

Pyrrhotite testing update for CRCOG

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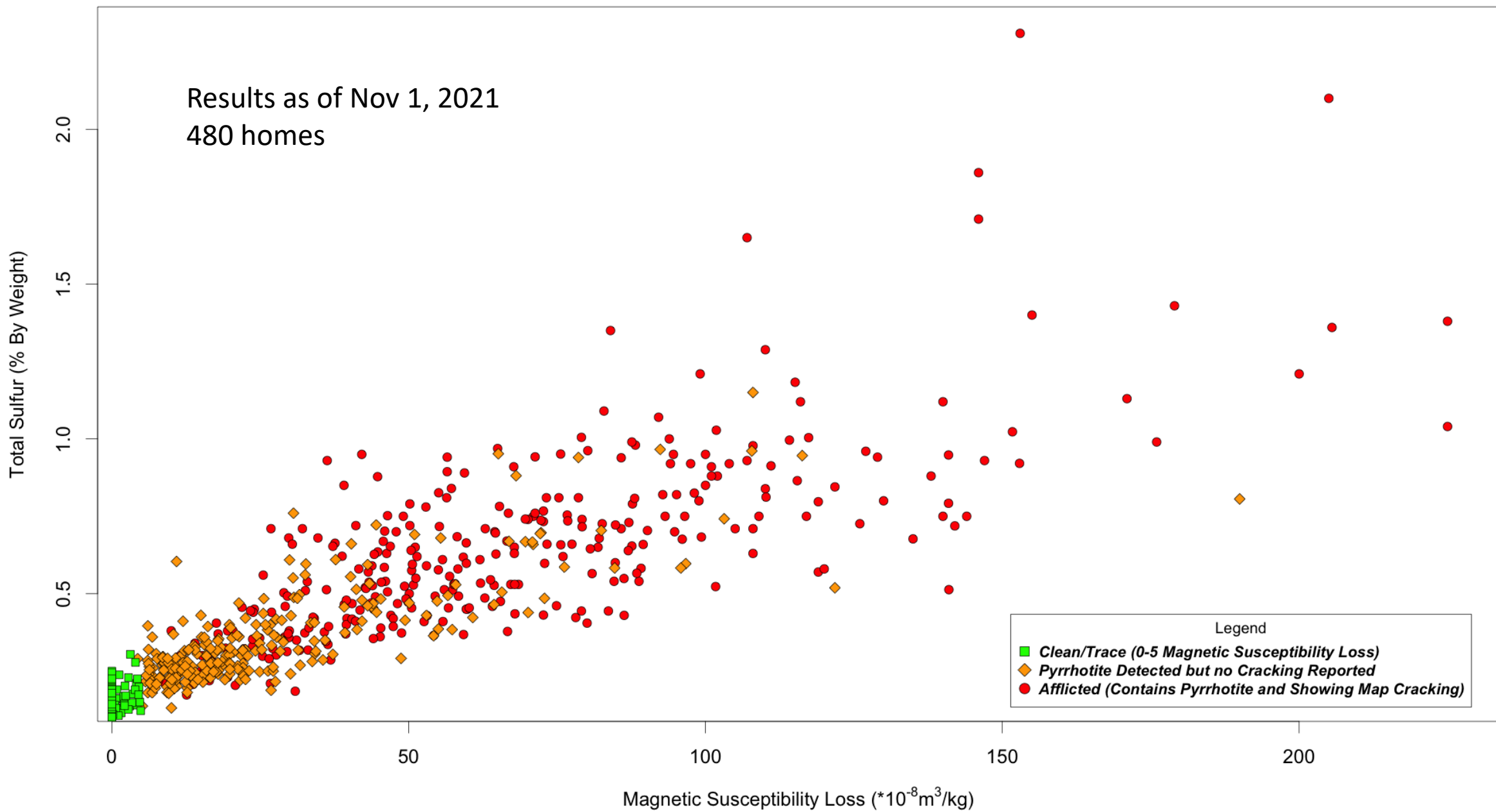
Two independent analyses for pyrrhotite testing

Magnetic Susceptibility Loss (Physical test)

- Highly sensitive and effective method to detect pyrrhotite. Important for trace level determination and min “safe” level.
- Can identify both hexagonal and monoclinic pyrrhotite phases

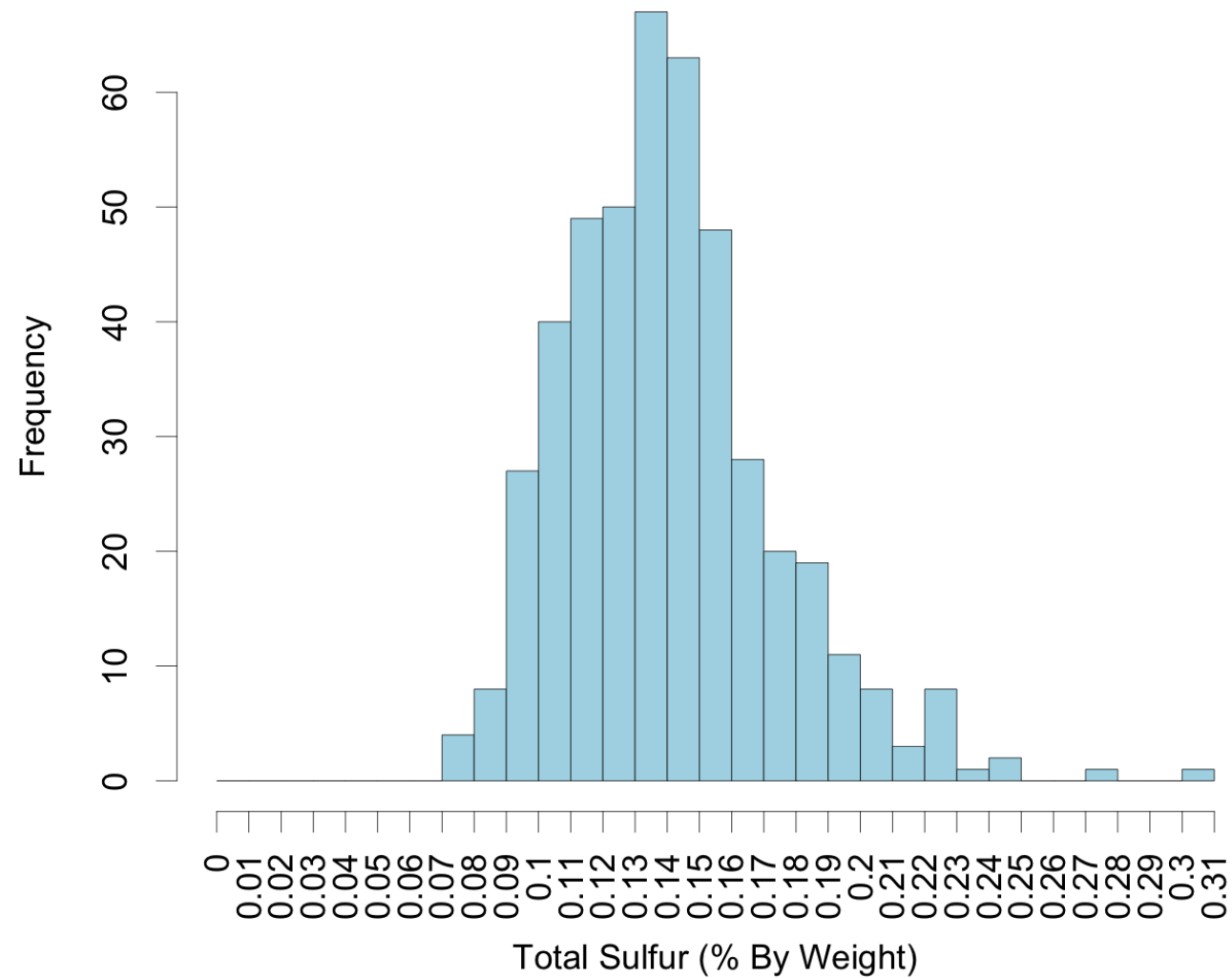
Total Sulfur (Chemical test)

- Elevated levels suggest pyrrhotite
- Can be used to calculate an estimate of pyrrhotite concentration in concrete



Trinity College Concrete Analysis

Distribution of Sulfur in Pyrrhotite-Free Basements

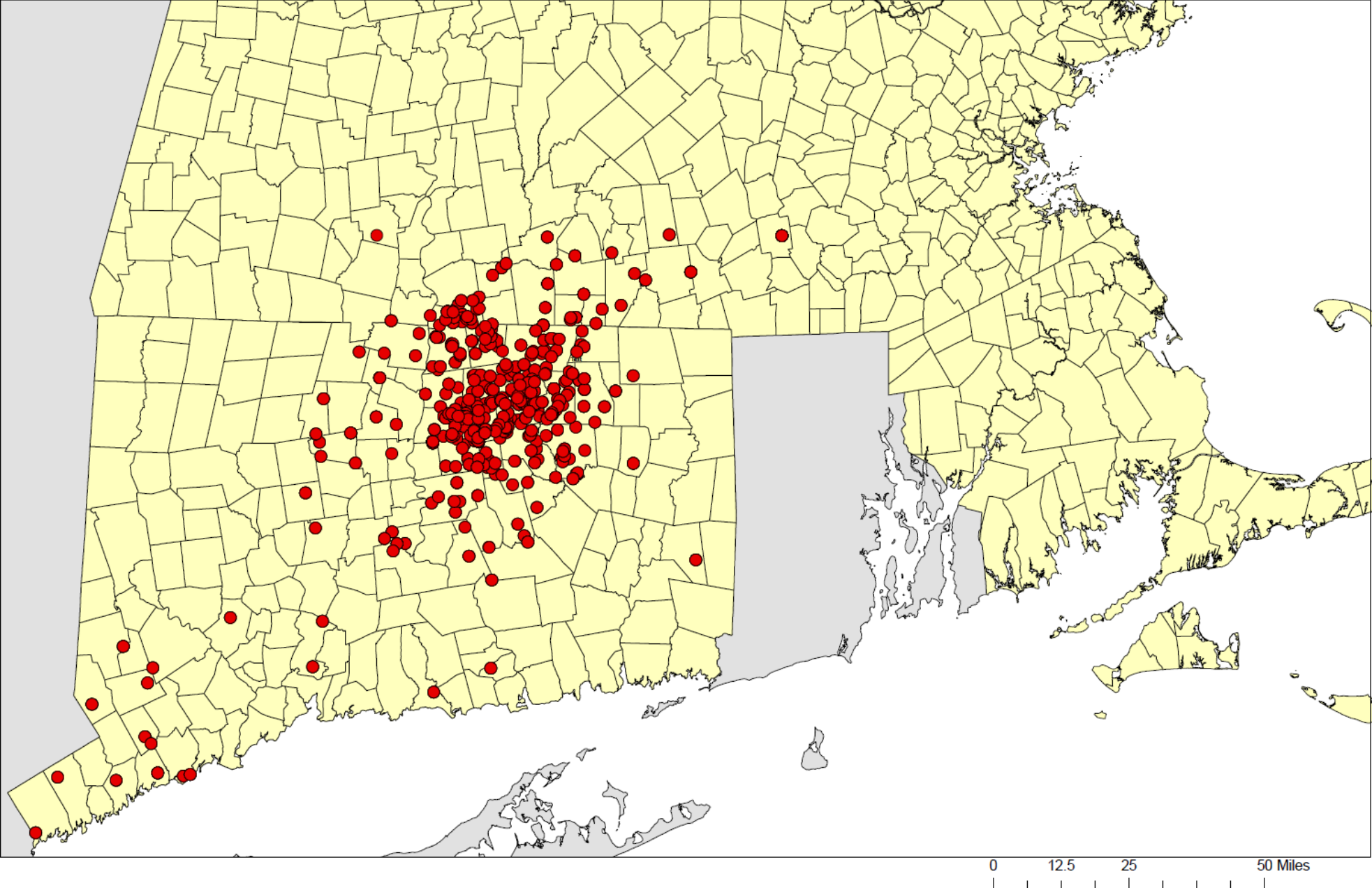


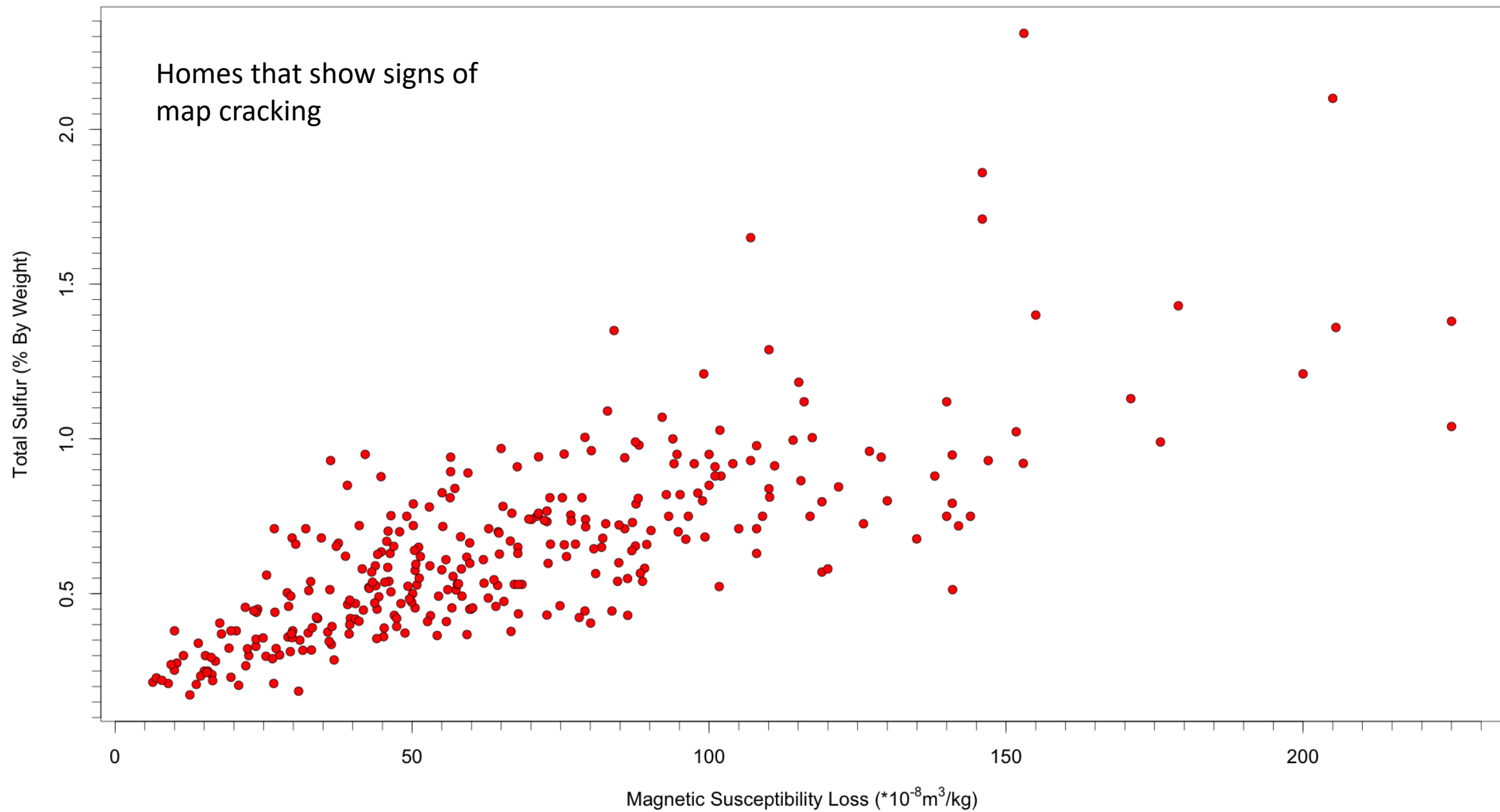
Descriptive Statistics	
N	= 458
Minimum Sulfur	= 0.072 %
Maximum Sulfur	= 0.304 %
Mean Sulfur	= 0.142 %

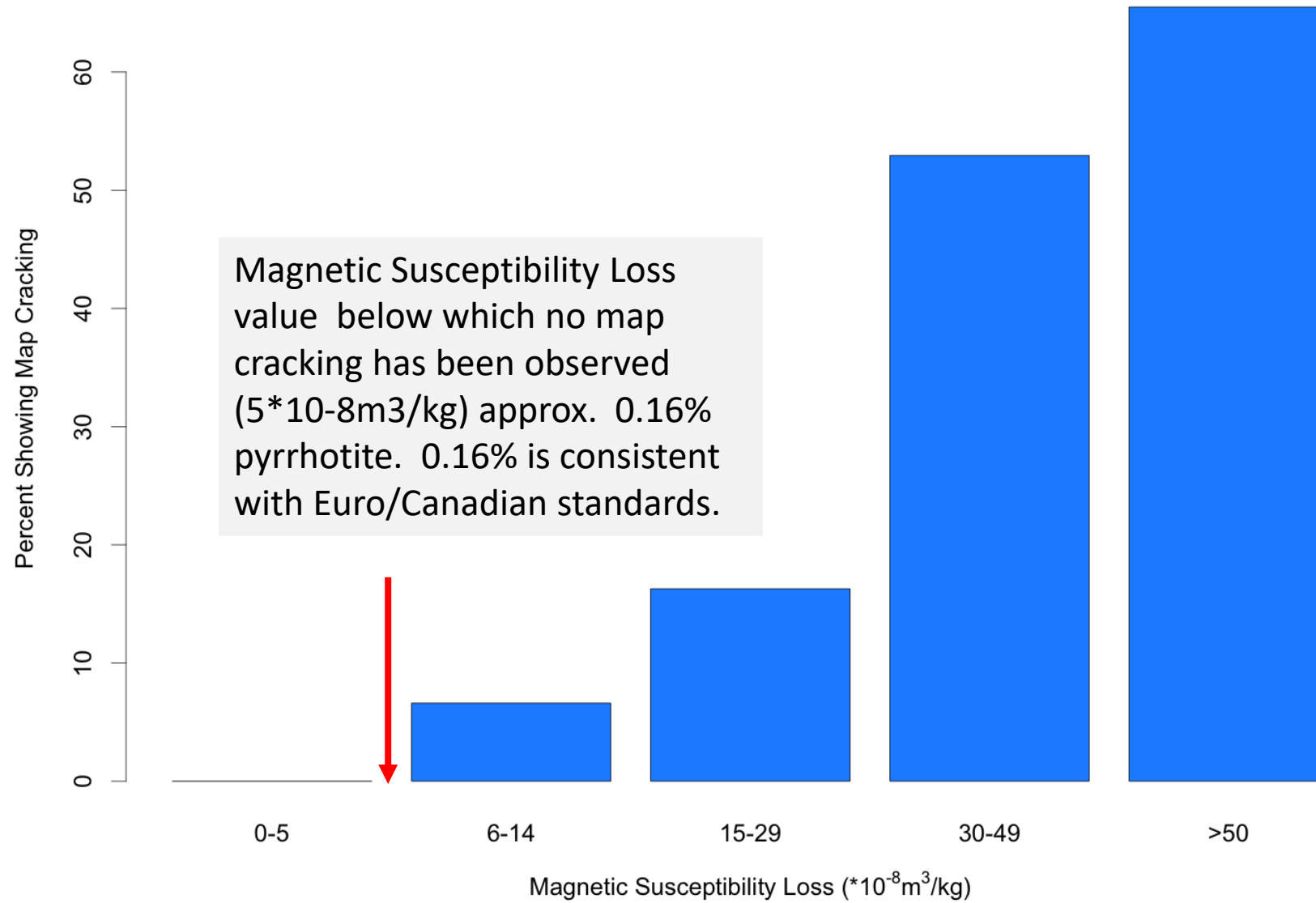
Concentration of sulfur in pyrrhotite free concrete has been consistent (mean of 0.14%) since we began testing.

Slight tail at high end suggests sulfur alone should never be used without an independent testing method to confirm the presence of pyrrhotite.

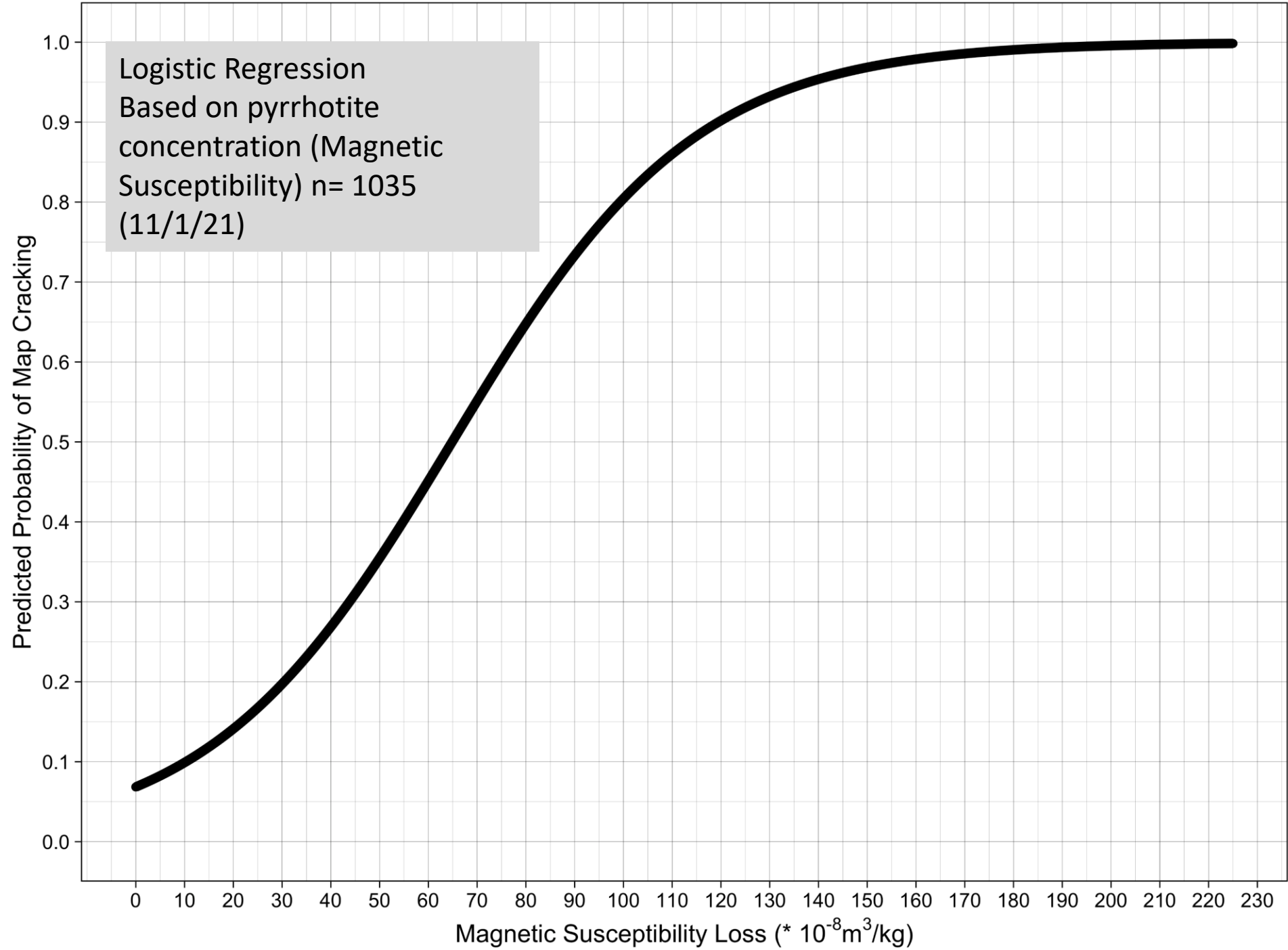
Trinity College concrete core sample locations to date (11/1/21)

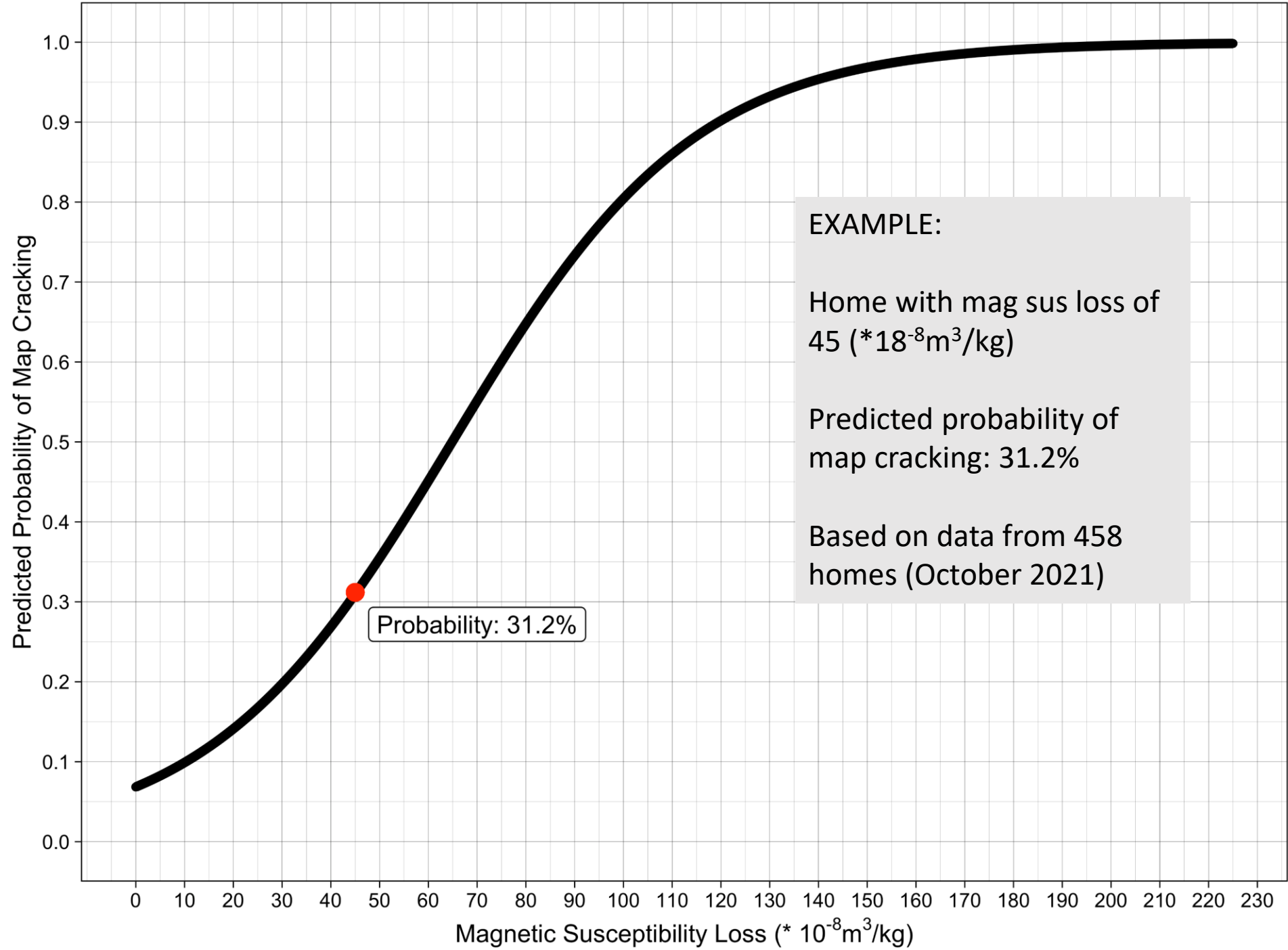






Descriptive Statistics
***N* = 588**





Conclusions

- Continue to test homes that need/want testing – testing demand has slowed in the current “seller market”. Homes are being sold without testing that may show signs of deterioration in the future.
- Have determined 0.16% pyrrhotite as possible “safe level” cutoff (below which no homes show signs of map cracking to date). Based on 481 homes tested to date.
- Developed a tool to assess statistical probability (risk) based on pyrrhotite concentration. Risk increases with concentration. Other parameters should still be investigated and may help improve this risk model.