



# Deep Roots, Dwarf Habit, Salinity Tolerance: SeaDwarf Paspalum Looks Promising

By Stacie Zinn

Even though 2003 witnessed some major rain events, large portions of the nation continued to experience drought conditions. In October, the National Drought Summary indicated that portions of the Great Lakes, Plains and western parts of the United States were under "moderate to severe" drought conditions.

The National Drought Summary is compiled by the National Drought Mitigation Center with the help of the U.S. Department of Agriculture, the Department of Commerce/National Oceanic and Atmospheric Administration along with the University of Nebraska-Lincoln. For more information: [www.drought.unl.edu/dm/monitor.html](http://www.drought.unl.edu/dm/monitor.html).

More alarming still is the ever-growing demand for irrigation water.

A June 2002 study by John J. Haydu, Ph.D., and Alan W. Hodges, Ph.D. at the University of Florida, indicated that "water use for landscape irrigation is a critical and growing issue." The study surveyed 223 golf courses in Florida on their water use.

The results were eye-opening.

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.) Nearly 85 billion gallons of that water came from recycled water - the primary source for

almost half of all golf facilities surveyed.

The study also reported that the use of recycled water on golf courses in Florida has grown from just 8 percent in 1974, to 21 percent in 1994, and to 49 percent in 2000. The reason for this?

The study surmised that "many golf course superintendents are aware of the increasing political pressure to reduce consumption and 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..."

Still, in some areas, the demand for water to irrigate turfgrass continues to grow. The survey indicated that 42 percent of the respondents said that their water consumption had decreased, the same share at 42 percent said their water use per acre had remained the same, but nine percent of the respondents said that their water use had *increased* over the past five years and that it increased by roughly 8 percent.

All of this adds up to the need for more efficient methods of irrigation and an increased use of non-potable water to irrigate turfgrass. But not all turfgrass stands up well to the low water quality often found in reclaimed, recycled or effluent irrigation

**Drought, low water quality create the need for more water-efficient turf such as SeaDwarf seashore paspalum**

*This photo taken at Crown Colony Golf & Country Club in Ft. Myers, shows SeaDwarf seashore paspalum in use on the 14th green.*  
sources.

Seashore paspalum, especially a dwarf cultivar called SeaDwarf, is a variety of warm-season turfgrass that does, however, hold up well in high salinity situations that are often found with reclaimed water.

The University of Florida's Laurie E. Trenholm, Ph.D., reports that seashore paspalum has "excellent salt tolerance." A report by Todd Lowe, agronomist for the USGA Green Section's Florida Region indicates that seashore paspalum can tolerate a salt/salinity level of 34,500 ppm, which is well above the salt levels of most effluent water supplies.

Steward T. Bennett, CGCS, is credited with discovering SeaDwarf seashore paspalum at Alden Pines Country Club in Bokeelia, and cultivating SeaDwarf for use on other golf courses, sports fields and residential lawns. Bennett said he has successfully irrigated SeaDwarf with water salinities up to 20,000 ppm in good quality soil, and on a regular basis irrigates the SeaDwarf on his course with water up to 13,000 ppm of salt without having to flush the soil for salt.

Bennett's tale of SeaDwarf's discovery and development is one of serendipity and perseverance.

Alden Pines had been planted to a cultivar of seashore paspalum called Adylayde from Australia in 1980. When Bennett arrived a decade later, he started a two-acre nursery that consisted of "a dozen different cultivars thrown into a field in extremely poor soils (with) very high saltwater irrigation. Not much survived.

"But after hours and hours of swatting mosquitos and no-see-ums, I'm walking around - I swear I walked every square inch of that place 15 times - (I) looked down and went 'Wow, what is that?'

"It was a little tiny SeaDwarf sprig...

a long stolon about 2 or 3 inches but the leaves were really locked up. I thought there must be a lot of salt there - salt water has a tendency to dwarf things somewhat - and I marked it with a stick. Next day I got back, got the paint gun, pulled everything out from around it, put a circle around it.

"That was the little mother block, I called it. All the history (started) there.

"I isolated that plant, put it into beds at the greenhouse, brought it down here at the golf course, repropagated to make sure that it really was not just a fluke - something to do with soil conditions or salinity - but that it really was a dwarf-type grass.

"That's it. That was 1997.

"It was developed by nature (and) discovered by man in a manipulated environment - the golf course. It's just something I recognized as being a much finer-textured dwarf type of paspalum than I'd seen in four or five years."

SeaDwarf seashore paspalum not only thrives under poor water quality conditions, but because of its excellent drought tolerance, SeaDwarf seashore paspalum takes less water to irrigate than some other popular turfgrasses.

The USGA's Lowe reports that seashore paspalum requires 50 percent of the water needed to irrigate hybrid bermudagrass.

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Why? Seashore paspalum, especially SeaDwarf seashore paspalum, creates a deep root system that holds in moisture.

In an industry that is searching for irrigation options, seashore paspalum is a warm-season grass that offers golf course superintendents and landscape professionals the opportunity to meet both water quality and water shortage issues head on, while still delivering a beautiful, lush green lawn to their customers.



*Irrigation heads run on a very young golf green grassed in SeaDwarf seashore paspalum at Hammock Bay Golf & Country Club in Naples. Hammock Bay was grassed with SeaDwarf from tee-to-green.*