PRODUCT INSIGHT

FieldNET Advisor™

The smartest solution in irrigation.

New 2018 Features.

Product Family:	FieldNET™
Product Line:	FieldNET Advisor
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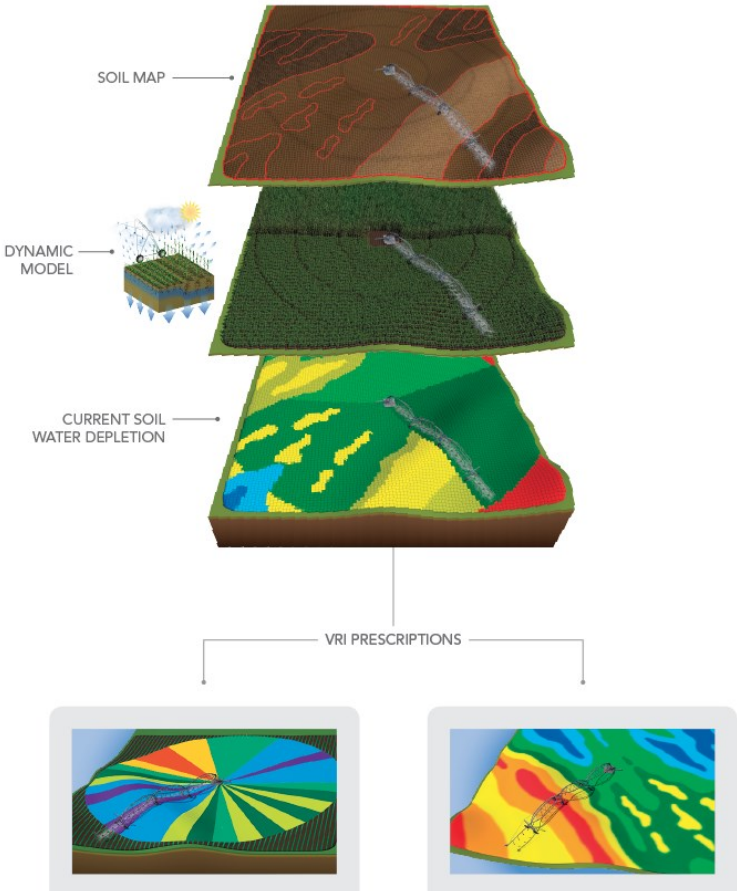
FieldNET Advisor

FieldNET™ by Lindsay® introduced the award-winning FieldNET Advisor in the spring of 2017 (*see Product Insight FN-04-26-17 for more complete information on the initial release*). This revolutionary irrigation management solution was designed to provide growers with simple, science-based irrigation recommendations to enable faster, better-informed irrigation management decisions.

As Lindsay continues to grow its leadership in the area of precision irrigation, we are building new features to further enhance FieldNET's technology to help growers optimize their operations and make the most of every drop of water. FieldNET Advisor brings new features in 2018 to improve the user experience and help growers be even more precise as they decide when, where and how much to irrigate.



What's New?

- Additional 19 crop types, expanding the product to more regions and customers
- John Deere Operations Center integration leverages existing customer data
- Access through FieldNET mobile apps for the ultimate irrigation management solution that is with the grower at all times
- Twenty four (24) new and enhanced features that make FieldNET Advisor even easier-to-use, more productive, more flexible, and more information that keeps the user better-informed to make quality irrigation management decisions.

What's Covered in this Product Insight

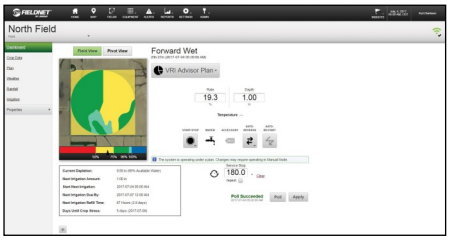
Overview of the innovative FieldNET Advisor
Why FieldNET Advisor differentiates FieldNET from all other products
A significant list of new crops, features and enhancements are reviewed
New platform integrations and partnerships are expanding FieldNET's productivity
How the mobile Apps help growers simplify operations
FieldNET Advisor customization options that help more growers optimize irrigation decision

FieldNET Advisor is Four Powerful Tools in One

FieldNET Advisor streamlines irrigation management and features all of your key information in one place. Fully integrated remote irrigation monitoring and control means that you can stay informed with customized alerts and take immediate action anywhere.

1. Irrigation Advisor™

The core of FieldNET Advisor, this tool compiles critical inputs related to the soil water balance (e.g., crop water usage, effective rainfall, actual as-applied irrigation history, and past deep percolation) to track the current soil water depletion and forecast the upcoming crop water requirements across your entire field. It's like having thousands of virtual soil moisture sensors throughout the field.

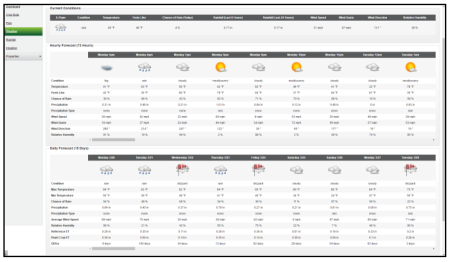


2. Crop Advisor™

Dynamic, proprietary crop growth models track the development of each hybrid, including development stages and root growth, and continuously update the crop's forecasted maturity date. This tool also provides an estimate of any yield loss to date due to water stress—plus a projection of potential yield loss through crop maturity if no additional irrigation is applied.

3. Weather Advisor™

A critical input is weather data, which is why the Weather Advisor uses hyper-local, hyper-accurate field-specific weather data, including hourly data for the current season-to-date plus a 15-day hourly forecast and historical norms to project the remainder of the season. This tool also provides the ability to set customized weather alerts, so you're aware of changing conditions and are able to react quickly. For fields where an optional Growsmart weather station is installed, the data can be seamlessly fed into FieldNET Advisor as well.



4. Variable Rate Irrigation (VRI) Advisor™

Gone are the days of using the same plan throughout the season, as VRI Advisor provides continuously updated water prescriptions based on the dynamically changing field conditions. This is accomplished by leveraging the high resolution soil water depletion data across the field to generate VRI prescriptions that are dynamically optimized in real time to apply the required amount of water across every zone in the field. VRI Advisor can create both Precision VRI and basic sector VRI plans.

How does FieldNET Advisor work?

FieldNET Advisor uses proven soil-water balance irrigation scheduling concepts and methods (often referred to as the "checkbook method") to generate information that will help growers make better, more informed irrigation decisions.

Prior to this innovative solution, in order to accurately determine when, where, and how much to irrigate, growers were burdened with manually tracking the soil-water balance variables related to their fields or were frustrated by the high cost and ongoing maintenance required by in-field sensors and probes. FieldNET Advisor overcomes these issues by automating and simplifying the task of providing growers data-based irrigation management recommendations.

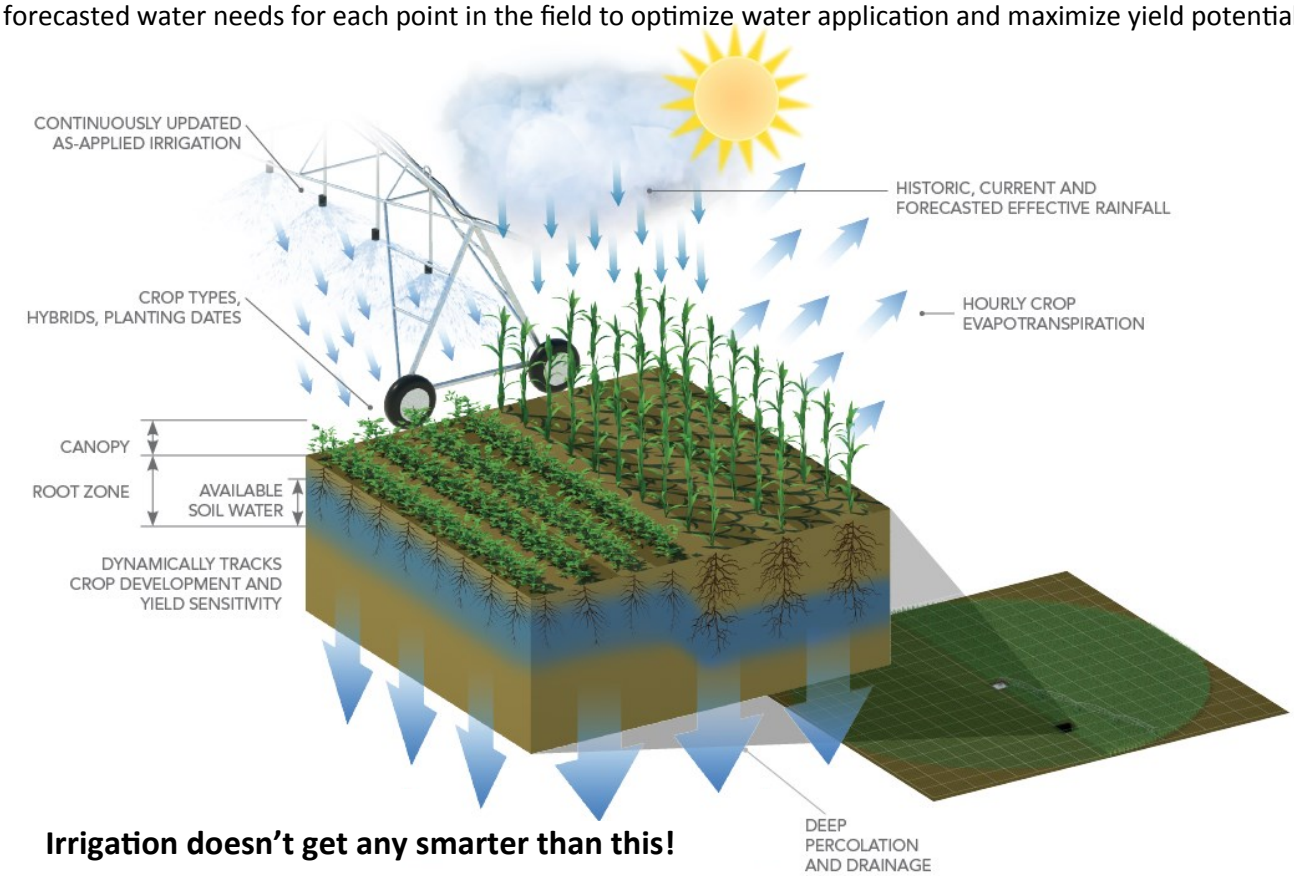
Here's how it works:

1. Upload or draw the crop zones on a map and enter the crop type, hybrid, and planting date for each zone.

2. FieldNET Advisor automatically combines the crop data with the field's boundary, soil maps, hyper-local weather data, and the as-applied irrigation data to create a high-resolution grid of your field.

3. For each grid point, FieldNET Advisor tracks and updates the crop canopy development and root depth to continuously monitor the water available to the crop, forecast the crop's future water needs, and predict crop stress.

4. FieldNET Advisor then generates an irrigation recommendation and VRI prescription (aka, "plan") based on the forecasted water needs for each point in the field to optimize water application and maximize yield potential.



Irrigation doesn't get any smarter than this!

FieldNET Advisor simplifies irrigation decisions for growers. Gone are the days of having to manually track a crop's development and make complex calculations to know its daily water usage. No longer will growers be frustrated trying to use multiple, unintegrated tools to track their crops' water needs and manage their irrigation equipment. For growers who have historically relied exclusively on visual inspection of their crops or even less scientific methods to make irrigation decisions, finally there is a tool that will deliver the information they need to make better-informed decisions without the headache and cost of installing and maintaining additional sensors in the field. FieldNET Advisor removes the guesswork out of irrigation management by advising:

- ☑ WHEN
- ☑ WHERE
- ☑ HOW MUCH

FieldNET Advisor Exclusive Features

- Cloud-based integration with John Deere Operations Center
- Daily VRI prescriptions
- Yield loss calculator
- Crop specific daily water usage
- Crop growth modeling that can be customized
- Customer owns their data

Crops Supported

Initial Crops—2017

- Corn
- Soybeans

Crops Added in 2018

- Alfalfa (First Year)
- Alfalfa (Established)
- Barley
- Corn Silage
- Cotton
- Dry Edible Beans (Bush type)
- Dry Edible Beans (Vine type)
- Peanuts
- Popcorn
- Potatoes
- Sorghum (Grain)
- Sorghum (Silage)
- Sugar Beets
- Sugarcane (Plant Cane)
- Sugarcane (Ratoon Cane)
- Sweet Corn
- Wheat (Spring)
- Wheat (Winter)
- "Unmanaged crop type"

DTN®

Accurate, local weather is a critical variable in the recommendations FieldNET Advisor calculates. FieldNET leverages the extremely high-quality field-centric weather data provided by DTN.

John Deere Operations Center

Integration with the John Deere Operations gives growers increased access to farm irrigation data. Growers that use both the John Deere Operation Center and FieldNET platforms will improve irrigation precision and productivity.

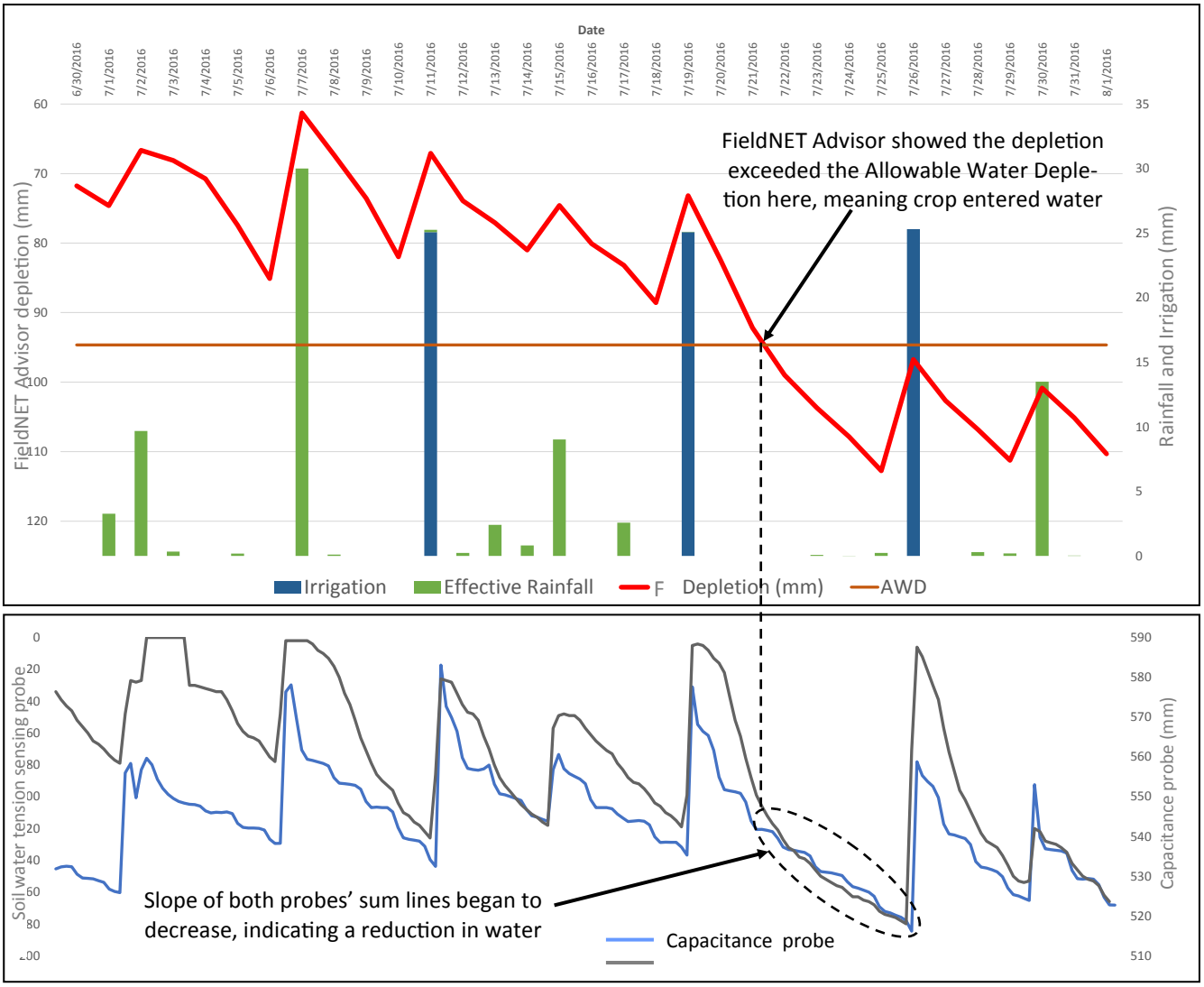
It's simple, here is how growers access their existing John Deere Operations Center data:

1. Go to the Crop Zones page
2. Click the import button and select John Deere Operations Center
3. The user will be directed to their John Deere "Consent to Use" page to authenticate access
4. The grower can then import their field boundary, crop zone data, and planting data

Global Partnership with Farmers Edge

Lindsay Corp and Farmers Edge are working towards collaboration of additional digital agronomic tools. The collaboration with FieldNET will provide growers with simple solutions to easily access field-centric data and provide more insights to make informed decisions and get the most out of every acre. **Stay tuned for more details on the syncing of these two platforms.**

FieldNET Advisor soil water depletion data compared to soil moisture probe data

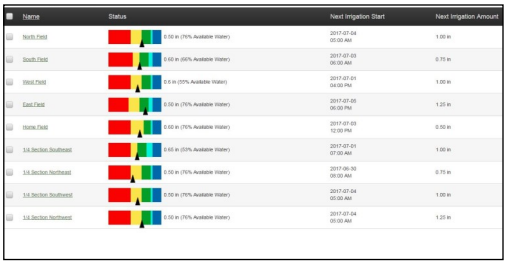


As shown in the above data from a past field trial of FieldNET Advisor, the soil water depletion level tracked by FieldNET Advisor and the data received from the two soil moisture probes in the field line up nearly identically.

Further, on the date when FieldNET Advisor predicted the crop had entered water stress (i.e., the red "FN Depletion" line dropped below the Allowable Water Depletion, "AWD" line), the data from the two soil moisture probes also indicated the crop's daily water uptake had decreased significantly, shown by a reduction in the daily water usage, which confirms the crop had entered water stress on the predicted date.

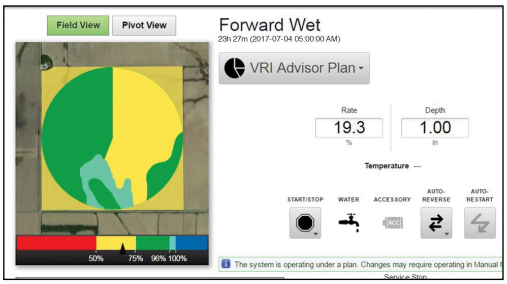
1. Removes the guesswork from irrigation

- When, where, and how much water to apply
- Based on 40+ years of proven crop science
- Uses technology to make informed decisions easy — it automatically collects the critical inputs and performs the complex calculations



2. Enables growers to take immediate action

- Everything growers need is in one place — with FieldNET's integrated irrigation control functionality, irrigation decisions can be directly put into action from anywhere
- Monitor your irrigation progress and results remotely

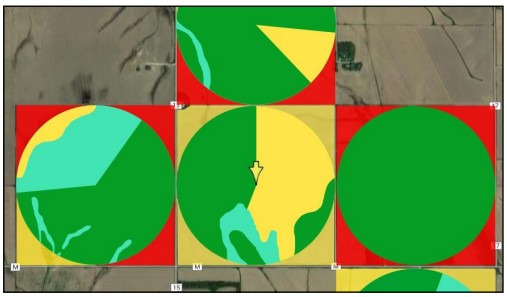


3. Captures the full potential of variable rate irrigation

- Greatly simplifies both basic and Precision VRI
- Auto-generated VRI prescriptions are continuously optimized and dynamically updated to account for varying soils, crop water usage, weather, and applied irrigation

4. Shows high-resolution map of depletion across fields

- In a single map view, growers can see the soil-water depletion across all their fields and quickly identify any areas of concern
- Embedded pop-up toolbar enables grower to quickly put irrigation decisions into action



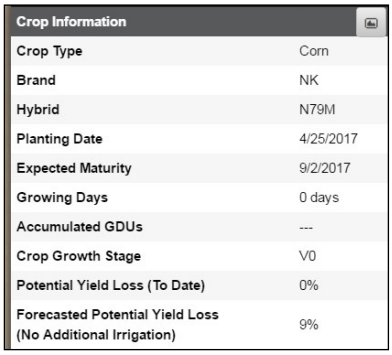
5. Provides summary of critical information in one place

- Field dashboard view provides a summary of the most critical information in one page, including current maximum depletion in the field, date next irrigation must be stared, and amount of irrigation required

Current Depletion:	0.68 in (66% Available Water)
Next Irrigation Amount:	1.00 in
Start Next Irrigation:	2017-07-04 05:00 AM
Next Irrigation Due By:	2017-07-07 12:00 AM
Next Irrigation Refill Time:	67 Hours (2.8 days)
Days Until Crop Stress:	5 days (2017-07-09)

6. Continuously adjusts for yield sensitivity

- Dynamically accounts for changes in the crop's yield sensitivity to water stress throughout crop's development
- Provides season-to-date yield impact of past stress events and projected yield impact with no additional irrigation
- Shows estimated yield loss in unirrigated areas



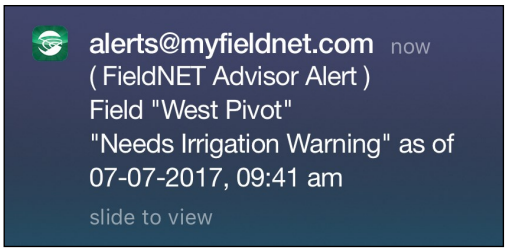
Crop Information	
Crop Type	Corn
Brand	NK
Hybrid	N79M
Planting Date	4/25/2017
Expected Maturity	9/2/2017
Growing Days	0 days
Accumulated GDUs	---
Crop Growth Stage	V0
Potential Yield Loss (To Date)	0%
Forecasted Potential Yield Loss (No Additional Irrigation)	9%

7. Provides valuable, grower-focused weather data

- Best available hyper-local, hyper-accurate current conditions, hourly forecast, and 15-day daily forecast
- Provides weather info growers need, including crop-specific daily ET (rather than just a reference ET), daily GDUs, wind speed and peak gusts speed, forecasted likelihood of precipitation and forecasted amount and type, etc.

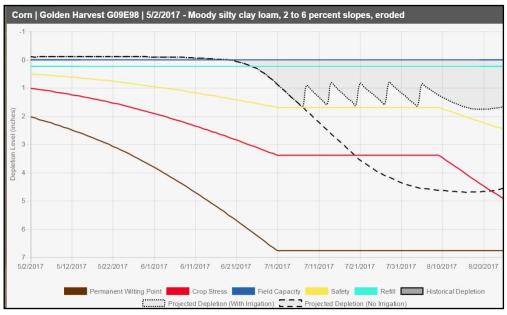
8. Sends customizable alerts to stay informed

- Provides irrigation and crop stress warnings to ensure growers can act before water stress events occur
- Growers can set up customized weather alerts (e.g., wind speed, hail, rainfall, frost, etc.)



9. Leverages dynamic, proprietary crop growth models

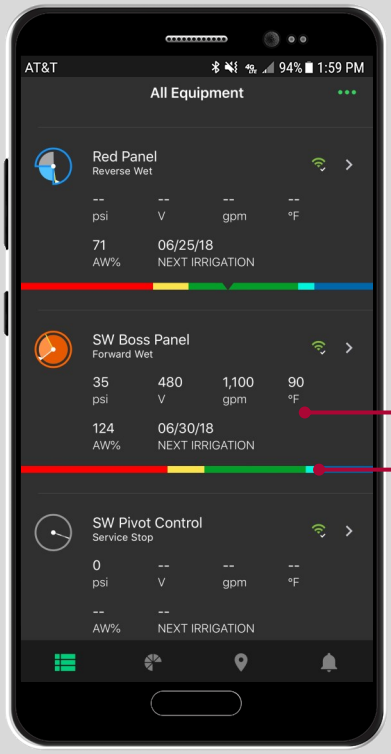
- Model dynamically tracks the crop development stage and root growth/depth
- Allows for manual adjustments when needed (e.g., if hail storm delays the crop's development)



10. Delivers the potential of weather stations

- Data from Growsmart weather stations or add-on rain buckets can be linked with FieldNET Advisor for any field where one is installed
- Uses the continuously updated crop models to calculate the actual ET for the specific crops (whereas most weather stations are only capable of providing a reference ET)

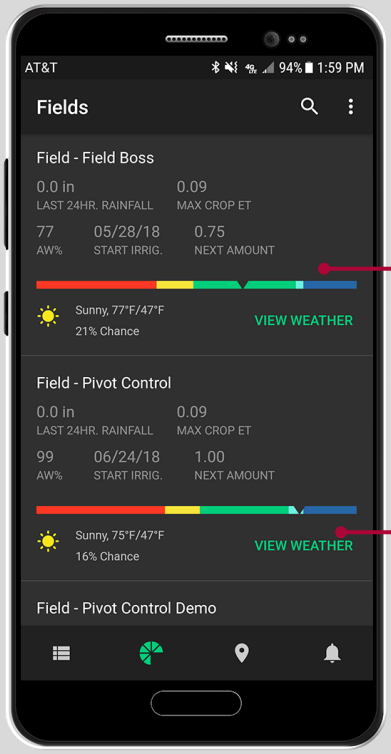
Pivot List



Quick status view of pivots, laterals, etc. Tap on the pivot information to open the pivot dashboard.

Soil water depletion line grouped with each pivot

Field List



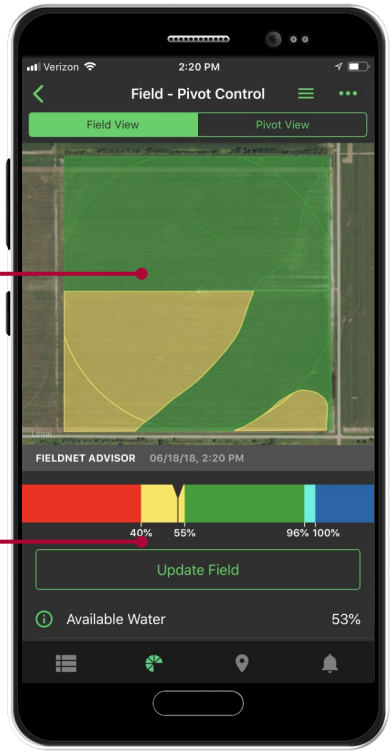
View the current soil water depletion and key irrigation scheduling information quickly. Tap above the depletion line to open the field dashboard

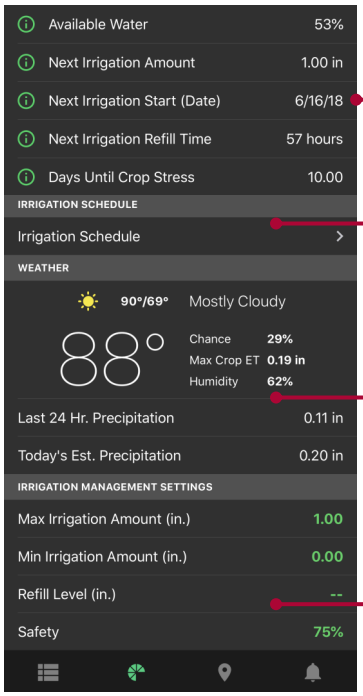
View current weather with a link to full weather details and forecasts. Tap this link to view weather.

Field Dashboard

Graphically view the fields depletion by managed crop zone

View soil water depletion





Quickly view FieldNET Advisors recommendation

Links to the irrigation scheduling graph provides decision support

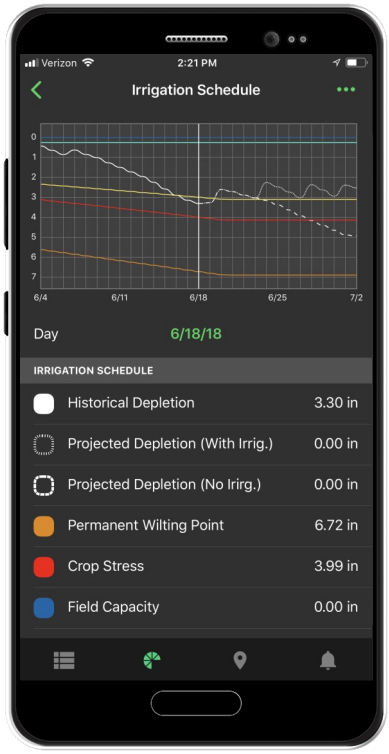
Review important weather inputs

Manage and customize key constraints for optimization

Irrigation Schedule

The irrigation schedule page provides a graph with the following;

- Two (2) weeks of historical information and trending
- A vertical line on the graph showing today's snapshot with actual values in a color coded table below the graph
- And a two (2) week forecast as projected by the current FieldNET Advisor model

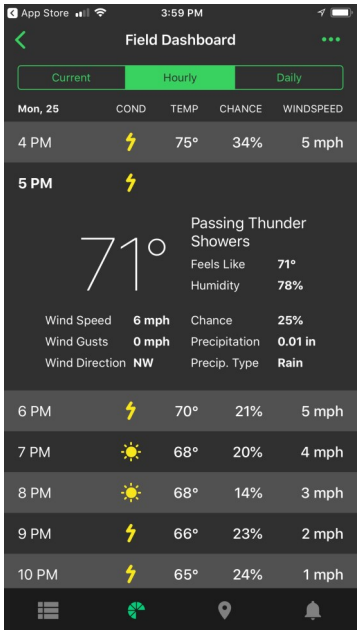


Weather

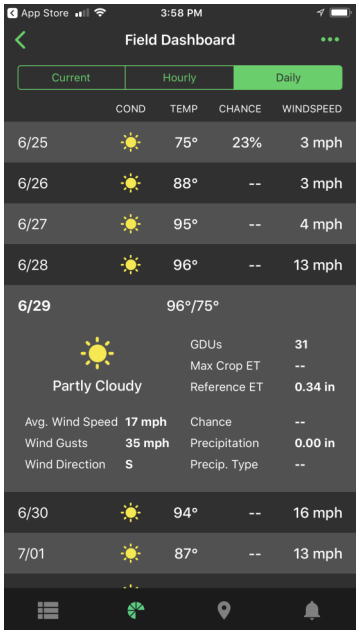
A critical input to FieldNET Advisor is the weather data. Now FieldNET mobile Apps provide the same extremely accurate, hyper-local, field-specific weather conditions and forecasts. View current, hourly and daily weather details. Tap on an hourly or daily summary to even further expand to get more information (see 5:00pm hourly and 6/29 daily examples below).

Current Weather

Hourly

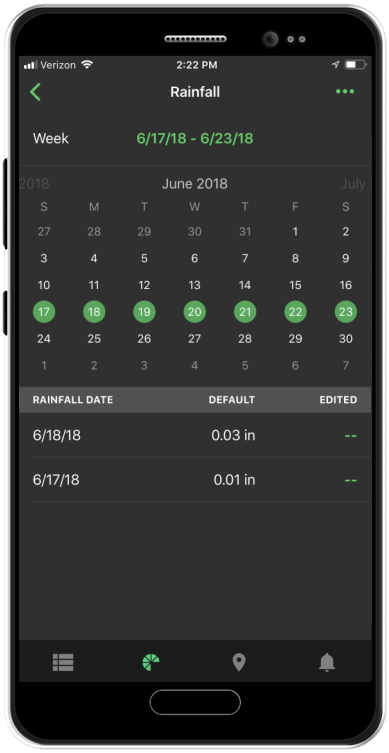


Daily



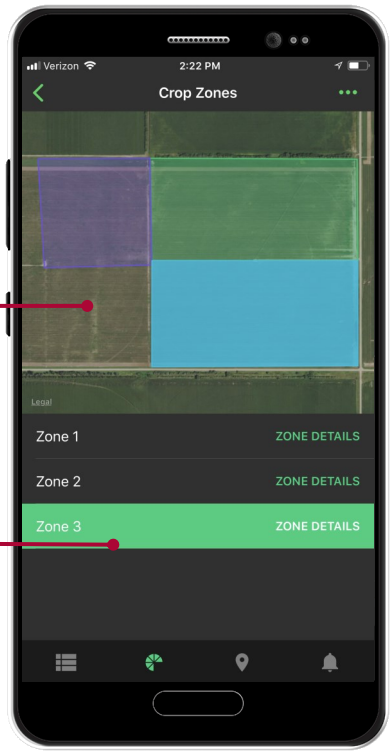
Rainfall Adjustment

Growers can review reported rainfall with the option of manual adjustments through the FieldNET App.

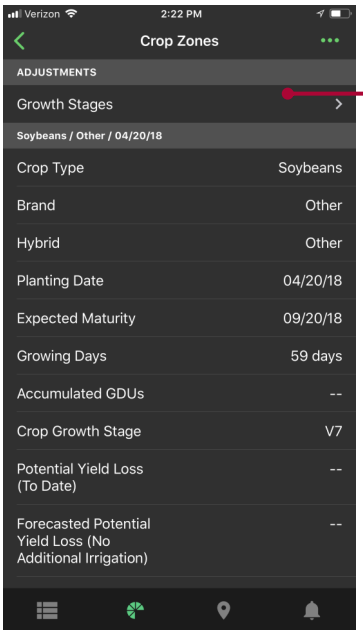


Crop Zones

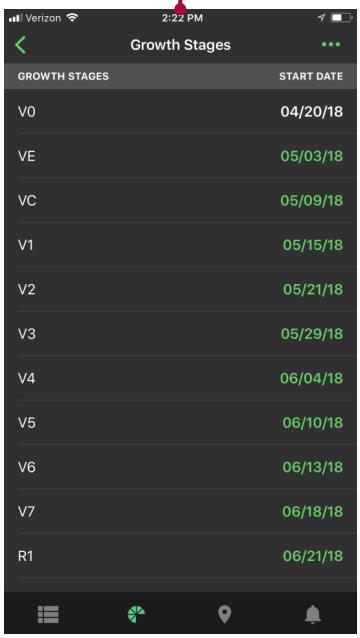
View crop zones and individually select each by tapping on the zone to review and edit the zone details



View detailed crop information



View or edit crop growth stages



Summary of Features

	Web Portal	Mobile App
Map View	○	N/A
List View	○	●
Field Dashboard	○	●
Crop Data	◉	●
Yield Data	●	N/A
VRI Plan	○	◉
Weather	◉	●
Adjustments		
Rainfall	○	●
Irrigation	◉	N/A
Available Water	●	N/A
Crop Growth	●	●
Crop Settings	●	N/A
Setup		
Irrigated Area	●	N/A
Field Boundary	○	N/A
Soil Zones	◉	N/A
Crop Zones	◉	N/A
Properties		
General	◉	N/A
Settings	◉	N/A
Alerts	○	N/A

● = New page and features
◉ = Existing pages with new features
○ = Same functionality
N/A = Not available

Feature Chart—2017 Initial Release

IRRIGATION ADVISOR		• Recommended next irrigation date and amount • Daily and season-to-date soil water depletion across entire field • Forecasted soil water depletion and irrigation needs for remainder of season • Soil water depletion warning alerts • Customized irrigation management settings and recommendation alerts	• Automated initial field setup wizard allows multiple crops, hybrids, planting dates • Automated importing of soil data[1] • Automated as-applied irrigation data (depth, precise location, date) • Updated of existing field or soil maps (if desired)
CROP ADVISOR		• Current crop growth stage and root depth allowing manual adjustments • Daily crop water usage (ET_c) • Automatic irrigation recommendation adjustments based on yield impact • Season-to-date and remainder of season forecasted crop stress	• Patent-pending season-to-date and remainder of season forecasted yield impact • Continuously updated forecasted crop maturity date
WEATHER ADVISOR		• Field-specific current weather conditions • Field-specific hourly weather forecasts for 15 days • Field-specific daily weather forecasts for 15 days • Customizable field-specific weather alerts	• Editable daily rainfall amounts • Able to incorporate data from optional in-field Growsmart weather station • Current season observed and historical normal conditions
VRI ADVISOR		• Auto-generated, continuously updated field-specific sector VRI plans (available for all field)	• Auto-generated, continuously updated field-specific sector full Precision VRI plans (requires Growsmart Precision VRI hardware with individual sprinkler control)

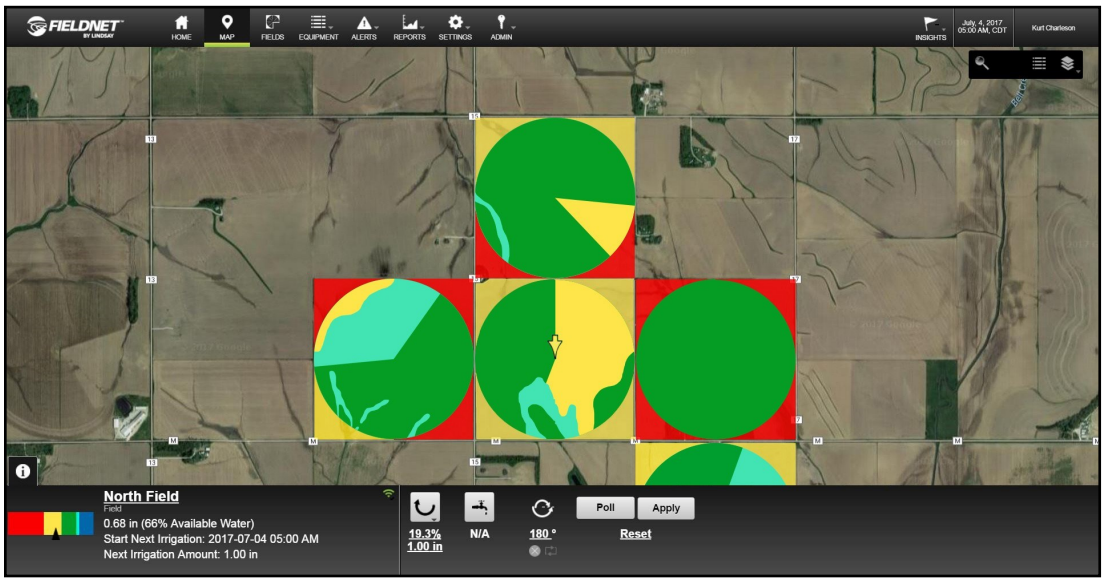
[1]Retrieved from USDA SSURGO database. Only available in United States.

Feature Chart—What's New in 2018

IRRIGATION ADVISOR		• Customizable irrigated areas allows users to setup "avoid" and "ignore" areas in the field • Setup "unmanaged" crop zones to ensure a user selected default irrigation depth • Added effective rainfall and irrigation to the irrigation scheduling graph • Added available water page to easily make adjustments and corrections based on field observations • Updated irrigation page to allow users to view and adjust irrigation application data • Added comprehensive configuration capabilities that optimize around constraints, such as; irrigation hour of operation, system efficiency • Added ability to account for different tillage practices with soil water depletion calculation	• Ability to view daily crop water ET report for each crop zone • Integration with global soil database for areas outside the US. International Soil Reference and Information Center (ISRIC). • Enhanced field setup, menus and navigation • Enhanced map drawing tools • Ability to revert back to default soil data • Ability to revert back to virtual rainfall data • Option to use the GrowSmart rain-bucket add-on (BOSS or Pivot Control) • Ability to automatically adjust the upper rainfall buffer to more fully deplete the available water in soil • Ability to automatically adjust the lower management buffer to more fully deplete the available water in the soil
CROP ADVISOR		• New crop settings provides ability to customize crop growth models • Added crop growth page for growth stage adjustments based on field observations	• Added yield data page to view yield prediction graphics • Added area covered for each field, crop zone, and management zone
WEATHER ADVISOR		• Ability to view maximum crop ET for each field	• Users can enable a daily consolidated report that provides previous day rainfall, today's rainfall forecast, max crop ET for last three days and next three days.
VRI ADVISOR		• Ability to account for water limitations, including: 1) seasonal water allocations, 2) load management or times of day constraints for pivot operation, 3) ability to customize by crop zone and/or by crop growth stage, 4) ability to irrigate at a user-defined percent of daily crop ET and vary this by growth stage if desired, and 5) ability to deficit irrigate and vary this by growth stage if desired	• Setup minimum irrigation amounts • Users can now prioritize soil zones based on performance and preference

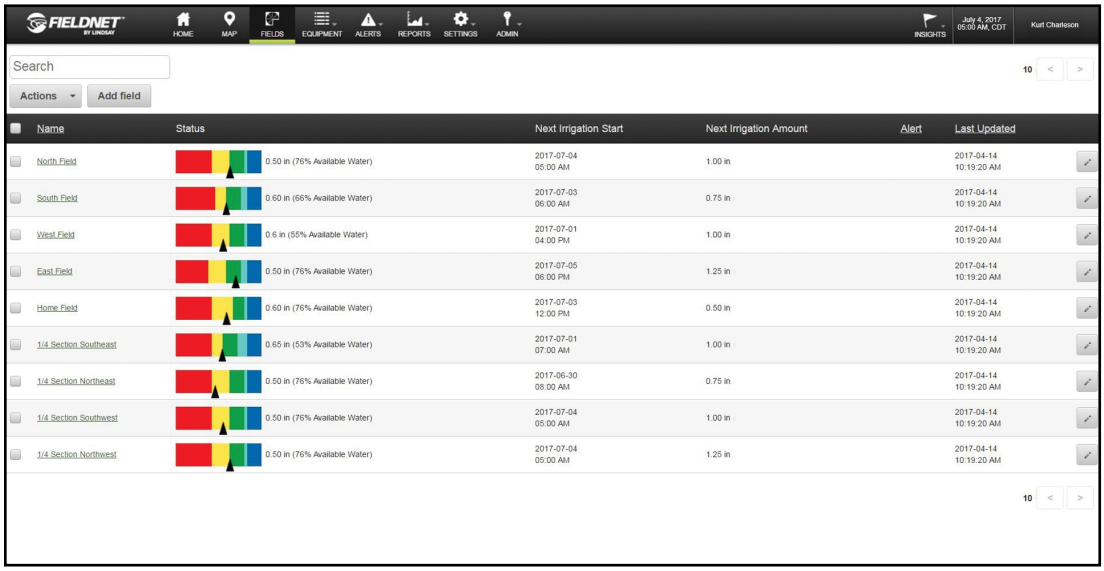
Map page

- Display map layer providing high-resolution soil water depletion across the field
- Shows your whole field, both irrigated and unirrigated areas
- Visually indicates areas at or nearing critical depletion levels based on the map's color shading
- Quick tray pop-up dashboard (at bottom) displays key irrigation information with ability to directly start/stop pivot



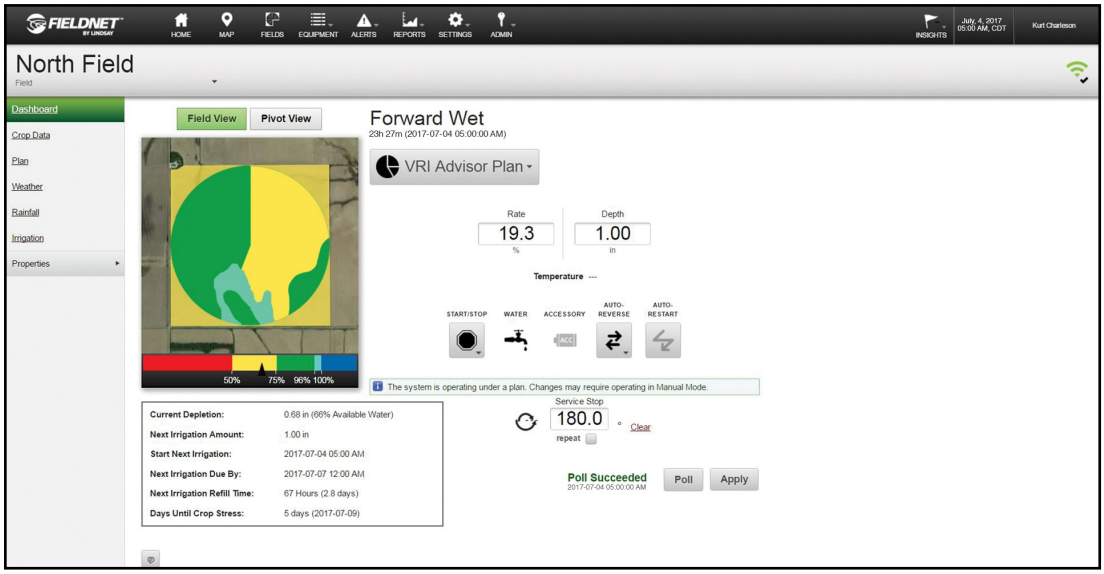
Field summary list view

- View critical information for all fields on one dashboard (current maximum soil water depletion within each field, percent depleted, depth required to refill, next irrigation start date, next irrigation amount, alert-status)
- Jump directly to field dashboard



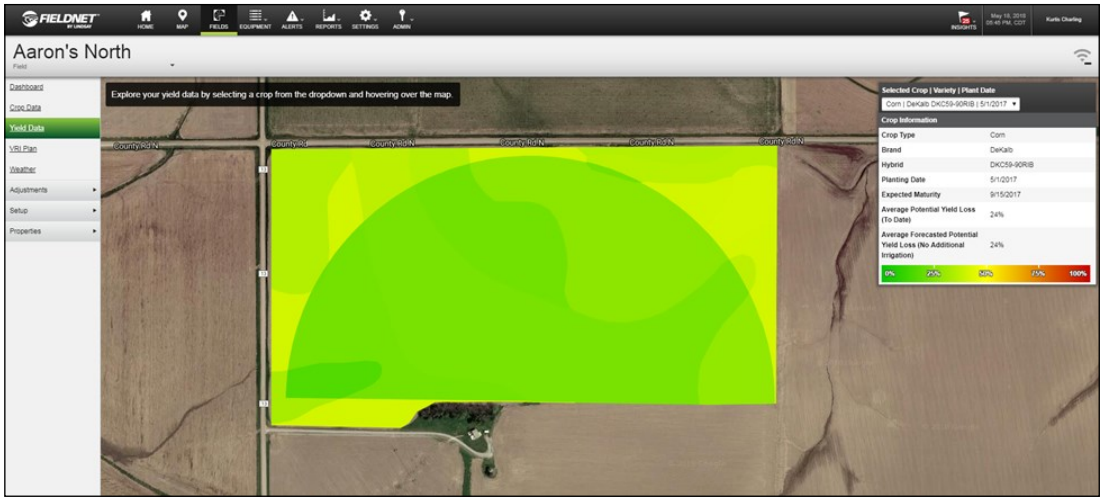
Field dashboard

- View soil water depletion map, with ability to toggle to current pivot location and status
- Actional information summary dashboard (current depletion, next irrigation amount, date to start next irrigation, next irrigation completion time, days until crop stress)
- Select manual mode of VRI plan
- Directly start/stop and control pivot



New Yield data page

- View yield predictions and estimates on a map overlay per selected crop zone
- Quickly see potential yield loss (to-date), forecasted yield loss (with irrigation), and forecasted yield loss (without irrigation)



Crop Data Page Overview

The Crop Data page allows growers to explore the crops' development in each zone within the field in more detail if desired by a grower. In FieldNET Advisor, a separate management zone is automatically created for each crop zone (i.e., crop zones are areas with different crop types, hybrids, or planting dates) and for each different soil type within the unique crop zones.

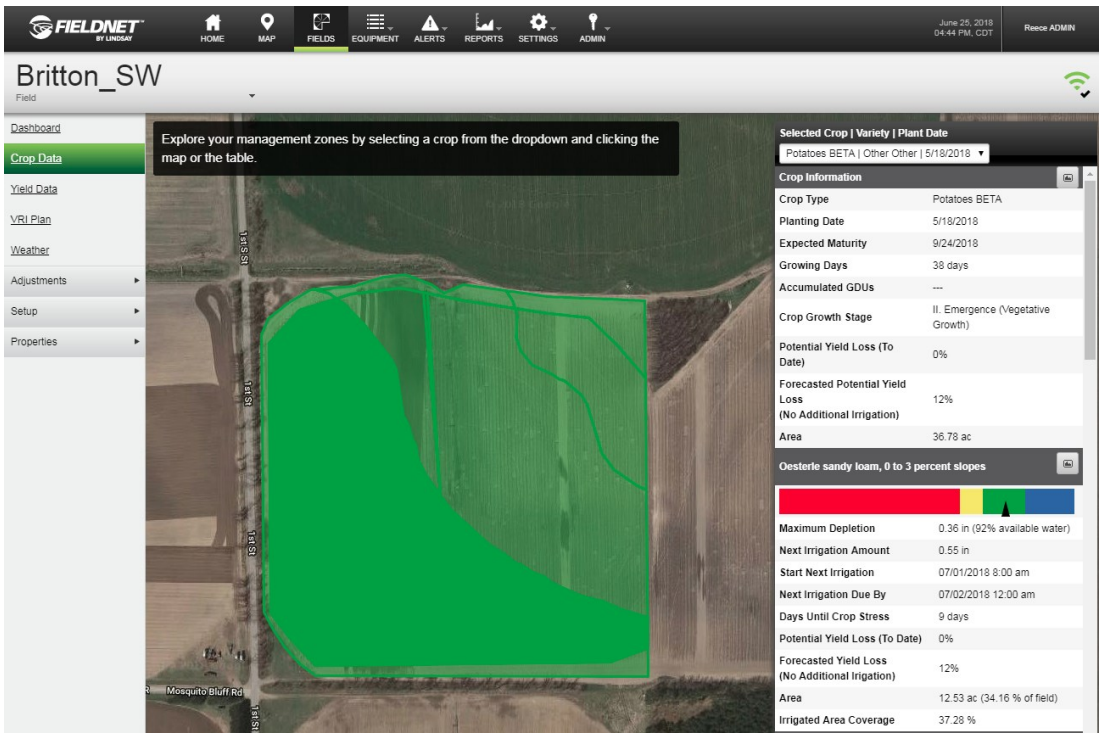
For each crop zone, the following information is provided:

- Crop Type, Brand, Hybrid, and Planting Date entered by the grower for this crop zone
- Expected Maturity: based on season-to-date and forecasted remainder of season crop development
- Growing Days: the number of days since planting
- Accumulated GDUs: season-to-date growing degree units accumulated based on field-specific weather data
- Crop Growth Stage: current growth stage projected by FieldNET Crop Advisor
- Potential Yield Loss (To Date): estimated season-to-date yield loss from past crop stress events
- Forecasted Potential Yield Loss (No Additional Irrigation): estimated yield loss if no additional irrigation is applied
- Soil type: shows a description of the soil
- ***New*** Area covered: Acres or hectares of irrigation area covered

Below the Crop Information data, there is a separate data table with key information for each soil zone within that crop zone (i.e., the management zones). The colored water gauge visually indicates the maximum soil water depletion within each of the management zones.

New information for each individual crop zone includes:

- Forecasted yield loss with no additional irrigation
- Area covered (acres or hectares)
- Crop zones percentage of total area covered

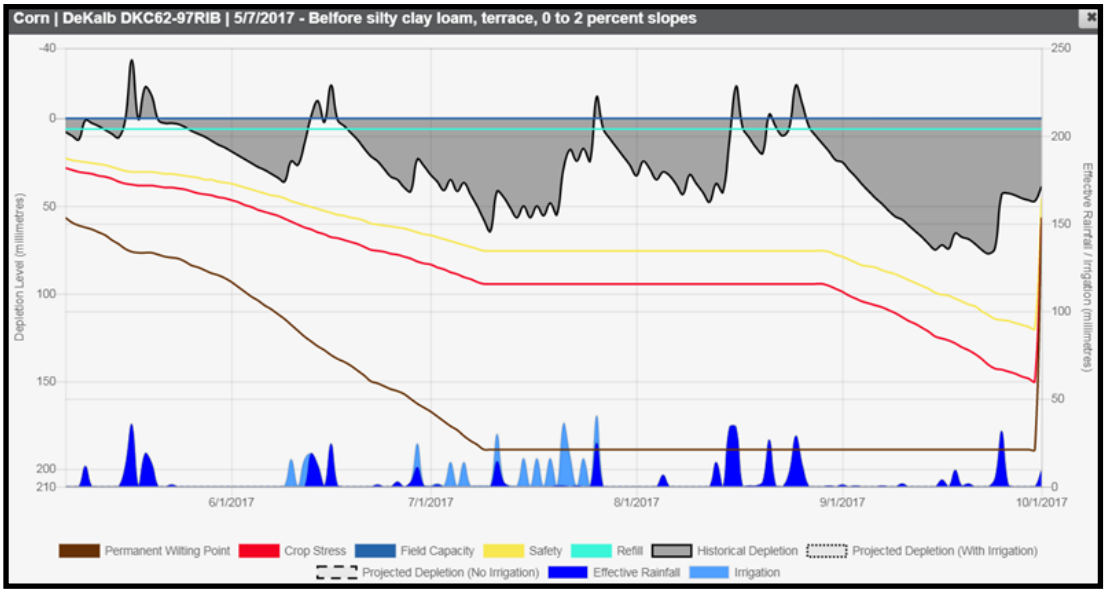


Daily Soil Water Depletion Chart Overview

By clicking on the chart icon at the top right corner of each management zone in the Crop Data page, a chart will launch providing the following daily season-to-date and forecasted remainder of season information:

- Permanent Wilting Point: Total water in soil at current root depth before crop reaches permanent wilting point
- Crop Stress: Allowable Water Depletion (AWD) based on current root depth before crop enters water stress
- Field Capacity: Maximum amount of water the soil can hold before water is lost to deep percolation
- Safety: Lower management buffer line that will trigger irrigation recommendation (can be adjusted by grower)
- Refill: Upper management buffer line that sets the max irrigation refill limit to reserve capacity for rainfall
- Historical Depletion: Tracks the daily season-to-date actual soil water depletion level
- Projected Depletion (With Irrigation): Forecasts remainder of season depletion with recommended irrigations
- Projected Depletion (No Irrigation): Forecasts remainder of season depletion without recommended irrigations
- ***New*** Effective Rainfall and Irrigation: Correlate changes with effective rainfall and irrigation events

Enhanced Irrigation Schedule graph



Soil Water Depletion Gauge Explanation:

- Crop Stress: current depletion is below Allowable Water Depletion indicating crop stress
- Refill Warning: current depletion is below safety line (lower management buffer)
- Optimal Water Zone: current depletion is within target level
- Overwater Warning: current depletion is above upper refill line (upper management buffer)
- Deep Percolation: soil is fully saturated, deep percolation likely

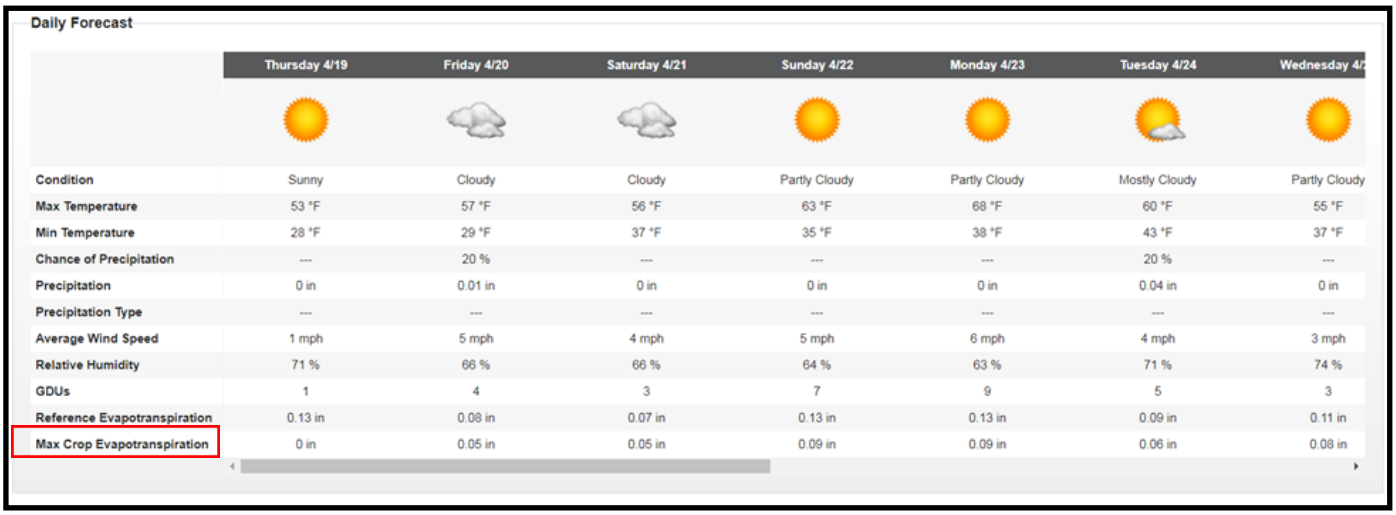
Weather page

FieldNET Weather Advisor provides growers with the most accurate, hyper-local weather data available for their fields.

After an extensive evaluation of several leading providers of localized historical and forecasted weather, where each provider's weather data was compared to the data coming from a large number of calibrated weather stations spread across the world, DTN® was selected as the provider of the field-level weather for FieldNET Advisor.

This premium, highly accurate field-specific weather data can be accessed from the Weather page associated with each field within FieldNET Advisor and goes far beyond a typical weather forecast by providing the following grower -focused information:

- Hyper-local field-specific weather data, using DTN's proprietary weather modeling tools to provide the weather conditions at the specific location of the field
- Current conditions in the field, including the actual temperature, the "Feels Like" temperature, chance of precipitation, past 6-hour and 24-hour rainfall, wind speed, wind gusts speed, wind direction, and relative humidity
- Hourly and daily forecasts out 15 days
- Crop-specific weather, including daily Reference crop ET, peak Crop ET indicating the maximum daily ET for all crops in the field at the forecasted development stage, and daily Growing Degree Days accumulated
- ***New*** Max Crop ET



Daily Forecast

	Thursday 4/19	Friday 4/20	Saturday 4/21	Sunday 4/22	Monday 4/23	Tuesday 4/24	Wednesday 4/
Condition	Sunny	Cloudy	Cloudy	Partly Cloudy	Partly Cloudy	Mostly Cloudy	Partly Cloudy
Max Temperature	53 °F	57 °F	56 °F	63 °F	68 °F	60 °F	55 °F
Min Temperature	28 °F	29 °F	37 °F	35 °F	38 °F	43 °F	37 °F
Chance of Precipitation	---	20 %	---	---	---	20 %	---
Precipitation	0 in	0.01 in	0 in	0 in	0 in	0.04 in	0 in
Precipitation Type	---	---	---	---	---	---	---
Average Wind Speed	1 mph	5 mph	4 mph	5 mph	6 mph	4 mph	3 mph
Relative Humidity	71 %	66 %	66 %	64 %	63 %	71 %	74 %
GDUs	1	4	3	7	9	5	3
Reference Evapotranspiration	0.13 in	0.08 in	0.07 in	0.13 in	0.13 in	0.09 in	0.11 in
Max Crop Evapotranspiration	0 in	0.05 in	0.05 in	0.09 in	0.09 in	0.06 in	0.08 in

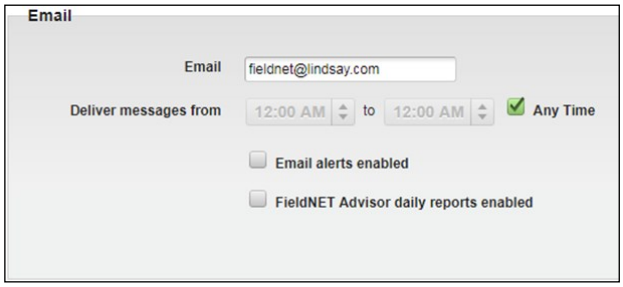
New Enhanced reporting capabilities

Stay informed with daily reports sent via email to include;

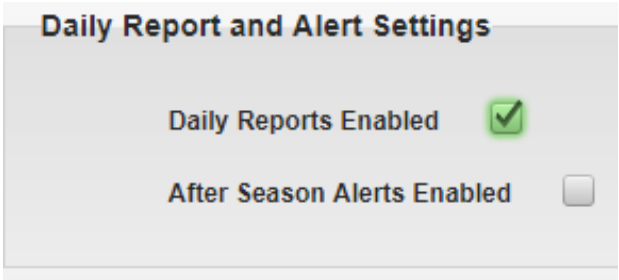
- Rainfall (yesterday and today's forecast), both amount of % chance
- Next irrigation start amount and date
- Last three (3) day's Max Crop ET
- Today's Max Crop ET
- Next three (3) day's Max Crop ET

Grower enabled reports will be sent out at 6:00am every day during the growing season.

Communication Page

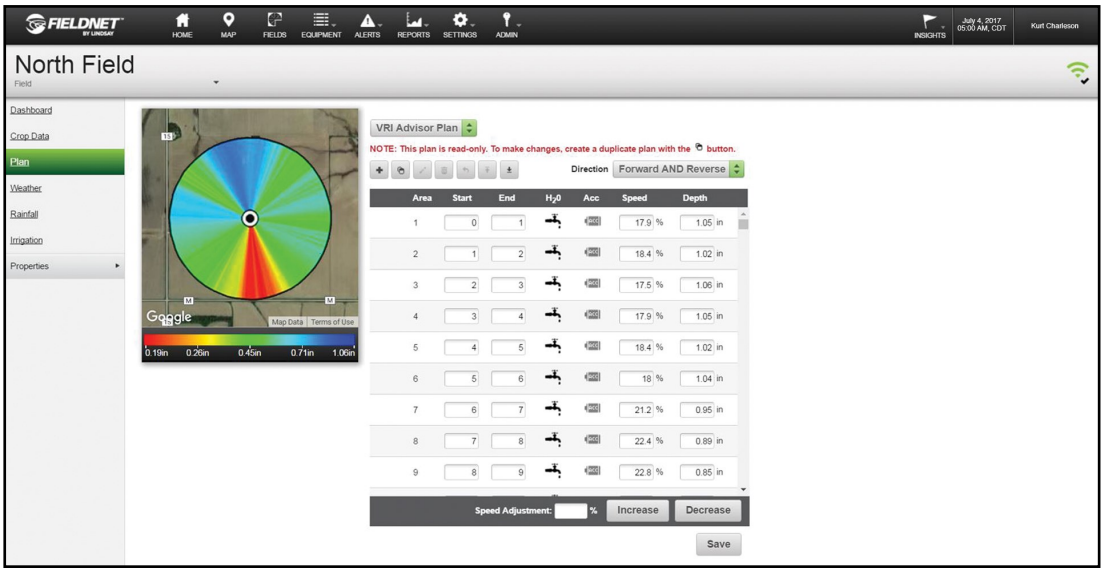


Field Settings Page



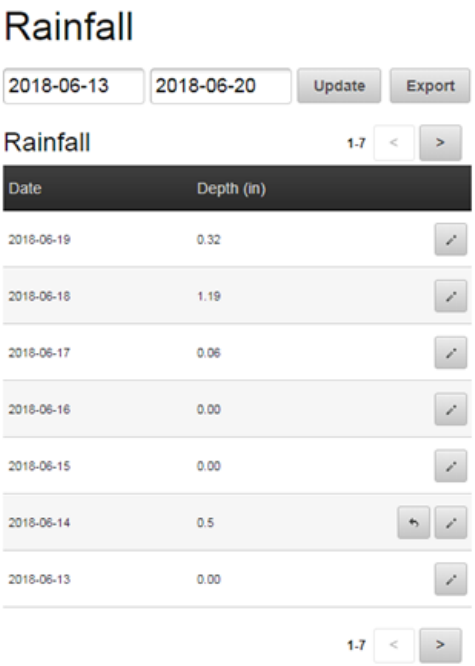
VRI page

- Review current dynamic VRI prescription
- Copy, modify and save existing VRI plans or create and save new VRI plans



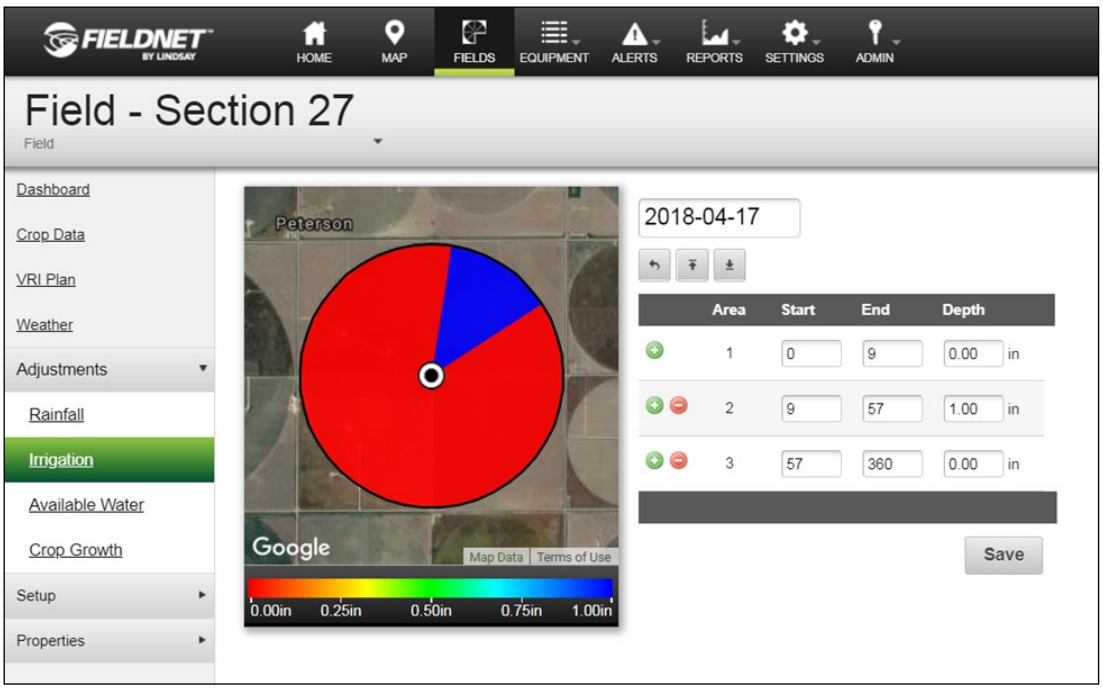
Rainfall adjustments

- Growers can make manual adjustments (if necessary)
- Ability to revert back to DTN data where manual adjustments had been made



Irrigation adjustments

- The irrigation page allows growers to view the sectional water usage data for the selected day
- ***Enhancement***. Growers can now import irrigation application data, make manual adjustments or revert back to the original sectional water usage data.

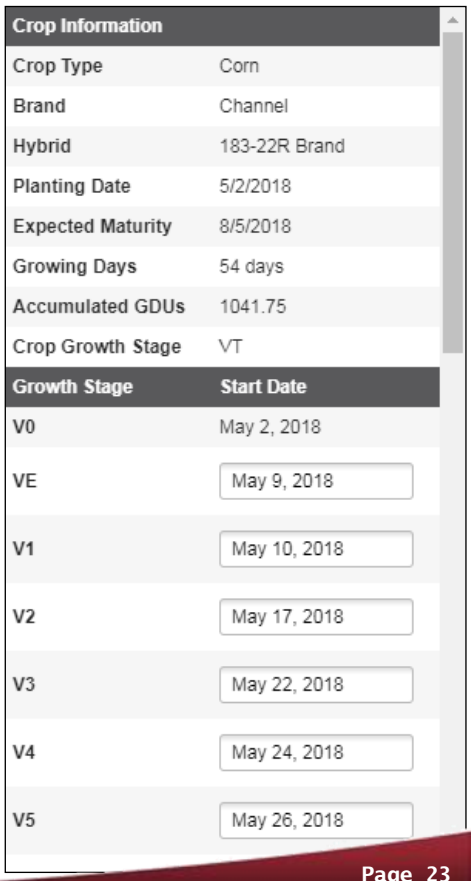


New Available water page

- Growers can use the new available water adjustments page to make adjustments and corrections to the FieldNET Advisor's output based on field observations

New Crop growth page

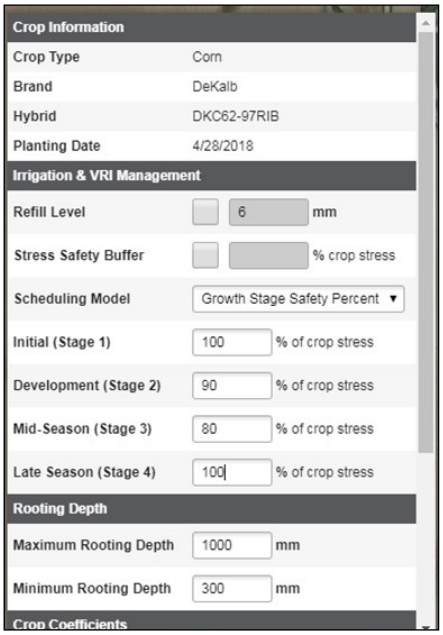
- The new crop growth page provides growers easier access to make adjustments to crop growth stages.



Crop Information	
Crop Type	Corn
Brand	Channel
Hybrid	183-22R Brand
Planting Date	5/2/2018
Expected Maturity	8/5/2018
Growing Days	54 days
Accumulated GDUs	1041.75
Crop Growth Stage	VT
Growth Stage	**Start Date**
V0	May 2, 2018
VE	May 9, 2018
V1	May 10, 2018
V2	May 17, 2018
V3	May 22, 2018
V4	May 24, 2018
V5	May 26, 2018

New Crop settings page

- Growers can now customize crop growth settings for each crop zone within a field to give the user the ability to edit the different crop coefficents, growing degree day units (GDU), and rooting depth variables used within the FieldNET Advisor growth models in cases where the user has more regional-specific information or local research.



New Customize irrigation per crop zone

Growers can now select individual crops zones to customize the irrigation management for the zone. This feature allows growers to set the refill level and stress safety buffer percents for each crop zone and select the irrigation scheduling model for the crop zone, which includes the following options:

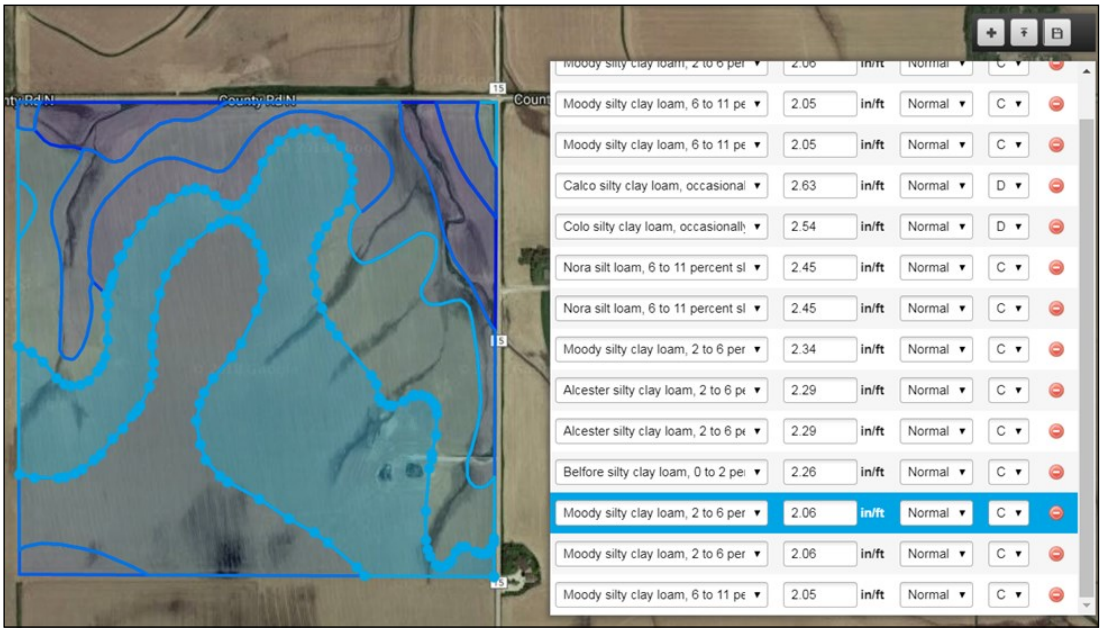
- **Normal**—Standard irrigation and VRI management (default)
- **% of Crop ET**— Irrigation scheduling is based on the percentage of crop ET. For example, if the % of crop ET is set at 70% and the next seven (7) days of ET is equal to one (1) inch, then the irrigation recommendation woul dhave an irrigaiton amount of 0.7 inches and the VRI plan would also reflect this value. This feature is especially useful for areas where deficit irrigation is necessary.
- **Growth Stage Safety %**—Irrigation scheduling is based on different safety percentage values for the four (4) primary FAO growth stages (initial, development, mid-season, late season). This allows users to irrigate differently at the primary growth cycles of the crop and adjusts the irrigation frequency based on these growth cycles (see image on left for example)

New Irrigated area page

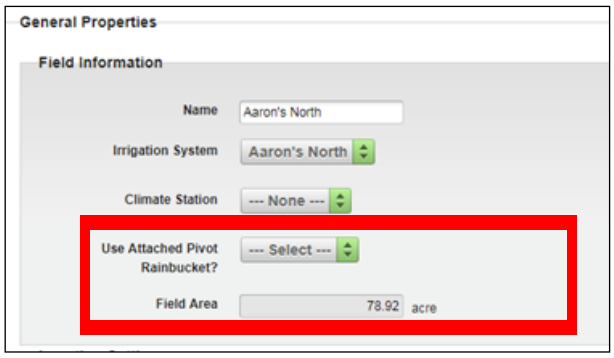
- This page allows the growers to customize the irrigated area that FieldNET Advisor uses to generate its irrigation recommendations
- In addition, “avoid” and “ignore” areas can be created which removes the areas from the recommendations.
- Dealers can also upload their irrigation system design from SmartDesign to provide a more precise irrigated area for FieldNET Advisor. This is especially helpful with corners.

Enhanced Soil zones page

- Growers can now import soil zones using shape file, kml files, and geojson files.
- For regions outside the United States, FieldNET Advisor now integrates with a global soil database. Growers can retrieve more accurate default information from the International Soil Reference and Information Center (ISRIC).
- Growers now have the option setup soil zone priorities based on their preference or past performance. For example, a “high” priority soil zone will carry more weight in the FieldNET Advisor model than normal (default) or low priority zones.



Enhanced General page



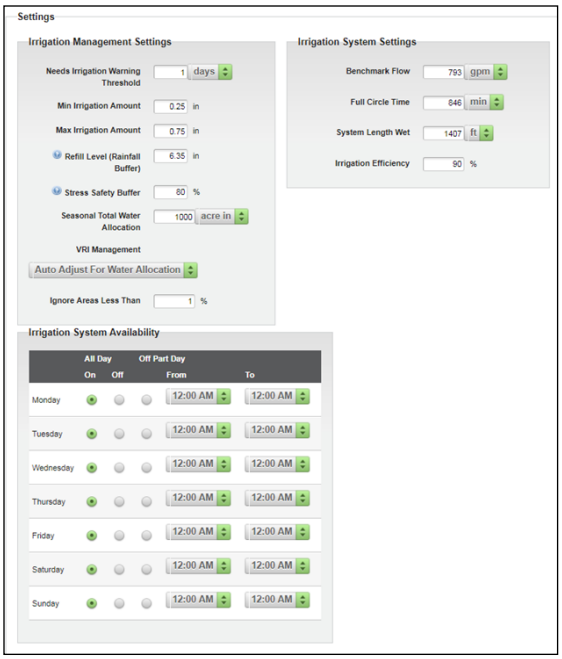
- Growers using the rain bucket add-on for BOSS or Pivot Control panels can use the rain bucket with FieldNET Advisor.
- Grower can quickly view FieldNET Advisor's calculated area covered (acres or hectares).

Enhanced Settings page

Added "minimum irrigation amount" so growers can optionally specify the minimum amount of application that FieldNET Advisor will recommend.

FieldNET Advisor provides more VRI and Irrigation management customization of settings for the advanced user, to include:

- **VRI & Irrigation Management** – allows users to select from a list of different management options that FieldNET Advisor will use to dynamically optimize their irrigation schedule and VRI plans. The options are as follows
    - **Normal** – standard irrigation and VRI management (default)
    - **Auto Adjust Refill Level** – The refill level or point is automatically adjusted, looking at future and estimates remaining rainfall to increase or decrease the refill level as the season progresses.
    - **Auto Adjust Refill & Stress Safety Levels** – The refill and stress safety levels are automatically adjusted by looking at estimated remaining rainfall and crop water usage to fully deplete the soil's water, while still avoiding the crop stress point throughout the entire growing season.
    - **Auto Adjust for Water Allocation** – The refill and stress safety levels are automatically adjusted to account for the field's water allocation, called Seasonal Total Water Allocation (total volume of water). With this option, FieldNET Advisor optimizes the irrigation schedule and VRI plans to reduce water application while still attempting to avoid crop water stress throughout the entire growing season. If it cannot avoid crop water stress, then deficit irrigation will be implemented.



- **Ignore Areas Less Than %** - Prevents very small areas of the field from driving the irrigation recommendations.
- **Irrigation System Availability** – Define days of the week and times that the irrigation system can or can't run.
- **Irrigation Efficiency** – Irrigation system efficiency for the irrigation scheduling model based on the sprinkler package and irrigation system design. This value defaults to 90%.

Do I need additional hardware to use FieldNET Advisor?

No additional hardware is required once the pivot is connected to FieldNET. FieldNET Advisor is an add-on option available within the existing FieldNET web portal.

What if I have multiple crop and/or hybrids or planting dates in one field?

FieldNET Advisor allows multiple crops, hybrids, and planting dates and tracks each of those crop zones independently.

Is it possible to add a field during the middle of the growing season?

Yes, fields can be added at any point during the season. FieldNET Advisor will automatically pull the season-to-date weather data. If the pivot was on FieldNET all season, it will also automatically pull the season-to-date irrigation data.

What crops are currently available?

FieldNET Advisor launched in April 2017 supporting corn and soybeans. Eighteen (18 additional crops were added in 2018 (see page 5 for a complete list).

In what regions is FieldNET Advisor available?

When launched in 2017, FieldNET Advisor had full geographic availability in the U.S. and Canada. The technology is expected to be available by the end of 2018 in several new regions, including Algeria, Argentina, Australia, Brazil, Chile, China, Colombia, France, Mexico, New Zealand, Paraguay, Portugal, Spain, Tasmania, Turkey, Ukraine and Uruguay, with full global release planned in the near future

Does FieldNET Advisor replace the need for growers to scout their fields?

FieldNET Advisor is intended to provide growers with science- and data-based information to help growers make better, more informed irrigation decisions; however, it should not be relied upon to replace regular field scouting to confirm their irrigation decisions and does not replace a farmer's knowledge of the unique nuances of their fields.

Can FieldNET Advisor be used in an autonomous mode to automate my irrigation management?

This capability has intentionally not been enabled to ensure that growers review the irrigation recommendations provided and confirm their agreement by then starting the irrigation plan recommendation themselves or by making modifications to the recommended plans before starting.

Does FieldNET Advisor replace the need for soil moisture probes or other in-field sensors?

Growers with probes can still use them as a check and balance. However, a vast majority of growers do not use soil moisture probes, crop sensors, ET based water balances, or other agronomic method of determining when and how much to irrigate. Therefore, FieldNET Advisor is an extremely simple and effective way to adopt this best practice and improve their irrigation management for all growers.

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