club, MI Lockhaven Country Club, IL Logan Golf & Country Club Long Cove Club, SC Longmeadow Country Club, MA Los Altos Golf & Country Club, CA Losantiville Country Club, OH Manor Country Club, MD Maple Bluff Country Club, WI Martindale Country Club, ME Mayfield Country Club, OH Meadow Club, CA Meadowbrook Country Club, MO Meadowbrook Country Club, MI Meadowbrook Country Club, VA Medinah Country Club, IL Midland Country Club, NC Midlothian Country Club, IL Mill Creek Country Club, WA Mill Quarter Plantation CC, VA Milwaukee Country Club, WI Minneapolis Golf Club, MN Mission Viejo Country Club, CA Missoula Country Club, MT Montecito Country Club, CA Monterey Peninsula Country Club, CA Morris County Country Club, NJ Moselem Springs Golf Club, PA Moss Creek Golf Club Mountain Ridge Country Club, NJ Mt. Kisko Country Club, NY Myers Park Country Club, NC Country Club of North Carolina, NC North Hills Country Club, WI North Shore Country Club, IL Northmoor Country Club, IL. Northwood Club, The, TX Oak Hill Country Club, NY Oak Park Country Club, IL Oak Tree Golf Club, OK Oakland Hills Country Club, MI Oakmont Country Club, PA Oakmont Men's Club, CA Oakmont Residents Golf Club, CA Oakwood Club, OH Odessa Country Club, TX Old Oaks Country Club, NY Old Ranch Country Club, CA Old Town Club, NC Old Warson Country Club, MO Old Westbury Golf & CC, NY Onondaga Golf & Country Club, NY Orchard Lake Country Club, MI Orinda Country Club, CA Orlando, Country Club of , FL Oyster Harbors Club, MA Palo Alto Hills Golf & CC, CA Paradise Valley Country Club, AZ Park Ridge Country Club, IL Pasatiempo Golf Club, CA Payson Golf Course, Inc., AZ Payson Men's Golf Association, AZ Peach Tree Golf & Country Club, CA Pebble Beach Golf Company, CA Peninsula Golf & Country Club, CA Petersburgh, Country Club of, VA Philadelphia Country Club, PA Phoenix Country Club CA Pine Lake Country Club, MI Pine Tree Golf Club, FL

Pinetop Country Club, AZ Pinehurst Country Club Piping Rock Club, NY Pittsburgh Field Club, PA Plum Brook Country Club, OH Plum Hollow Golf Club, MI Plymouth Country Club, MA Ponca City Country Club, OK Portage Country Club, OH Portsmouth Country Club, NH Preakness Hills Country Club, NJ Princeville Men's Golf Club, HI Quail Club, Carmel Valley Goif & CC, CA Quail Creek Country Club, FL Quaker Ridge Golf Club, NY Racine Country Club, WI Rancho Bermardo Golf Club, CA Red Hill Country Club, CA Red Run Golf Club, MI Redlands Country Club. CA Ridgemoor Country Club, IL Ridgewood Country Club, NJ River Forest Golf Club, IL River Oaks Country Club, TX Riverbend Country Club, TX Riverhill Country Club, TX Riverside Golf Club, IL Rochester, Country Club of, NY Rochester Golf & Country Club, MN Rock Spring Club, NJ Royal Poinciana Golf Club, FL Ruth Lake Country Club, IL Rutland Country Club, VT Sahalee Country Club, WA Saint Charle's Golf Course, MO Saint David's Golf Club, PA Salinas Golf & Country Club, CA Salisbury Country Club, VA San Francisco Golf Club, CA San Gabriel Country Club, CA San Joaquin Country Club, CA San Jose Country Club, CA San Mateo Men's Golf Club, CA San Vicente Inn & Golf Club, CA Santa Ana Country Club, CA Santa Maria Country Club, CA Santa Rosa Golf & Country Club, CA Saucon Valley Country Club, PA Scaradale Golf Club, NY Scioto Country Club, OH Sea Island Golf Club, GA Seadiff Country Club, CA Seattle Golf Club, WA Sedgefield County Club, NC Seminole Golf Club, FL Sequoya Country Club, CA Shannopin Country Club, PA Sharon Heights Golf & CC, CA Shawnee Golf & County Club, OK Shoal Creek Country Club, AL Shorehaven Golf Club, The Silver Spring Country Club, CT Singletree Golf Club, CO Skokie Country Club, IL. Sleepy Hollow Country Club, NY Snee Farm Country Club, SC Somerset County Club, MN Somerset Hills Country Club, NJ South Hills Country Club, PA South Side Country Club, IL Southern Hills Country Club, OK Southampton Golf Club, NY Southview Country Club, MN Spartanburg Country Club Spring Valley Country Club, SC Springs Club, Inc., CA Spyglass Hill Golf Club, CA St. Clair Country Club, IL St. Clair Country Club, PA St. Cloud Country Club, MN Starmount Forest Country Club, NC Stockdale Country Club, CA

Stonehenge Golf & Country Club, VA Stono River Golf Club, SC Stonycroft Hills Club, MI Suburban Golf Club, NJ Summit Hills Country Club, Inc., KY Sundale Country Club, CA Sunningdale Country Club, NY Sunnybrook Golf Club, PA Sunnyside Country Club, CA Sunrise Country Club, CA Sylvana Country Club Tacoma Country & Golf Club, WA Tanglewood Golf Club Tatnuck Country Club, MA Thunderbird Country Club, CA Town & Country Club of St. Paul, MN Towson Golf & Country Club, MD Trails Golf Club, The, OK Trenton Country Club, NJ Tumble Brook Country Club, CT Tuscarora Golf Club, Inc., NY Twin Lakes Golf & Country Club, WA Useless Bay Golf & Country Club, WA Vinita Country Club, OK Virginia, Country Club of, VA Virginia Country Club, CA Vista Valley Country Club, CA Waccabuc Country Club, NY Waialae Country Club, HI Wakonda Club, IA Warwick Country Club, RI Waverley Country Club, OR Waynesborough Country Club, PA Wayzata Country Club, MN Westmoreland Country Club, PA Weston Golf Club, MA Westview Country Club, IL Westwood Country Club, OH Wheatley Hills Golf Club, NY Wianno Club, Inc., MA Wigwam Country Club, AZ Wild Dunes Golf Club, SC Wilderness Country Club, FL Wildwood Golf & Country Club, NJ Williamette Valley Country Club, OR Willow Oaks Country Club, VA Winchester Country Club, MA Winged Foot Golf Club, Inc., NY Wolferts Roost Country Club, NY Woodbridge Country Club, CT Woodcrest Club Woodland Country Club, IN Woodway Country Club, CT Working Golf Club Wykagyi Country Club, NY Wyndemere Golf & Country Club, FL Yakima Country Club, WA

Individual Denera

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