

Golf Course Maintenance

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Contents

- 1.What type of surface do we want?
- 2.What kind of surfaces do we have?
- 3.How can we get the desired surfaces?



- This is an ideal surface for golf. It is smooth, and the ball can bounce and roll.



•Golf for much of the year in Japan is on similar surfaces.



•Of course there are seasonal differences. But what about the most highly-maintained surfaces?



•I've measured and written about this in detail.

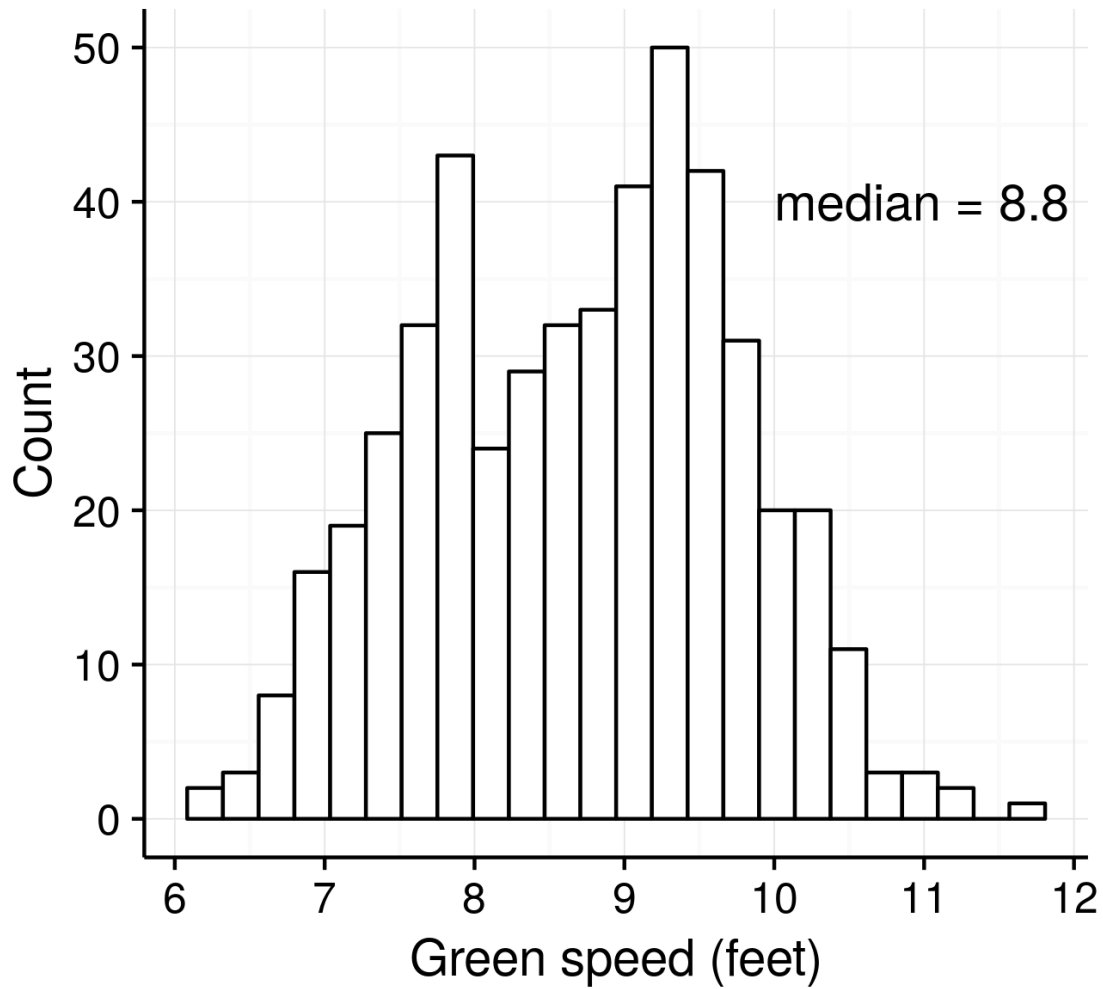
What kind of surfaces do we have?



- Summary of measurements from putting greens in Japan

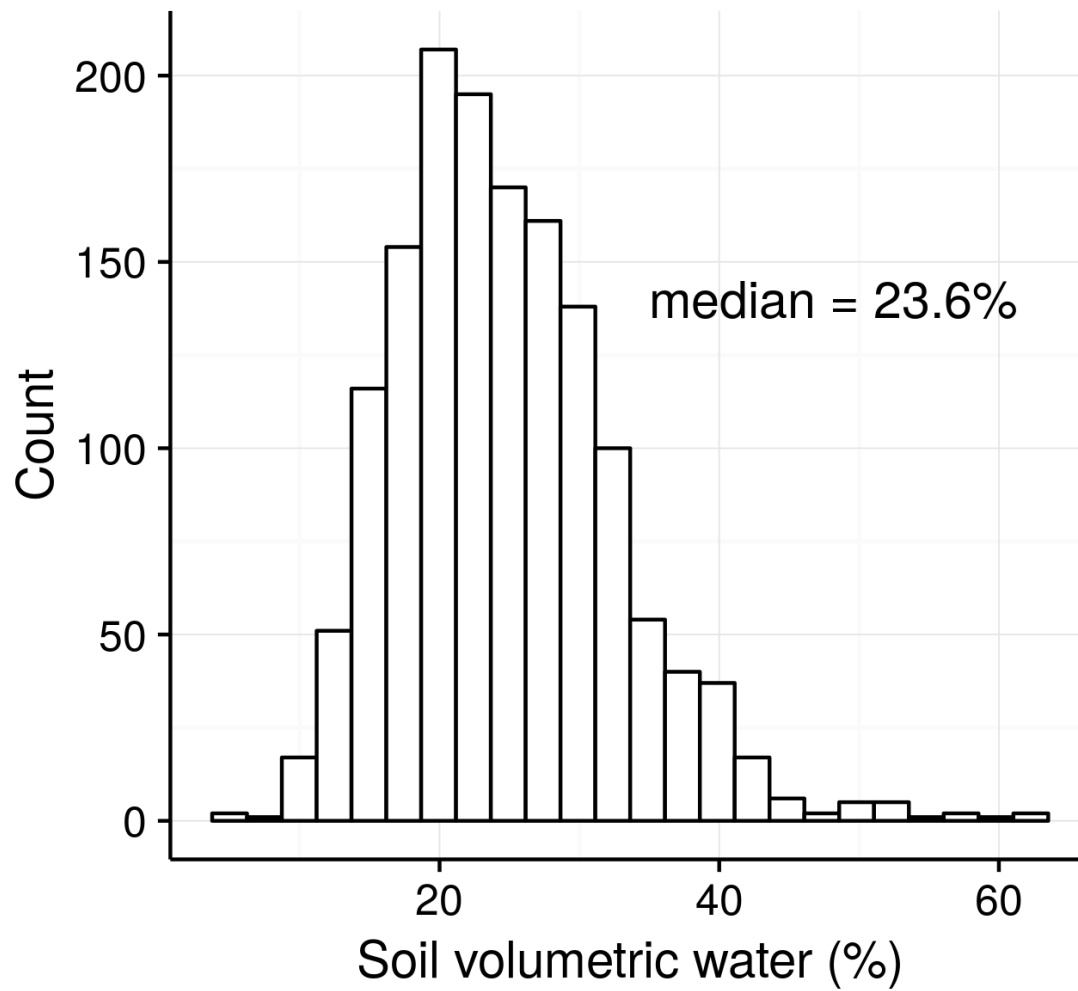


- First, green speed as measured by the stimpmeter



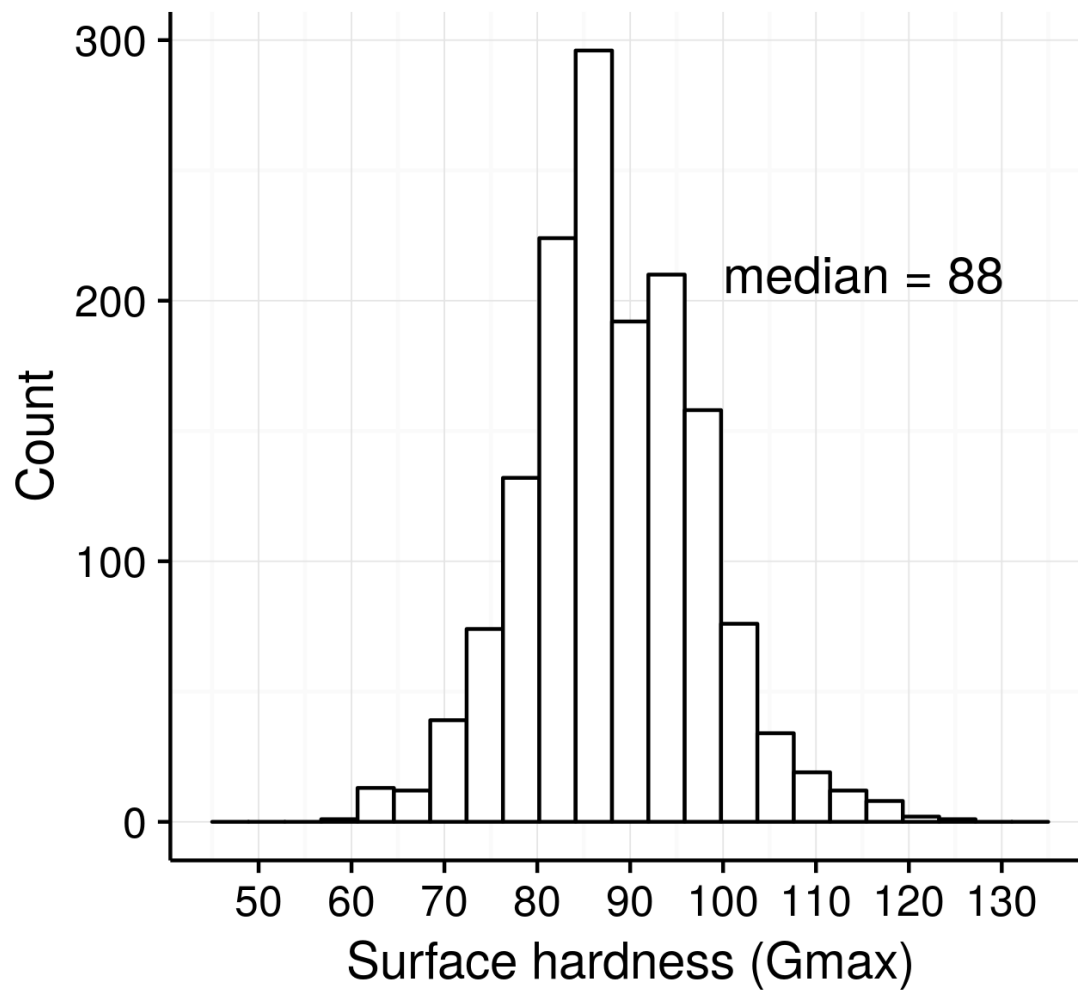


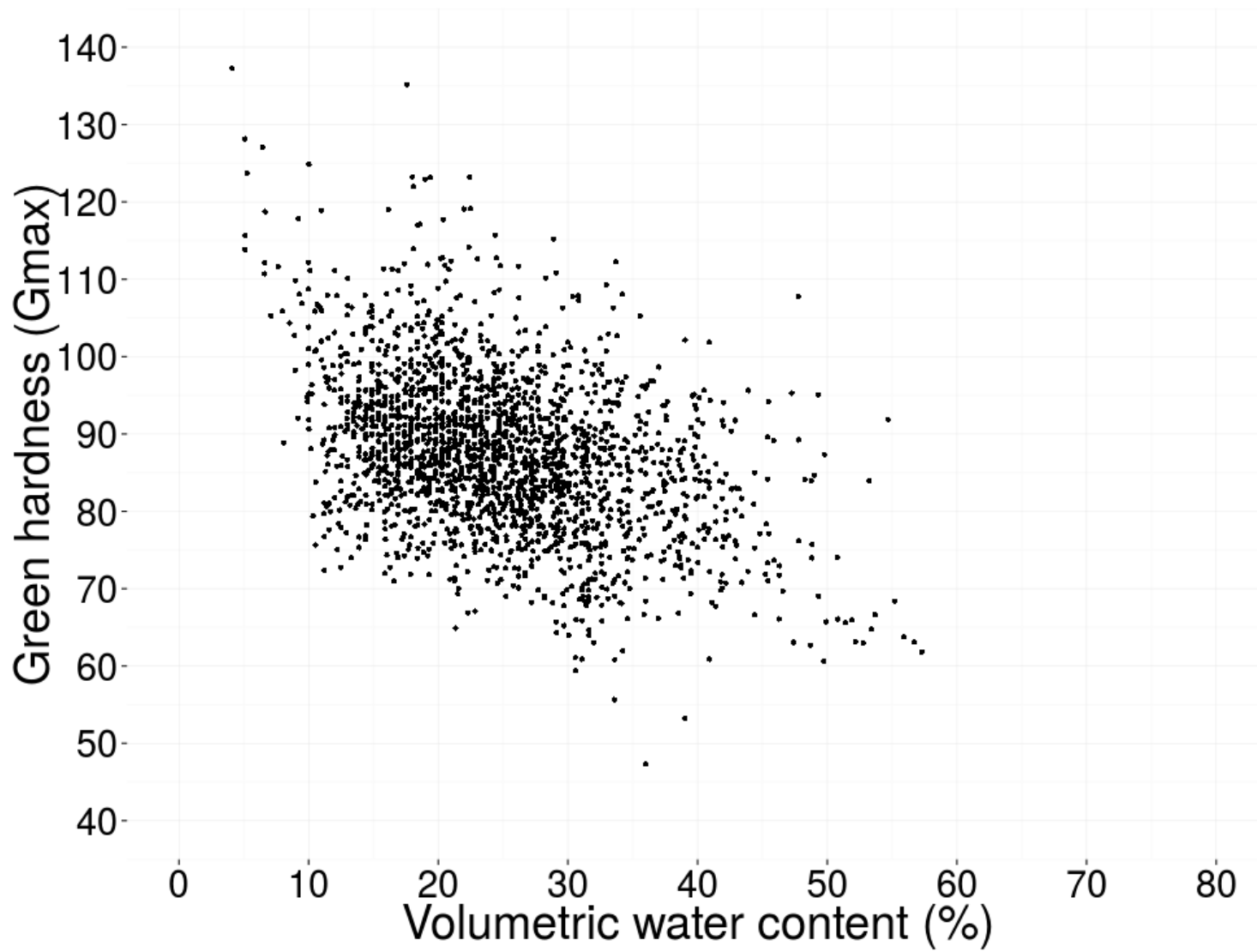
- Soil water content, by volume





•Clegg impact soil tester (Clegg hammer) to measure surface hardness.





How can we get the desired surfaces?



- Make standard adjustments based on science.
- Measure the results, and then make more adjustments.



- Adjust speed by modifying the ...
- Rolling
- Mowing height
- Growth rate
- Grass species



- Adjust soil water content by ...
- Irrigation
- Drainage
- Changing soil organic matter content

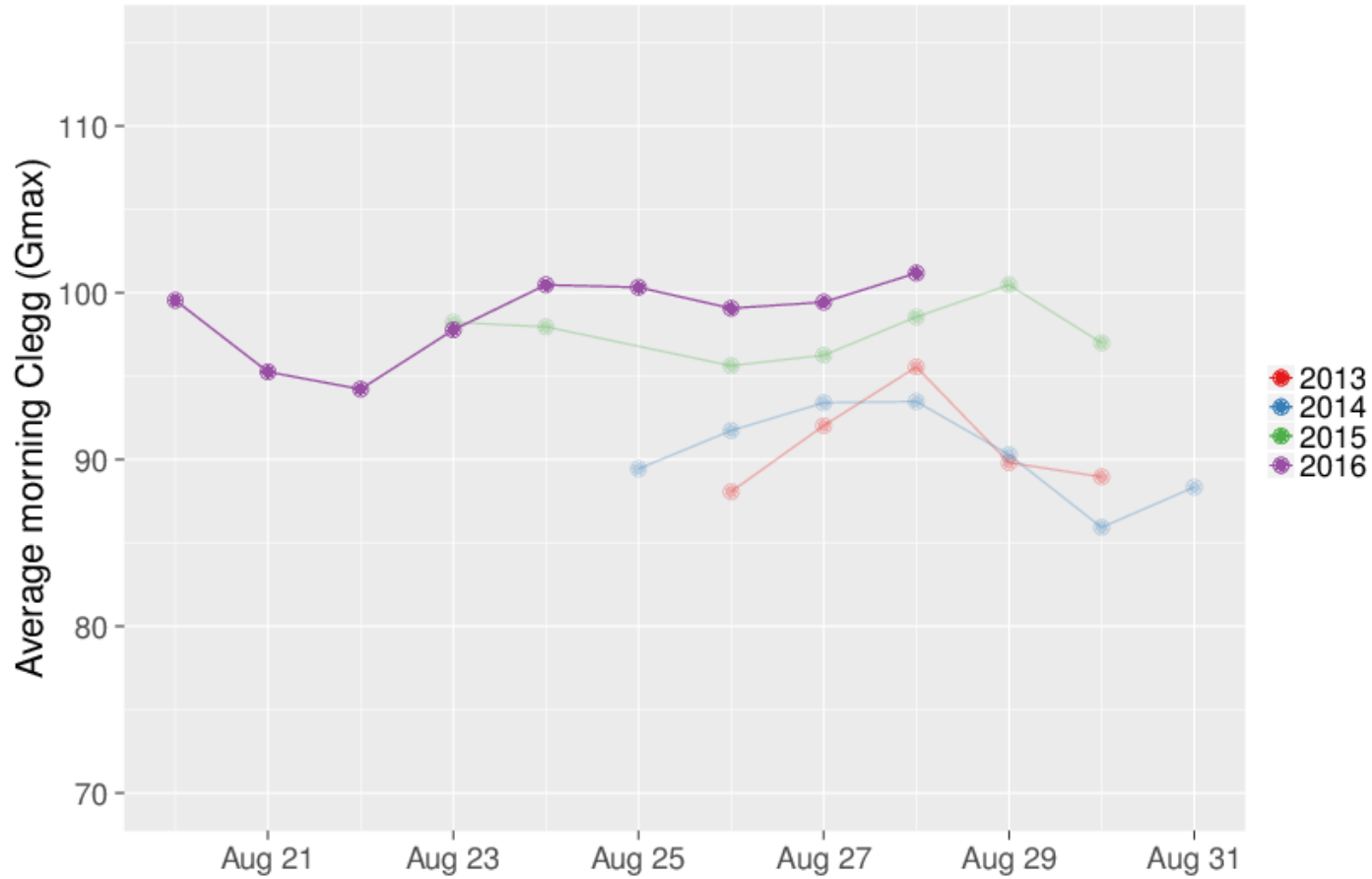


- Adjust surface hardness by ...
- Sand topdressing
- Organic matter management
- Reducing soil water content



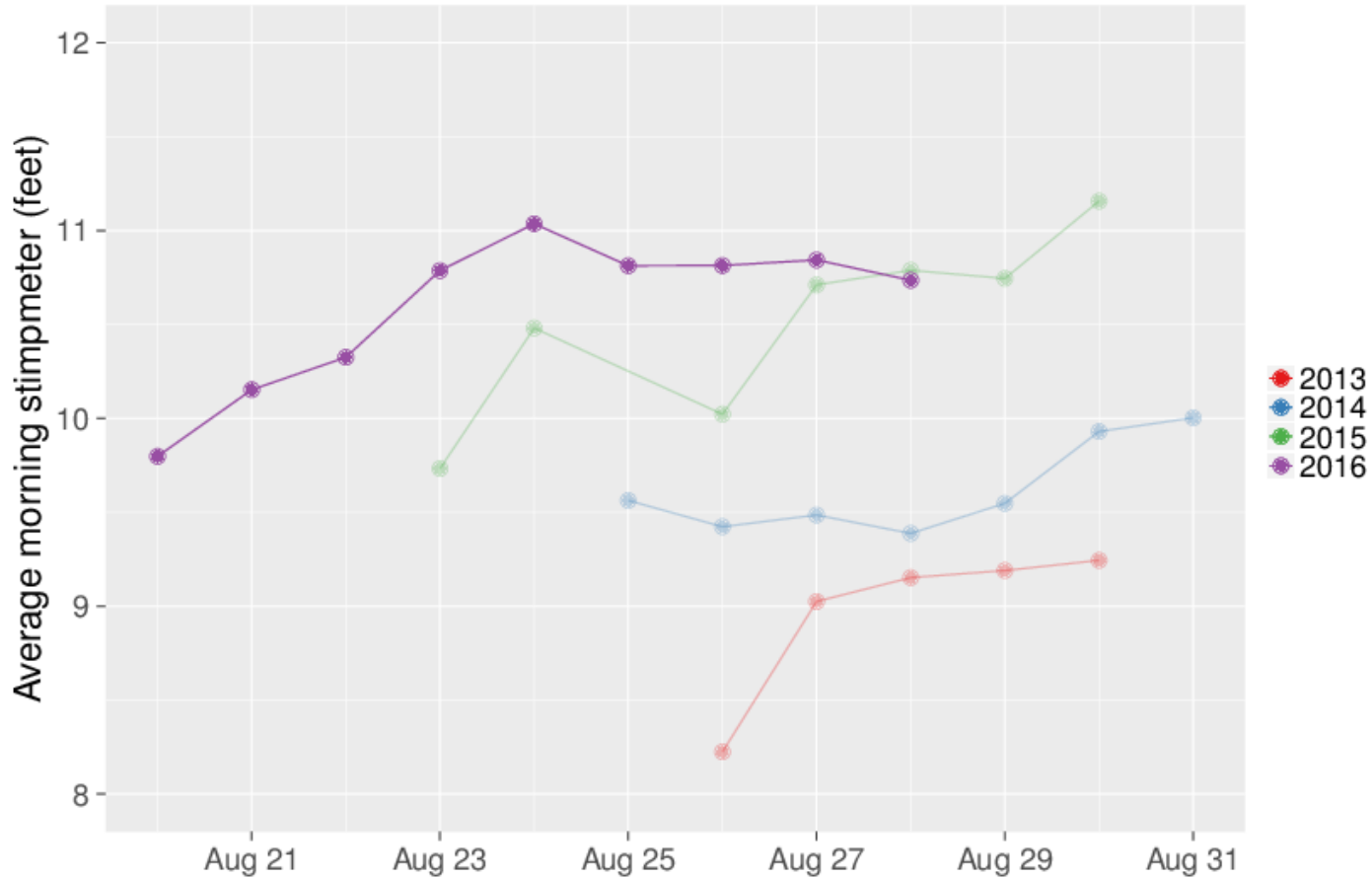
- Tournament data from KBC Augusta

KBC Augusta 2013 to 2016



- Surface hardness increased year after year

KBC Augusta 2013 to 2016



•Green speed and consistency increased year after year

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