CSR gets a makeover in forming the new CSR2 Productivity Index

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Over the years, the term CSR has become a household word among farmland owners and tenants in Iowa. CSR (corn suitability rating) is a soil productivity rating for Iowa soils that ranges from a low of 5 to a high of 100. It was introduced in 1971 by Thomas Fenton from Iowa State University and has gained in popularity ever since. CSR values are often used when figuring farmland indexes such as land values and cash rents. The index has also been correlated to crop yields although part of the intent of the index was to establish a system for equitable tax assessment, a way to level the playing field by measuring a soil's productivity and not how well the operator was doing yield-wise with the land. All Iowa counties presently use the CSR rating when figuring individual real estate property taxes.

People have asked, "Why did the CSR need to change? They were just getting comfortable with using the index." Some people think that things need to change periodically just because, but in the case of the CSR, there were some good reasons to make changes, including a desire for transparency and uniformity. Additionally, advances in soil-mapping techniques and the adoption of the national soil classification system during the past 50 years provided improved methods for calculating the CSR2 when compared to the original CSR formula. Expert judgment was applied to fine tune the CSR rates, but in some cases there were years or decades between the times the judgment was applied for a given county based on the frequency of county soil reviews. As a result, the publicly available data didn't correspond directly to the soil properties. Not only that, but technology had changed to the point that old soil characteristics used to calculate CSR might not exist and new characteristics with greater accuracy can now be used. The new CSR2 calculates the index on a statewide basis.

The new formula (CSR2=S-M-F-W-D+-EJ) is very transparent in how Iowa soils are rated but could also be applied to soils anywhere in the world. The calculation can be made using publicly available data. At the present time, Iowa is the only state that uses a CSR indexing system but that might change in the future. The letters in the formula stand for:

S	the taxonomic subgroup class of the soil series
M	the family particle size class
F	refers to the field conditions of a particular SMU (soil map unit)
W	the water holding capacity
D	a soil depth and erosion factor T
EJ	an expert judgment correction factor

The original CSR index had a large adjustment built in to allow for the difference in the climate as you moved across Iowa from the southeast to the northwest. In viewing the above items of the formula, you can see that there is not an adjustment for climate in the new CSR2. The western part of the state had a much drier climate when the original CSR index was developed using weather data from the 1950s. The climate has definitely changed in western and northern Iowa as evidenced by the last 20 years of weather data. The climate adjustment in the original CSR penalized soils with similar properties that were located in the north central, west central, west and northwest parts of the state. The CSR formula did not change as the climate changed, but landowners recognized the change and bid up land values in those parts of the state. Good yields encouraged higher land prices as did the development of ethanol plants that helped bid up the price for corn. Iowa State University land surveys now show that the majority of the high-value land in Iowa is in counties in the northwest part of the state.

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Another change is that the original CSR values for soils were calculated with adjustments made at the county level. As a result, soils could and sometimes did have different CSR levels in different counties. The CSR2 now assigns the same CSR to all soils of the same type.

The new CSR2 numbers are currently available on the Iowa State University ISPAID website, www.extension.iastate.edu/soils. The data is planned to be uploaded to the NRCS WebSoil Survey site, websoilsurvey.nrcs.usda.gov, around Oct. 1. All future upgrades to the CSR2 index system are scheduled to be introduced once a year, in October, on the Web Soil Survey site. The NRCS uses a continual improvement process in examining soils and will make changes to the CSR2 as needed in the future. The written county soil books will no longer be printed as the Web Soil Survey site will be the official soil information site for the NRCS.

Assessors will probably start using the new CSR2 numbers in 2015. It will take some time to rework the index on all the land in each county as different counties will move at different speeds through the process. You will need to check with your local county assessor to determine when the new number will be used to calculate property taxes.

What things, other than taxes, will be affected by the change from CSR to CSR2? People might see some changes in the CSR2 index number for their land and will need to calculate their CSR2 to see if it is different from the CSR index used previously. In general, the CSR2 index numbers will increase statewide, but individual land parcels may see an increase or decrease. The biggest difference will be seen as you move from the southeast part of Iowa toward the northwest corner because of the elimination of the adjustment for climate. The thing to keep in mind is that you need to keep the CSR and CSR2 separate when comparing properties. Compare properties using the new CSR2 index and do not mix up the comparison by using some of the old CSR calculations.

Is my land worth more or less now that the index has changed? It could be either or may not change at all. The new CSR2 will affect all soil types evenly so if your land is typical of the county, it should change as the county changes. If your land is unique for the area, the CSR2 may move in a different direction from the county average. Appraisers and assessors will use the new CSR2 system and its yearly updates to rate and compare land. What people are willing to pay for land depends on more factors than the CSR rating and those factors will not change with the switch to CSR2.

After much discussion about changing CSR to CSR2, there are some conclusions that can be drawn. CSR2 will be the new index of soil productivity in Iowa. It will be supported and updated yearly on the NRCS Web Soil Survey internet site. CSR numbers will still be around for people to compare how things have changed in the classification of the land productivity potential on their farm. The CSR2 will be used as an index in comparing many land-related items that used the CSR index in the past, but be careful not to mix the two indexes when using them as comparison indexes. Either use CSR2 or CSR but not a mixture. Over time, people will switch to and become comfortable with the new, improved, continually updated land productivity index.

More information

Web Soil Survey - websoilsurvey.nrcs.usda.gov
ISU Extension Soil and Land Use - www.extension.iastate.edu/soils