



# Green Section

## BEST MANAGEMENT PRACTICES CASE STUDY



Converting from bermudagrass to seashore paspalum has improved playing conditions, reduced water use and allowed the course to manage salt issues.

# ADDRESSING SALT ISSUES BY CONVERTING TO SEASHORE PASPALUM

Hammock Beach Resort—Ocean Course | Palm Coast, Fla. 32137

Steve Sorrell, superintendent

### ISSUE

The Ocean Course at Hammock Beach Resort had water issues that were negatively impacting its bermudagrass turf. The golf course's main water supply is recycled water that is held in four holding ponds. This water source is supplemented with brackish water to meet the demands of the turfgrass. Bermudagrass can be damaged by the high salt content in the brackish water, so careful attention to salt levels in the soil was necessary. Salt levels in the soil varied depending on the area of the course, rate of turfgrass growth, levels of rainfall and the amount of irrigation that was applied. If rainfall is scarce, it is necessary to occasionally irrigate with high volumes of water to flush salts out of the rootzone.

The second water issue the course faces is the threat of salt water damage from the adjacent Atlantic Ocean. The bermudagrass on the Ocean Course was severely damaged following a devastating storm surge during Hurricane Matthew in 2016. The incoming ocean water affected multiple fairways, roughs, tees and even some

putting greens. The lack of power and inability to irrigate prevented the staff from being able to flush the salts through the soil, resulting in extensive damage to the lower-lying bermudagrass areas.

## **ACTION**

Following the storm surge damage, there were two solutions proposed to address the salt issues, both necessitating course closure. The first option was to remove the most severely damaged bermudagrass and salt-contaminated soil, then replace those areas with clean soil and replant new turf. The worst areas would be replanted with bermudagrass sod, followed immediately by perennial ryegrass overseeding in order to reopen the golf course for play as soon as possible.

The second option was to remove all the bermudagrass and convert the golf course to seashore paspalum, a more salt-tolerant turfgrass. This would result in full course closure and loss of golf revenue from resort visitors for an entire year, but it would provide a long-term solution to the water issues.

The turf conversion option was implemented; with greens, tees, fairways and roughs all either sodded or sprigged to Platinum™ seashore paspalum in early spring of 2017. The golf course was closed for 13 months while wall-to-wall seashore paspalum was established.

## **RESULTS**

Three to four weeks before completion of the grow-in process, the golf course was impacted by yet another storm, Hurricane Irma, with a similar storm surge and power loss. A USGA Agronomist performed a Course Consulting Service visit to assess the damage, which proved to be far less on the young seashore paspalum than what had occurred a year earlier on mature bermudagrass. Despite ocean water encroachment, days of standing salt water, and extended loss of electricity preventing irrigation and flushing of salts from impacted areas, the course opened as planned. Seashore paspalum had proved its ability to handle salt issues.

The reopening of the golf course was very important to the community, as the facility is an attraction for tourism. The newly renovated golf course offers improved playing conditions and aesthetics because of the conversion to seashore paspalum. There has been a significant increase in membership and revenue due to the improvement in turfgrass quality and playing conditions.

Less water is now required to irrigate the golf course because seashore paspalum is more efficient at utilizing saline water than bermudagrass. Superintendent Steve Sorrell anticipates a 15-percent reduction in water use throughout the season. Additionally, in periods of drought the golf course can be irrigated from the salt water wells without having to dilute that water with recycled water. This would not be possible with bermudagrass.

The biggest challenge in this process was choosing the more difficult, costly and laborious solution to the course's salt issues. Closing the course for turf conversion caused a loss of rounds and revenue for more than a year. However, the long-term improvements in playing conditions and reliability justified the short-term inconvenience. Regular communication and marketing was helpful during renovation to remind and encourage potential visitors and golfers that a new and better golf course was on the horizon.