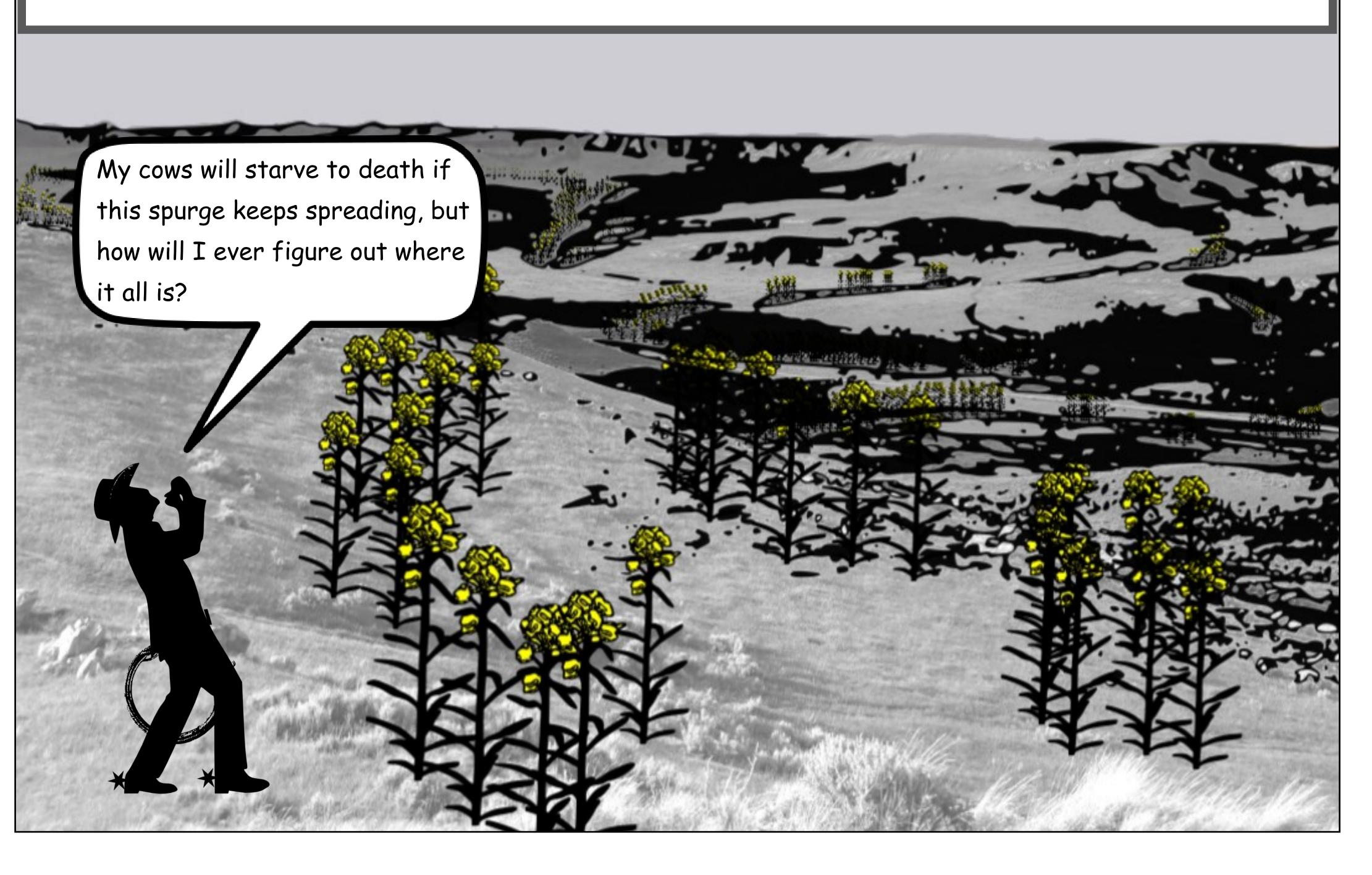
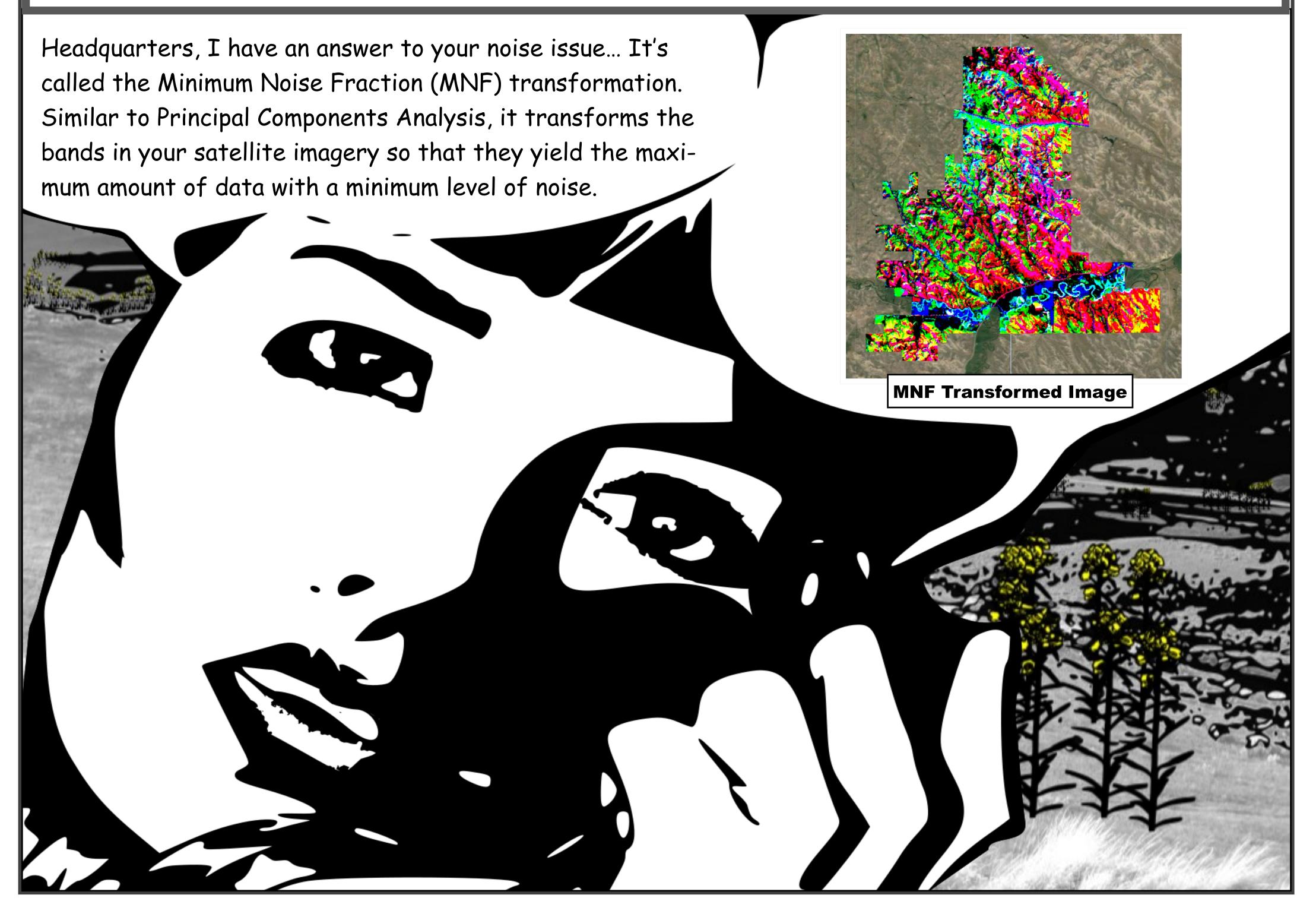


Rancher Bill is in a predicament: 90 km² of land, a team of only 6 ranchers, and fields full of leafy spurge —a noxious weed that displaces native grasses and reduces the forage for cattle. But how much more spurge is there? And where is it?



But just as the detectives began to make progress, they uncover an unexpected problem, one that plagues certain types of satellite data and renders analysis meaningless: Noise (roughly equivalent to the static on a old fashioned T.V. screen).



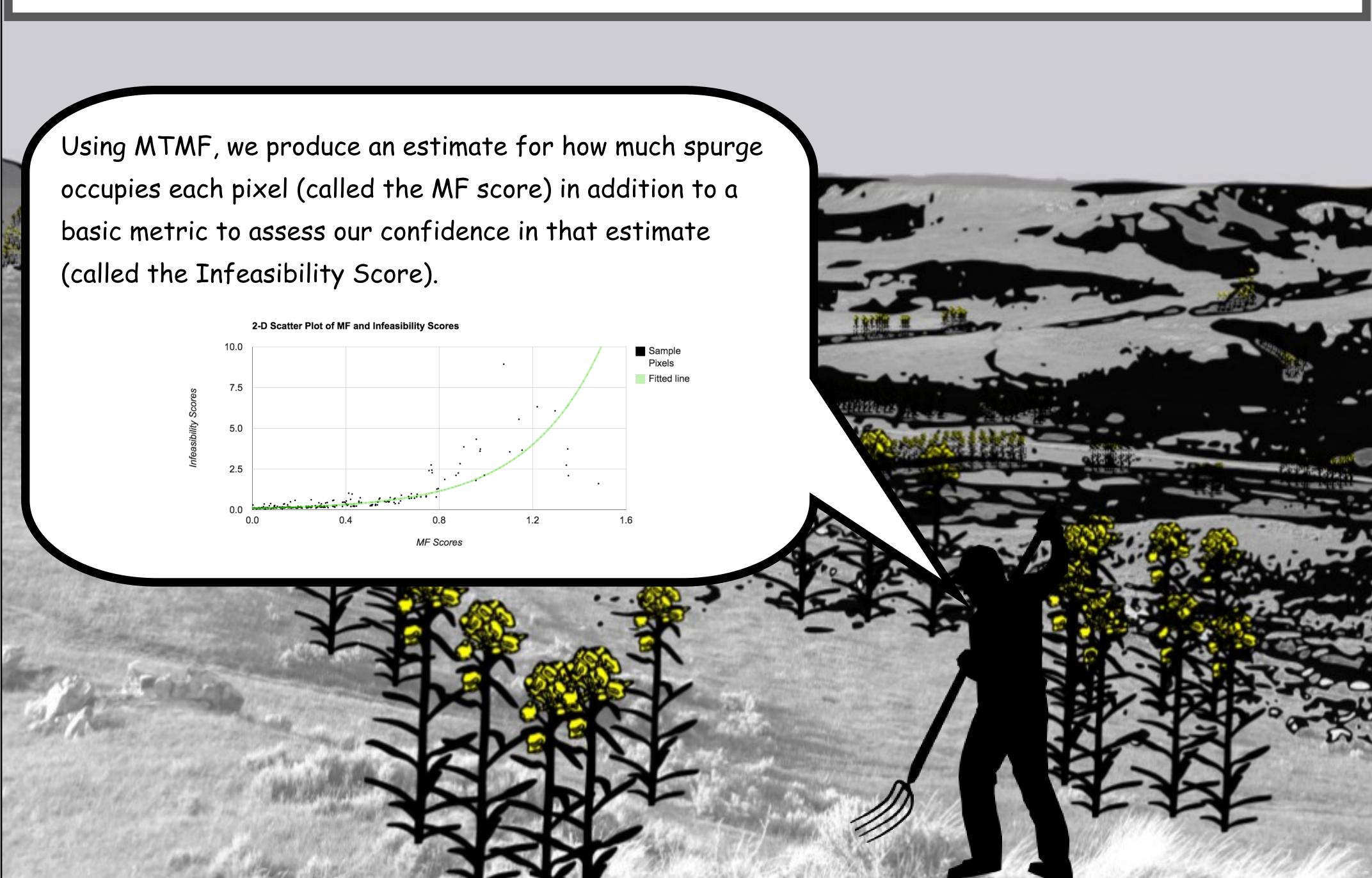
Cloud-based Remote Sensing for Land Managers: Developing Endmember based Classifications in Google Earth Engine

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> In search of solutions, he consults a nearby group of scientific detectives...

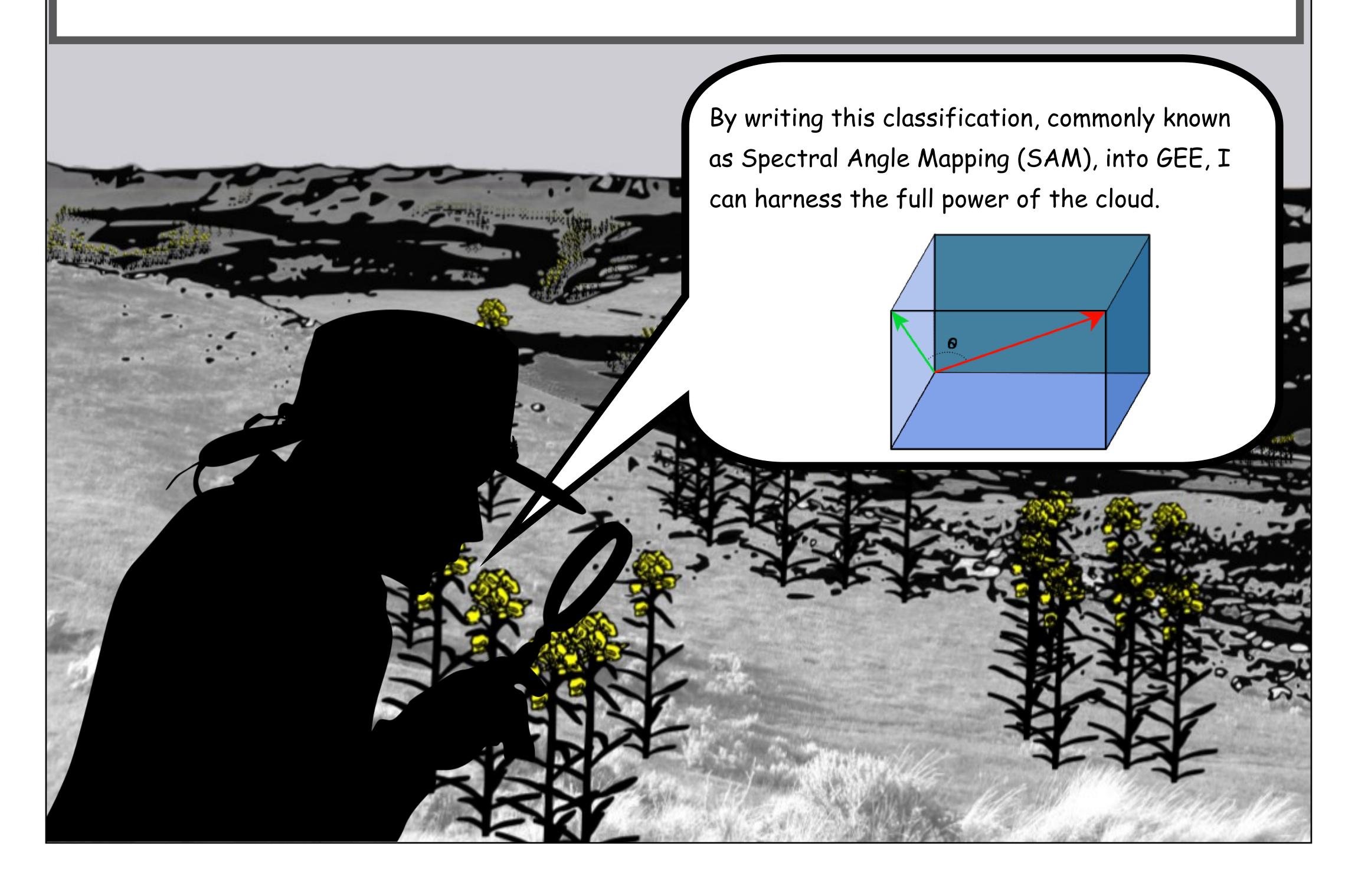
Google Earth Engine (GEE) is a new player in this game, with more computing power and collective satellite imagery than we've used before. It's cloud-based, which means you can use it anywhere you have an internet connection, and best of all: it's free.

With the noise problem solved, the detectives endeavored to conduct one last analysis using the cloud-based platform. Titled Mixture-Tuned Matched Filtering (MTMF), it harnesses the noise corrected data from the MNF transformation to offer them even greater detection capabilities!

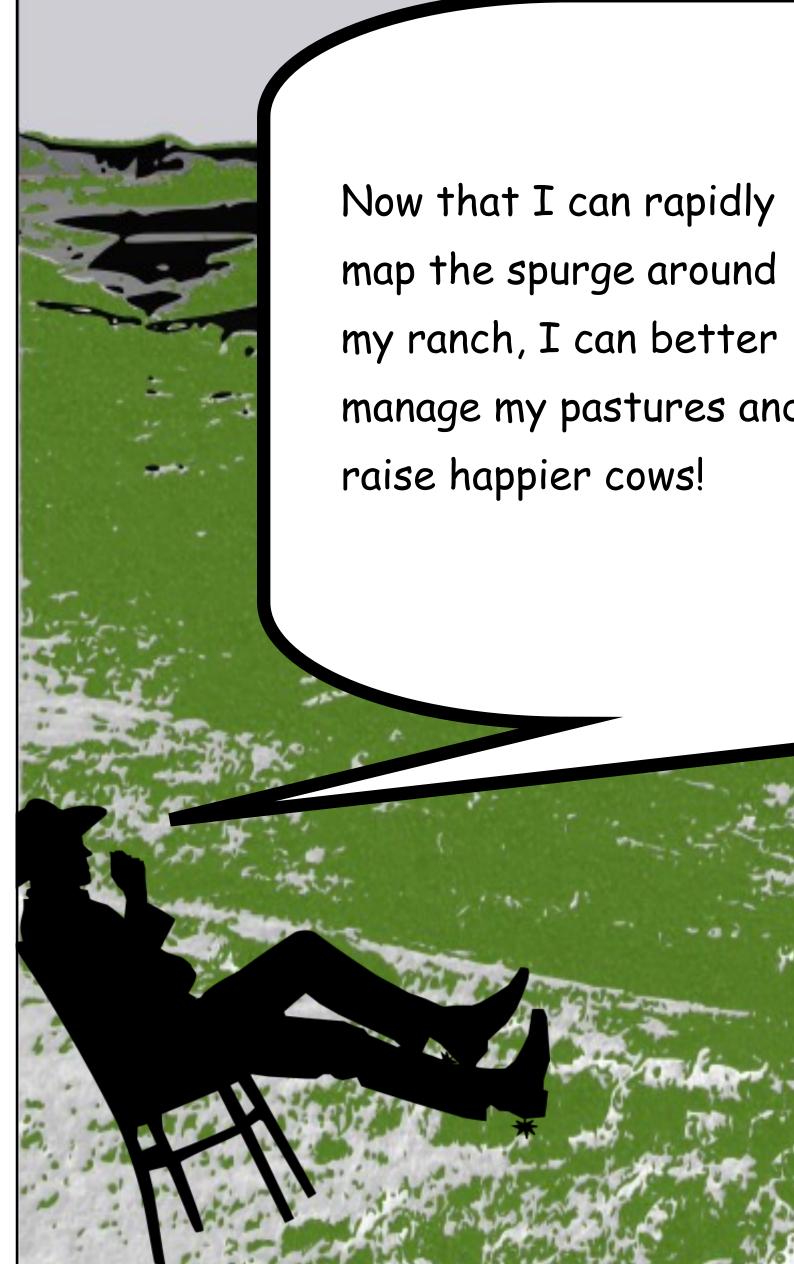


You're looking for leafy spurge? ALL : MAN Well, we'll first measure its spectral signature. We call that the - 1-1 - 17 'endmember', which makes it eas-0201 ier to classify images for only that landcover type and nothing else.

So, P.I. Oliver, head of the detective unit, proceeded by measuring the angular difference between each pixel of satellite imagery and the endmember leafy spurge. The smaller the angular difference, the more a pixel resembles the endmember, narrowing down the culprit's potential whereabouts...



After their final analysis, the team presents Rancher Bill with a set of maps detailing the most probable locations of spurge around his ranch. And with these cloud-based detection algorithms in place, they can continue to monitor spurge for years to come. Case solved!



manage my pastures and

