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If your golf course is in a littoral zone — or anywhere that salt water intrusion has become a problem — and fresh water is in short supply, Ray Hansen has the solution.

Make your own water.

Hansen, superintendent at the Ocean Reef Club, an exclusive 36-hole layout on the northern tip of Key Largo, most likely is the only golf course manager in the continental U.S. whose responsibilities include overseeing the operation of a reverse osmosis plant capable of transforming nearly a million gallons of brack-

ish water into fresh water every day.

Fed by deep (1,100 feet) wells which supply water with about 3,000 parts per million dissolved salts and solids, the plant produces water at 150 ppm salts and solids. Anything below 1,000 ppm is considered safe for turfgrass; anything below 500 ppm is potable.

The reject water containing about 17,000 ppm salts and solids is piped into canals which empty into the ocean. Sea-



water contains about 35,000 ppm salts and solids.

The plant was built in the 1970s to meet all the community's freshwater needs but, as it grew, running an aqueduct from a wellfield on the mainland became economically feasible.

Still, water from the wellfield costs \$6 per thousand gallons. Water from the "RO" plant costs about half that.

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Gunnite-lined reservoir holds about 2 million gallons, or slightly more than two days' supply of irrigation water at peak consumption.

"I figure it costs me about a thousand dollars a day to water my golf courses," Hansen says. "Three hundred thousand a year for the golf course's share of the operating costs of the plant and another \$60,000 for the irrigation system."

In addition to Hansen's two golf courses, the desalinated water is used to irrigate Card Sound GC, a private course within the ultra-private Ocean Reef community, and other landscaped areas.

Although he knows of no other golf courses using desalinated water on his scale, Hansen says he has had inquiries from Texas and Hawaii.

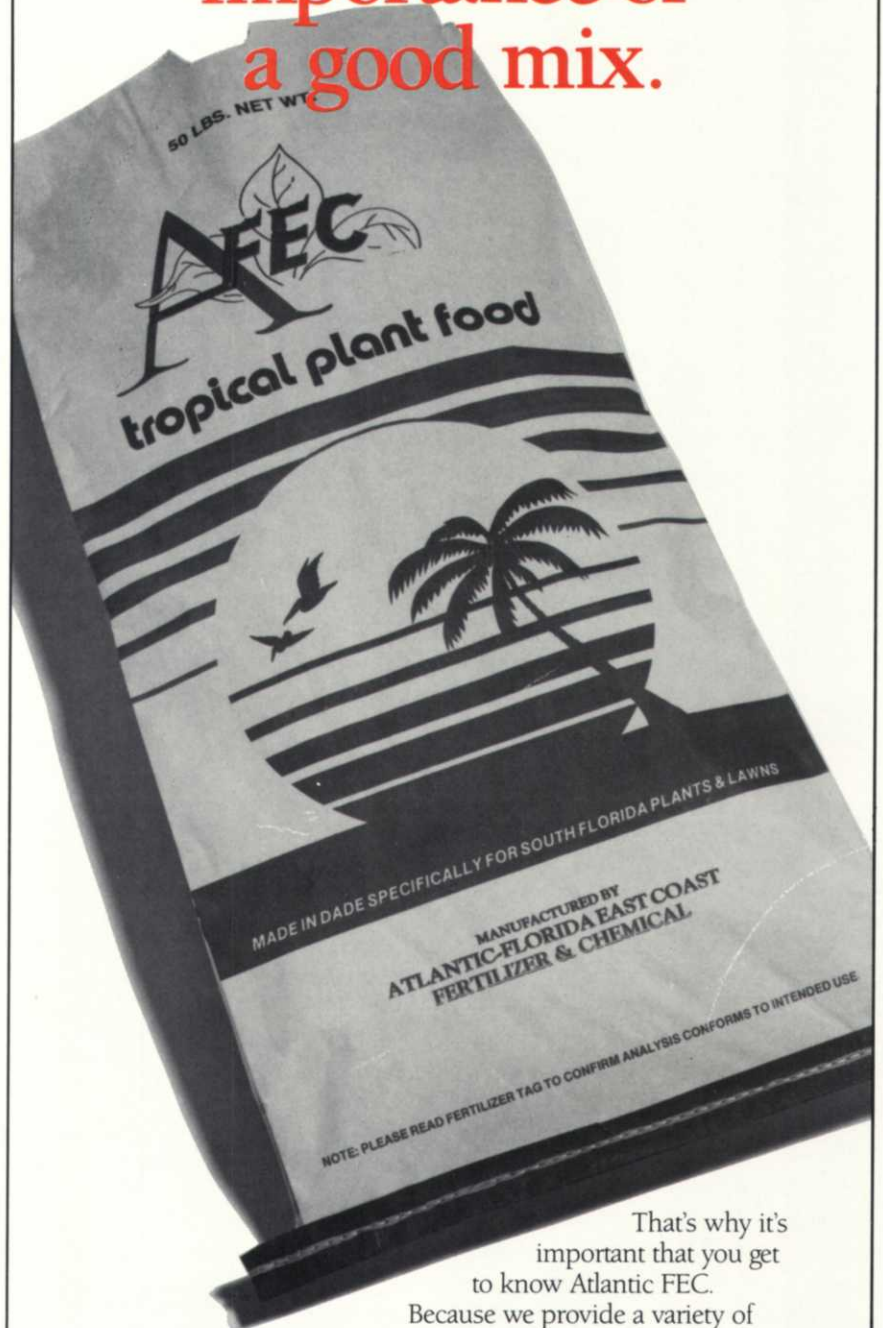
"Places that learned to get by on less water don't have to with this technology," he said.



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Ray Hansen at the controls of one of the reverse osmosis units.

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FLORIDA'S NUMBERS

Category	Number	(Rank)
Number of golfers	1,171,635	(7)
Participation Rate	9.9%	(22)
Rounds per year per golfer	36.0	(2)
Golfers who are women	22.1%	(26)
Golfers age 50 and older	42.6%	(1)
Average age of golfers	45.6	(1)
Total facilities	765	(1)
Daily Fee	369	(4)
Municipal	76	(6)
Private	320	(2)
Par-Three	43	(3)
Executive	100	(1)
Total Courses	932	(1)
Daily Fee	431	(2)
Municipal	89	(6)
Private	412	(1)
Par-Three	53	(3)
Executive	119	(1)
Nine-Hole Facilities	105	(17)
Percentage of total	14%	(50)
Daily Fee	63	(14)
Municipal	13	(21)
Private	29	(25)
Total Holes	15,300	(1)
Daily Fee	6,930	(1)
Municipal	1,413	(5)
Private	6,957	(1)
Population per 18 Holes	14,300	(6)
Population per 18 Public Holes	26,200	(16)
Golfers per 18 holes	1,378	(8)

Source: National Golf Foundation, Jan. 1, 1989

(From page 16)

In Florida \$200,000 lots are advertised on billboards and sold out of mobile homes!

But residents aren't the only ones who get a good deal.

Collectively, Florida's golf resorts so completely dominate the industry that half its resort courses could be distributed to all the other resort areas of the world and a case could be made that what was left still comprised the world's best collection.

And we cannot emphasize the word "collection" too strongly. Nobody seriously claims that Florida resort courses surpass all others in quality. It's just that there are so many "world-class" resort courses in the state that they tend to get lost in the shuffle:

What is mundane here would be labeled "spectacular" almost anywhere else.

That's the sunny side: golf is booming. People plan their whole lives around the fact that they can move to Florida and play golf year-around on

outstanding golf courses whose quality somehow seems to improve every year.

The down side, so far as superintendents are concerned, is that people plan their whole lives around the fact that they can come to Florida and play golf every day of the year on what they expect to be the best golf course in the world.

If you have to, read those last two paragraphs again. The subtle differences between them have led to a profession littered with heart disease and ulcers.

In an unguarded moment, ask a Florida superintendent to name his biggest problems and most likely he'll respond, "Mole crickets, members' egos, the #%&i* (fill in your regulatory agency of choice) and I need a day off."

Mole crickets are a serious problem in Florida (page 56), as are parasitic nematodes, but turf managers all over the world must battle pests with a declining arsenal of chemical weapons.

Nor has Florida cornered the mar-

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ket on politically-charged regulatory agencies.

What makes Florida unique is its combination of tropical climate and easy accessibility to hordes of wealthy egos who insist, "I want things as good as they were up North, only better."

Only God has not yet revealed how to grow things "as good as they were up North" in a tropical climate with lots of traffic and no dormant season.

And that's where the tine meets the turf.

The problem is peculiar to private clubs, but nearly half of Florida's courses are private.

In guarded conversations, most golf-playing superintendents will admit that properly maintained bentgrass under optimum conditions provides a better putting surface than the best hybrid bermudagrasses.

The differences are subtle, and should not make a bit of difference to any but the lowest handicapper, but fact has a way of disappearing in the face of ego.

Members know that bentgrass is best and, "We want the very best course in Florida, bar none. That's why I come here every winter and that's why you have a job."

End of discussion.

Most superintendents use the strategy of overseeding — planting bentgrass, or various combinations of bentgrass, rye, fescue and poa trivialis in the fall as the bermudagrass goes dormant — but that creates another set of problems: the greens are nearly unplayable during the two transition periods. Furthermore, overseeded greens generally don't reach peak quality until late February.

Most private club members are seasonal residents: they return north in March and April, meaning a lot of work goes into providing only a few weeks of superior putting surface.

So a few clubs are now experimenting with keeping the bentgrass greens year-around.

Bentgrass will stay alive — barely

— in Florida's long, hot, humid summers, but not if it gets any significant traffic.

How much traffic is significant?

"Anything more than two four-somes a day and I've got trouble," said one superintendent.

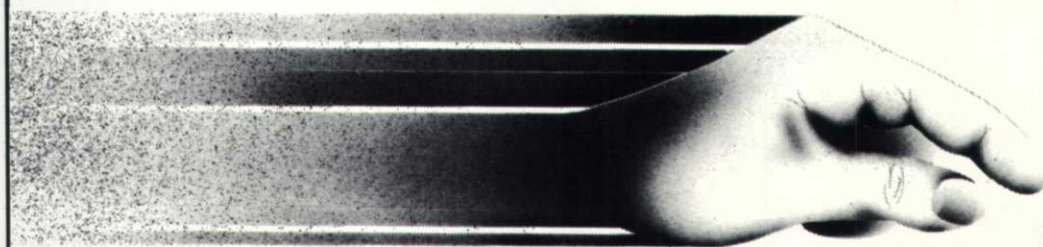
Furthermore, the amount of care required to keep the grass alive is extraordinary. Frequent syringing, sometimes around the clock, is required to keep the grass cool. And all that water leads to fungus problems and...

The whole world saw what can happen when PGA National GC in Palm Beach Gardens lost its greens the week before it hosted the 1987 PGA Championship.

And the spectre of those brown, lifeless greens on international television, created by relentless pressure to have "the best course in the world, bar none" hangs over every superintendent's head.

Perhaps that's why the typical Florida superintendent rarely stays at one place more than five or six years. 🐢

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JEFF PRITCHARD

Director Golf Course Operations, PGA West, La Quinta, California

If you don't like these 29 great ones, wait a year

Florida has lots of great golf courses. And if you don't like any of the current crop, just wait a year or two. Within that span, at least a few new courses will make somebody's list of "greats."

Great golf courses can be found all over the world; what distinguishes Florida's collection is its size, variety and, above all, relative youth.

Of the 29 outstanding golf courses depicted on these pages, only 11 were built before 1980, and only three before 1970: the Bay Hill Club and the "Blue Monster" at Doral by Dick Wilson and Seminole, the 60-year-old mystery course which makes everybody's list even though most have never trod its turf or laid eyes upon its classic Donald Ross bunkers.

We chose 29 courses for two reasons:

- That's how many we ended up with after taking the top 20 from three publications which have extensive experience in Florida and adding the nine beauties on *Golf Digest's* list of America's 100 best golf courses.

- We couldn't fit any more around the map.

The latter statement is not entirely facetious. A hundred could have been added with little drop in quality.

Truth be told, the "rank" of a golf course says as much about the quality of its public relations as it does about the quality of the architect, contractor and superintendent.

Two different methods were used by the four publications to select the courses on their lists: *Golfweek*, a national weekly newspaper which began as a Florida publication in 1975, and *The*

Florida Golf Reporter, a monthly magazine, both rely on reader polls. Readers see only a small percentage of the courses they vote on.

Golf Digest and *The Florida Golfer*, on the other hand, have panels of "experts" walk the courses, study the layouts, pore over the blueprints, test the shot values and consult the stars.

They come up with the same courses as the readers, only in a slightly different order.

So take the particular rankings with a dose of skepticism but trust us: these are great golf courses. They represent some of the very best work of 16 different architects, 12 of whom are still signing contracts.

Most are spectacular to behold, difficult to play, and impossible to get on, particularly at this time of year. Many were built in conjunction with real estate developments that are not yet sold out: qualified prospects can get on, if arrangements are made in advance.

A few are open to the first golfers in line, notably Bloomingdale Golfers Club in Valrico and Coral Oaks in Cape Coral. The latter is municipally owned.

Of the resorts, Mission Inn is probably the least known but its dramatic changes in elevation are matched only at The Ravines, Jupiter Hills and Black Diamond Ranch, all of which are veddy, veddy private.

One thing these 29 golf courses have in common with hundreds of Florida layouts: they are exceptionally well maintained. For that reason, we have given the FGCSA superintendent credit for the ranking, along with the architect.

GOLDEN OCALA

Ocala, 1986, Ron Garl. **Development.** *Golfweek* readers 16, *Golf Reporter* readers 18, *Florida Golfer* panel 14

BLACK DIAMOND RANCH

Lecanto, 1987, Tom Fazio. **Carl Jacob**, superintendent. **Private.** *Golfweek* readers 6, *Golf Reporter* readers 2, *Florida Golfer* panel 1

LAKE NONA

Orlando, 1986, Tom Fazio. **John Yancey**, superintendent. **Private.** *Golfweek* readers 19, *Golf Reporter* readers 1, *Florida Golfer* panel 3

DISNEY MAGNOLIA

Orlando, 1970, Joe Lee. **Larry Kamphaus**, CGSC, superintendent. **Resort.** *Golfweek* readers 18, *Florida Golfer* panel 13

ISLEWORTH

Windermere, 1986, Arnold Palmer/Ed Seay. **Joel Jackson**, CGSC, superintendent. **Private.** *Florida Golfer* panel 20

INNISBROOK COPPERHEAD

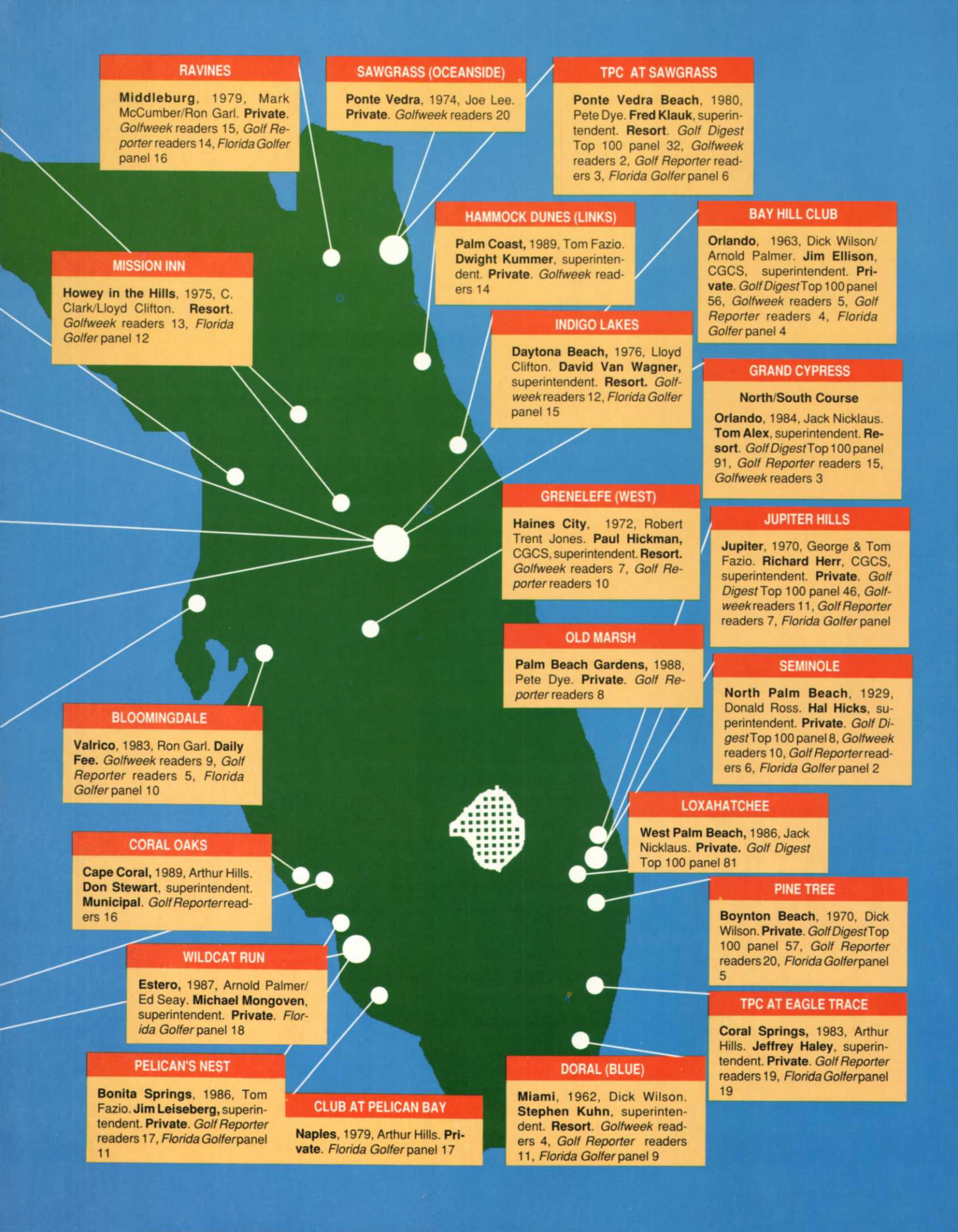
Tarpon Springs, 1983, Larry Packard. **Resort.** *Golf Digest* Top 100 panel 69, *Golfweek* readers 1, *Golf Reporter* readers 12, *Florida Golfer* panel 8

FIDDLESTICKS (LONG MEAN)

Fort Myers, 1983, Ron Garl. **Dale Conzelmann**, CGCS, superintendent. **Private.** *Golfweek* readers 17, *Golf Reporter* readers 13

BONITA BAY CLUB

Bonita Springs, 1985, Arthur Hills. **Mark Black**, superintendent. **Private.** *Golf Digest* Top 100 panel 60, *Golfweek* readers 8, *Golf Reporter* readers 9



RAVINES

Middleburg, 1979, Mark McCumber/Ron Garl. **Private.** *Golfweek* readers 15, *Golf Reporter* readers 14, *Florida Golfer* panel 16

SAWGRASS (OCEANSIDE)

Ponte Vedra, 1974, Joe Lee. **Private.** *Golfweek* readers 20

TPC AT SAWGRASS

Ponte Vedra Beach, 1980, Pete Dye. **Fred Klauk**, superintendent. **Resort.** *Golf Digest* Top 100 panel 32, *Golfweek* readers 2, *Golf Reporter* readers 3, *Florida Golfer* panel 6

MISSION INN

Howey in the Hills, 1975, C. Clark/Lloyd Clifton. **Resort.** *Golfweek* readers 13, *Florida Golfer* panel 12

HAMMOCK DUNES (LINKS)

Palm Coast, 1989, Tom Fazio. **Dwight Kummer**, superintendent. **Private.** *Golfweek* readers 14

BAY HILL CLUB

Orlando, 1963, Dick Wilson/Arnold Palmer. **Jim Ellison**, CGCS, superintendent. **Private.** *Golf Digest* Top 100 panel 56, *Golfweek* readers 5, *Golf Reporter* readers 4, *Florida Golfer* panel 4

INDIGO LAKES

Daytona Beach, 1976, Lloyd Clifton. **David Van Wagner**, superintendent. **Resort.** *Golfweek* readers 12, *Florida Golfer* panel 15

GRAND CYPRESS

North/South Course
Orlando, 1984, Jack Nicklaus. **Tom Alex**, superintendent. **Resort.** *Golf Digest* Top 100 panel 91, *Golf Reporter* readers 15, *Golfweek* readers 3

GRENELEFE (WEST)

Haines City, 1972, Robert Trent Jones. **Paul Hickman**, CGCS, superintendent. **Resort.** *Golfweek* readers 7, *Golf Reporter* readers 10

JUPITER HILLS

Jupiter, 1970, George & Tom Fazio. **Richard Herr**, CGCS, superintendent. **Private.** *Golf Digest* Top 100 panel 46, *Golfweek* readers 11, *Golf Reporter* readers 7, *Florida Golfer* panel

OLD MARSH

Palm Beach Gardens, 1988, Pete Dye. **Private.** *Golf Reporter* readers 8

SEMINOLE

North Palm Beach, 1929, Donald Ross. **Hal Hicks**, superintendent. **Private.** *Golf Digest* Top 100 panel 8, *Golfweek* readers 10, *Golf Reporter* readers 6, *Florida Golfer* panel 2

BLOOMINGDALE

Valrico, 1983, Ron Garl. **Daily Fee.** *Golfweek* readers 9, *Golf Reporter* readers 5, *Florida Golfer* panel 10

LOXAHATCHEE

West Palm Beach, 1986, Jack Nicklaus. **Private.** *Golf Digest* Top 100 panel 81

CORAL OAKS

Cape Coral, 1989, Arthur Hills. **Don Stewart**, superintendent. **Municipal.** *Golf Reporter* readers 16

PINE TREE

Boynton Beach, 1970, Dick Wilson. **Private.** *Golf Digest* Top 100 panel 57, *Golf Reporter* readers 20, *Florida Golfer* panel 5

WILDCAT RUN

Estero, 1987, Arnold Palmer/Ed Seay. **Michael Mongoven**, superintendent. **Private.** *Florida Golfer* panel 18

TPC AT EAGLE TRACE

Coral Springs, 1983, Arthur Hills. **Jeffrey Haley**, superintendent. **Private.** *Golf Reporter* readers 19, *Florida Golfer* panel 19

PELICAN'S NEST

Bonita Springs, 1986, Tom Fazio. **Jim Leiseberg**, superintendent. **Private.** *Golf Reporter* readers 17, *Florida Golfer* panel 11

DORAL (BLUE)

Miami, 1962, Dick Wilson. **Stephen Kuhn**, superintendent. **Resort.** *Golfweek* readers 4, *Golf Reporter* readers 11, *Florida Golfer* panel 9

CLUB AT PELICAN BAY

Naples, 1979, Arthur Hills. **Private.** *Florida Golfer* panel 17



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