

How Putting Green Difficulty Impacts USGA Course Rating™ and Slope Rating®

Firm and fast greens are challenging, but how much do they influence Course Rating and Slope Rating?

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Putting green contours and speed have an impact on USGA Course Rating™ and Slope Rating®. Severe contours and fast green speeds receive a higher obstacle value compared to relatively flat putting greens maintained at moderate speeds.

The U.S. Open Championship has long been known for being a rigorous test of golf with difficult playing conditions that challenge a player's shot-making abilities and mental toughness. Firm, fast putting greens with challenging but fair hole locations are a key aspect of course setup for every U.S. Open. Putting green setup during the U.S. Open, which focuses on firmness and speed, is determined by careful analysis of putting green contours on each hole and anticipated approach shots — i.e., long, medium, short iron, elevated surface, etc. — to various hole locations (Davis, 2007). Therefore, U.S. Open

putting green setup changes from year to year because putting green design and course layout vary among different courses.

When determining the appropriate speed and firmness for daily play at your course, the same careful analysis is necessary. Equally important, golfer abilities should be a determining factor of putting green setup. All too often putting green setup is dictated by the best golfers at a course, who cry loudly for firmer and faster conditions. One argument for maintaining more difficult putting greens is that putting conditions heavily influence USGA Course Rating™ and Slope Rating®. This senti-

ment is inaccurate, and understanding the USGA Course Rating System™ explains why.

USGA COURSE RATING AND SLOPE RATING

The USGA Course Rating System™ indicates the difficulty of a golf course for a scratch golfer under normal course and weather conditions. A Slope Rating® is the USGA assessment of the relative playing difficulty of a course for players who are not scratch golfers compared to scratch golfers. The USGA Course Rating System™ is the standard by which the USGA Handicap System™ is built,

and it determines a player's Course Handicap™ for a particular course. For instance, the [USGA Course Handicap™ Calculator](#) determines that a golfer with a Handicap Index® of 14.3 playing a course with a Slope Rating® of 137 will have a Course Handicap™ of 17, which is the number of strokes that player will receive in relation to other players for a particular set of tees.

Course yardage is the primary determinant of a Course Rating™, with adjustments for effective playing length factors such as roll, prevailing wind, and altitude above sea level. There are also 10 obstacle factors taken into consideration, including water hazards, trees, out of bounds, rough difficulty, putting difficulty, etc. Each obstacle is assigned a value of 0 to 10, depending on the difficulty it presents to a scratch or bogey golfer on a given hole. When the evaluation is complete, each of the obstacle values is totaled and multiplied by a relative weighting factor. The weighted obstacle values are applied to scratch and bogey formulas and

then converted to strokes. The strokes are added or subtracted from the yardage rating to produce a Bogey Rating™ and Course Rating™. The Slope Rating® is determined by finding the difference between Bogey Rating™ and Course Rating™ values and multiplying by a constant.

From a Course Rating™ perspective, putting green contours and speed impact the obstacle value for putting green difficulty. Putting green speed is determined by measuring ball roll distance with a USGA Stimpeter®. Severe contours combined with fast speeds result in a higher obstacle value compared to relatively flat contours maintained at moderate speeds, which are easier for both scratch and bogey golfers. Putting green firmness is subjectively measured and only included in determining difficulty ratings when firmer- or softer-than-normal conditions are observed. Interestingly, firmer-than-normal putting greens can have a greater impact on Course Rating™ and Slope Rating® than fast putting green speeds because firmness influ-

ences three obstacle factors: green target, recoverability and rough, and bunkers.

A CASE STUDY

Course Rating™ and Slope Rating® with putting green speeds maintained at 9 feet 6 inches versus 10 feet 6 inches — To illustrate how putting green speed may impact the Course Rating™ and Slope Rating®, a simulation from XYZ Golf Club is provided. The putting greens at XYZ Golf Club have a balance of relatively flat to moderately sloped putting greens, which is consistent with what course raters find at golf courses across the country, according to Scott Hovde, assistant director of the USGA Handicap and Course Rating Administration. The putting green speed at XYZ Golf Club is normally maintained to 9 feet 6 inches, with a Course Rating™ of 70.0 and a Slope Rating® of 128. If the putting green speeds are increased to 10 feet 6 inches for daily play, the Course Rating™ would change to 70.2 and the Slope Rating® to 130. A slightly



A putting green deemed firmer than normal will impact Course Rating™ and Slope Rating® more than a fast surface because other obstacle factors will be affected, such as green target, rough and recoverability, and bunkers.

larger increase in Course Rating™ and Slope Rating® is expected with a larger increase in green speed, but significant changes in green speed — more than 1-2 feet — maintained on a daily basis are not common.

Remember, Course Rating™ and Slope Rating® are derived from the expected scores of a scratch and a bogey golfer. Scratch golfers will rarely three putt, while a bogey golfer may three putt a few times during a round of golf regardless of green speed. Over 10 rounds, a player's Handicap Index® will be largely unaffected if putting green speeds are increased from 9 feet 6 inches to 10 feet 6 inches.

Putting green speed has a greater impact on players new to the game or with very high handicaps. Green speed not only influences putting but also affects pitch shots, which has a greater impact on high-handicap players, who tend to miss many approach shots and must recover from around putting greens frequently.

CONCLUSION

Fast putting greens may not have a large impact on Course Rating™ and Slope Rating®, but they certainly impact the enjoyment of golf for many players. Fast putting greens are simply too difficult for most players with above-average handicaps. Fast putting greens also decrease pace of play because making multiple putts, extra pitch shots, or taking longer to prepare for putts or pitch shots adds time to a round of golf.

Maintaining fast putting greens can also be an agronomic risk. There are many maintenance inputs superintendents use to produce fast green speeds. Unfortunately, many rely on aggressive high-input programs — e.g., low mowing heights, frequent



An increase in putting green speed from 9 feet 6 inches to 10 feet 6 inches will likely only increase the Course Rating™ by 0.2 and the Slope Rating® by 2.

mowing, and repetitive rolling — to produce fast speeds. Aggressive programs to produce fast green speeds may work for a week or two when the weather is optimal, but rapid turf decline can be expected when these programs coincide with stressful weather. The phrase “everything in moderation” is accurate when consider-

ing how maintenance inputs like mowing height, mowing frequency, and rolling frequency should be used at your facility. Maintaining fast speeds at the expense of turf health is a risk with serious consequences. Most players agree they would rather play slower putting greens that survive tough weather compared to fast putting greens that have serious problems each summer.

Also, as faster putting green speeds are maintained, the area available for hole locations becomes smaller. Fewer hole locations results in more concentrated traffic, which can create bumpy conditions and even severe turf decline.

The putting green speed and firmness maintained for daily play should be determined by the golf and green committees at your facility. These committees should base course setup decisions on two factors: the golfing ability of the majority of players at your facility and turf performance. Course Rating™ and Slope Rating® are not heavily influenced by speed, so focusing on promoting turf health, smoothness, consistency, and firmness with less emphasis on speed should be the number-one goal.

LITERATURE CITED

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