



King Tides: A Concern For Coastal Courses In The Southeast

By John Foy, regional director, Southeast Region

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A king tide is a colloquial term for the highest predicted tide of the year at a coastal location. All along the southeast coast, king tides have become more of a concern during the early to mid-fall. Coinciding with a supermoon – i.e., when the moon is closest to the earth – high tides in late September caused localized flooding of low-lying areas and streets in Miami, Fort Lauderdale and Delray Beach, Florida. During the last week of October – again coinciding with another full moon – king tides were experienced further north. In Charleston, South Carolina a morning high tide peaked at over 8.5 feet – 1.5 foot higher than the normally occurring highest tide of the year. Also, in Savannah, Georgia, the water level crested at 10.43 feet – just below the record of 10.87 feet recorded when Hurricane Nine made landfall in 1947. In addition to supermoons, winds, currents and sea level rise are considered factors in the occurrence of king tides. Recently, during three consecutive Course Consulting Service visits, the impact of king tides was observed firsthand on coastal golf courses.



Record-setting king tides have caused localized flooding and other problems at courses in coastal areas of the Southeast Region.

At all of the courses visited, varying degrees of localized saltwater flooding had been experienced in low-lying fairways, roughs and bunkers. With the subsequent normal decline of the king tides and lowering of the groundwater table, the localized flooding problems will diminish. However, in some locations

turf damage and loss still can be a problem due to salt accumulation in the soil. Naturally, before recovery and sod repair work can be undertaken, it will be necessary to leach/flush salt accumulations out of the upper rootzone. At other golf courses in Southeast Florida where repeated flooding problems have been experienced due to normal high tides during fall, reconstruction work to raise low-lying areas has been included in capital improvement plans.

An additional concern at two courses has been saltwater intrusion into lakes that serve as sources of irrigation water. At both courses, spikes in the salinity of the irrigation water caused damage to turf and landscape plant foliage. Fortunately, only minor salt burn was experienced and sufficient rainfall to wash off and dilute the salts had subsequently occurred, allowing turf to begin recovering. At both courses, programs now are in place to more closely monitor irrigation water quality during fall to avoid a repeat of problems in the future. An electrical conductivity (EC) meter can be a useful tool for monitoring soil and irrigation water salinity, especially at courses that are subject to tidal flooding and saltwater intrusion.

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