CWSI vs NDVI

Crop Water Stress Index | **Normalized Differential Vegetation Index**

Situation in a real time
See the current situation! You can se how "it works" and how to "improve it" in a real time. Intervention could be evaluated during a few hours.

Dead or live
NDVI is used to detect live green plant canopies in multispectral remote sensing data. So you can only quantify the photosynthetic capacity of plant canopies in that time.

Physiological process
You observe the actual crop's physiological process under given conditions at a given time. This is great, for example, for controlling of irrigation systems or locating vegetation infested by pests.

Not the process but the result
You observe the long-term effects of stress factors and environmental conditions on the state of vegetation but it is often very difficult to identify the causes.

Before it's too late!
You can take actions before the crops die, ie when the stress is already occurring but the process is still reversible. The effectiveness of the intervention can be evaluated immediately after applying it.

It is too late!
It is very difficult to make the right intervention as you cannot monitor the response quickly enough after applying the intervention. The NDVI shows the impact and result after longer period of time.
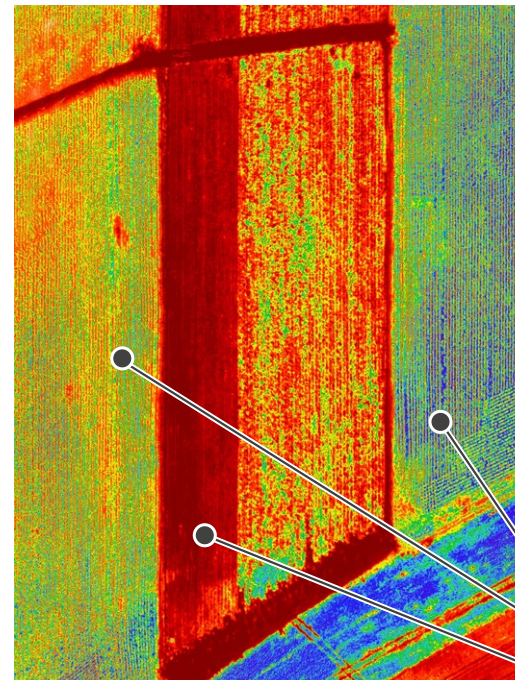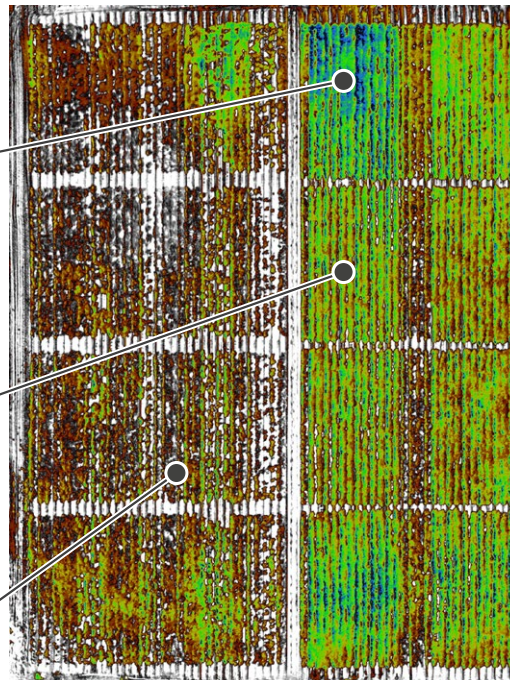

Water wasting
CWSI is very low. Water could be better distributed over the land or saved. No drought effect.
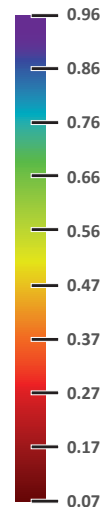
Under the correct irrigation
The water stress level corresponds to the current situation (sunny day, no precipitation). Irrigation helps prevent crop damage and works properly.

High level of stress
The irrigation system is not functioning properly and part of the crop is wilting. High level of water stress.

NDVI

0.96
0.86
0.76
0.66
0.56
0.47
0.37
0.27
0.17
0.07

Index range 0.33 - 1
Crops are feeling better or worse, but it is not clear from the NDVI map why and whether they are currently under stress. Any corrective action to improve their condition will not be reflected quickly in the NDVI picture and will be difficult to evaluate.

Index range 0 - 0.33
Crop has already died and it is impossible to tell from the picture how this happened and what intervention would help. Corrective intervention does not exist.

Healthy
Moderately Healthy
Dead crop