



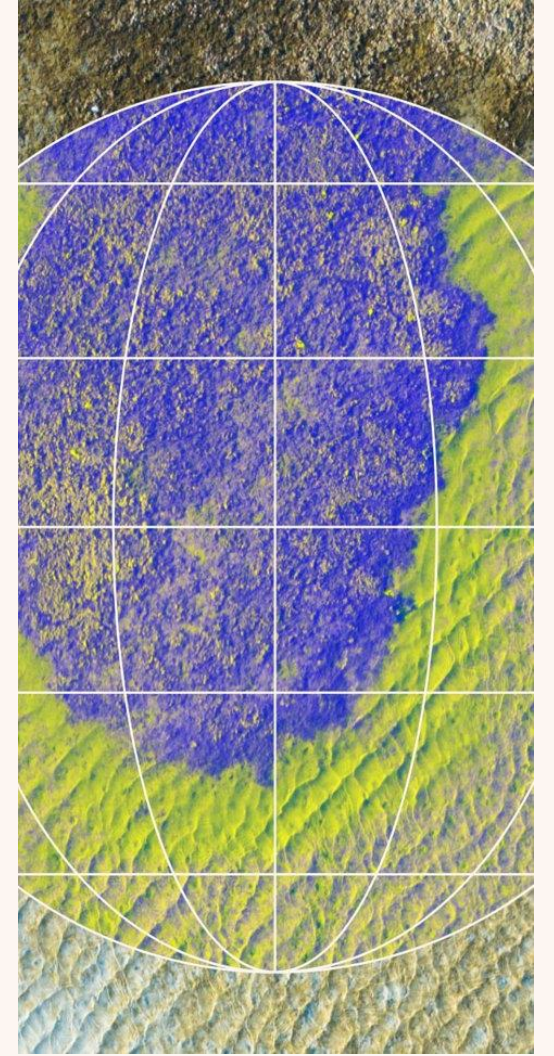
Hydrosat

Commercial Overview

Mission

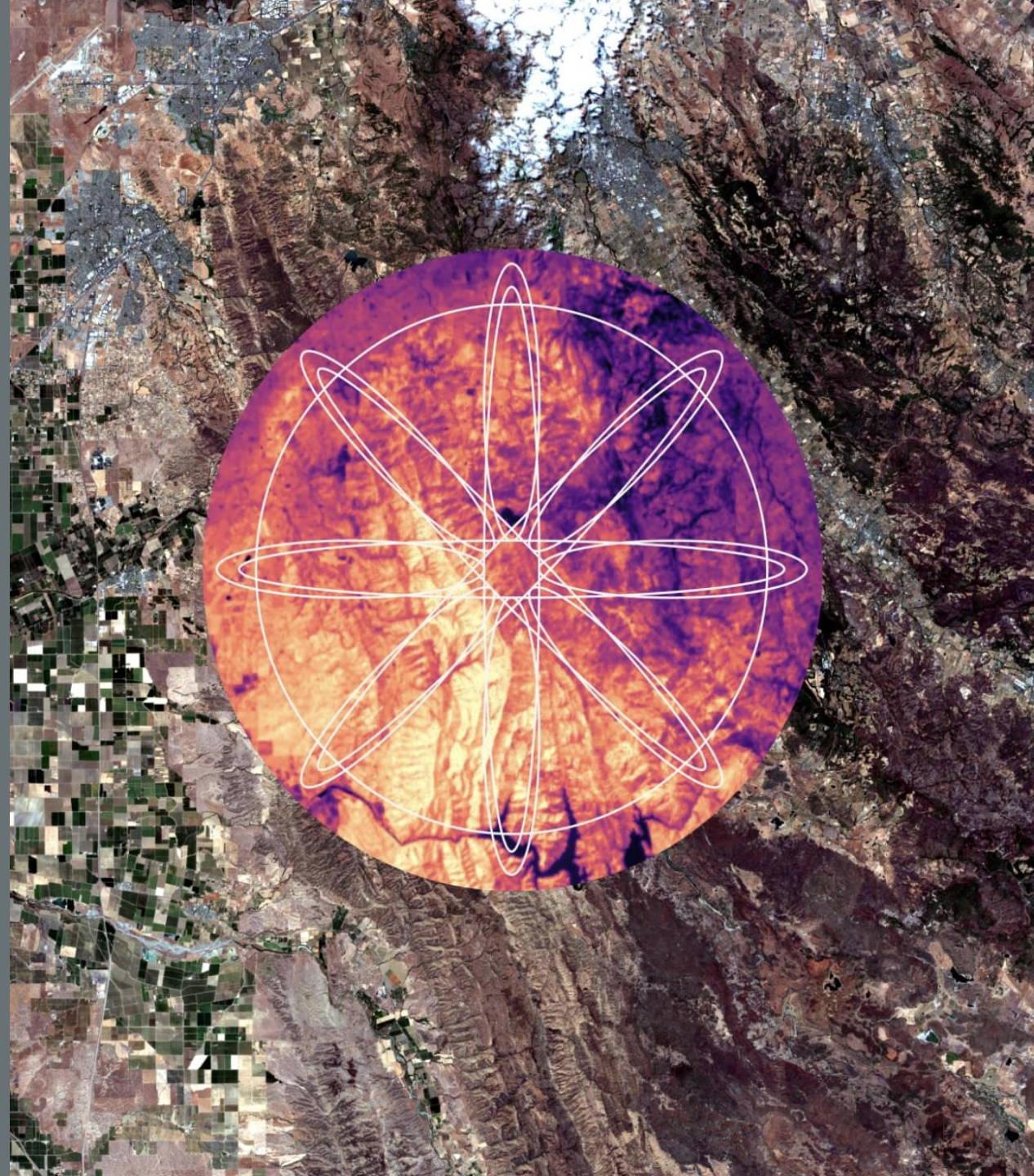
Our vision is to help Earth manage its most valuable resource: Water.

We provide geospatial intelligence for food security, public safety, and the environment through daily surface temperature data and crop analytics.



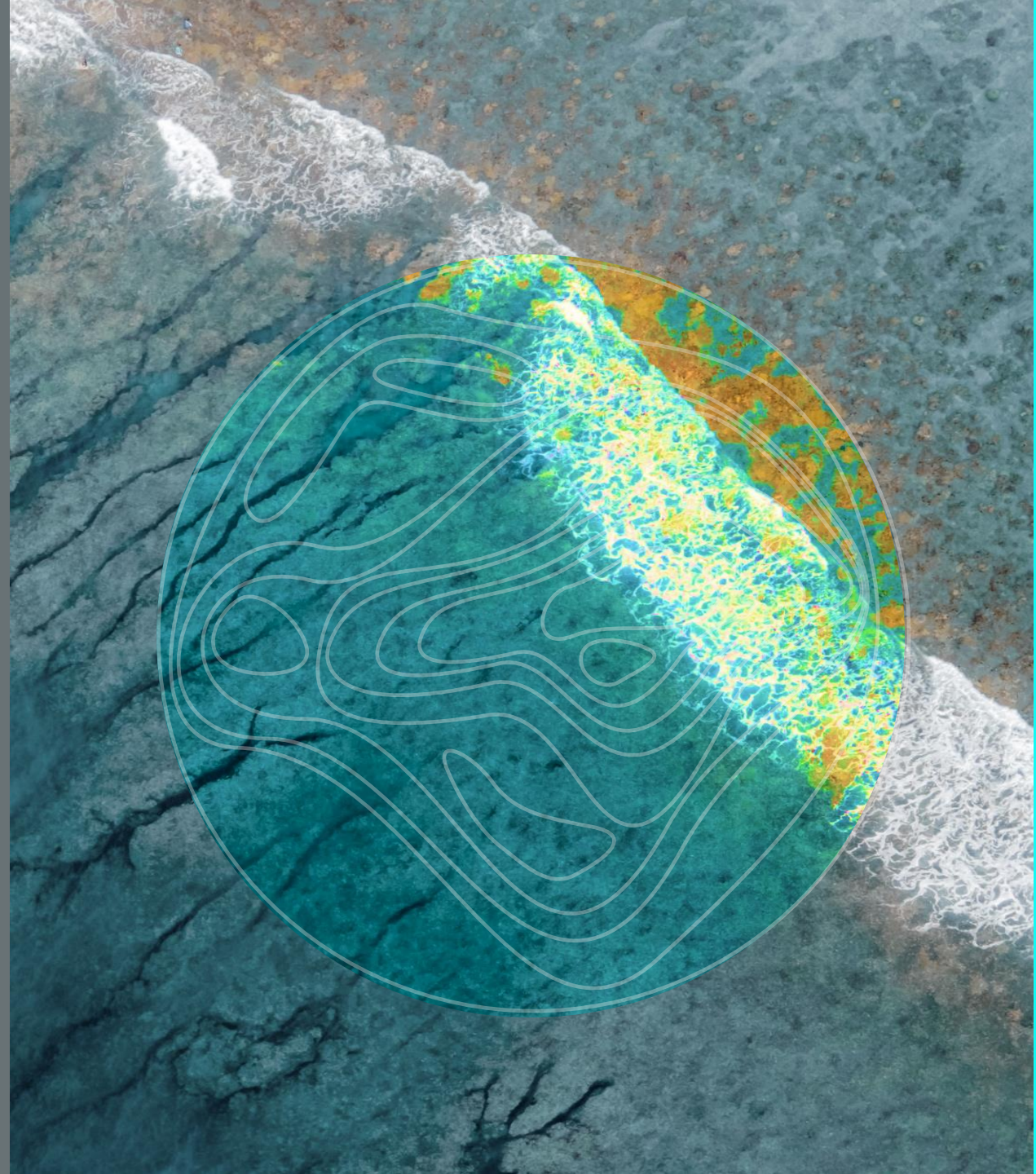
Thermal & Surface Temperature

Hydrosat provides data beyond what is detectable by most satellites, thermal infrared. Thermal infrared data enables you to monitor Earth's surface temperature.



Improvements & New Use Cases

Our temperature data significantly improves on common visual data use cases; it also enables unique ones that only thermal infrared can meet.



Use Case List



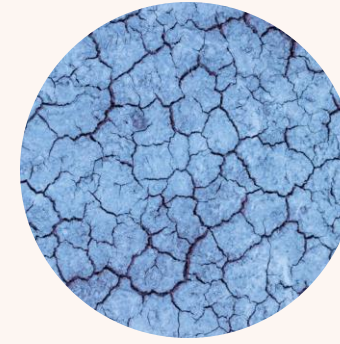
Hydrosat surface temperature data can be used for a wide range of applications. Those identified here are those that we believe are most promising, but there are many more that exist and more so that have not been thought of yet.



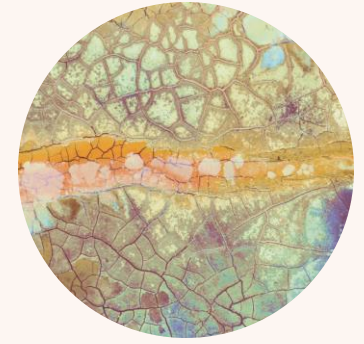
IRRIGATION
OPTIMIZATION



WILDFIRE RISK
ASSESSMENT



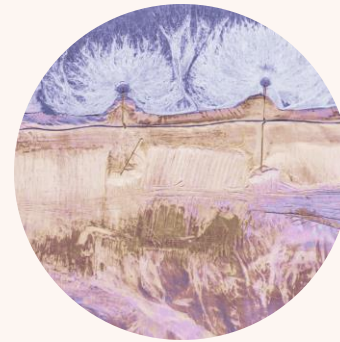
DROUGHT
PREDICTION



DISEASE VECTOR MAPPING



ECOSYSTEM MONITORING



LAND COVER
CLASSIFICATION

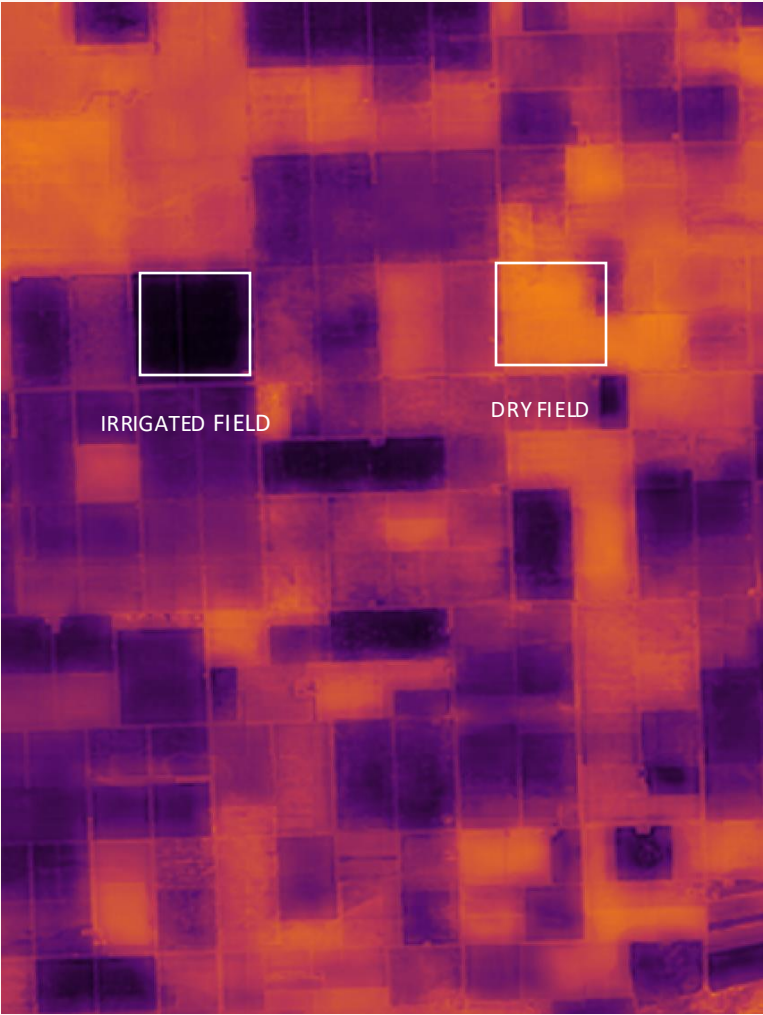


WATER RESOURCE
MANAGEMENT



URBAN HEAT MAPPING

Crop Stress Example



20M LAND SURFACE TEMPERATURE



20M VISIBLE

Filling The Capability Gap



Despite a vast number of visible and radar data sources, thermal is a gap.



Hydrosat

MAXAR
TECHNOLOGIES

BLACK|SKY

planet.



SATELLOGIC

planet.

SATELLOGIC

MAXAR
TECHNOLOGIES

ConstellIR

SATELLITEVU

kool6ck



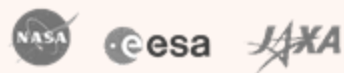
Capella Space

ICEYE

UMBRA

XpressSAR

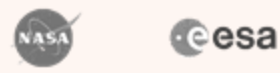
MAXAR
TECHNOLOGIES



Visible



Near-IR

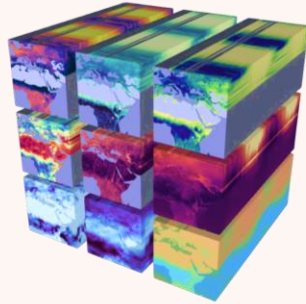


Thermal



Radar

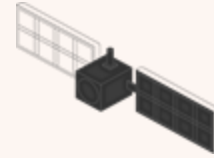
Phased Product Roadmap



Phase I: Fusion Hub

- Simulates constellation data with sophisticated data fusion algorithms
- Identify user pain points before constellation

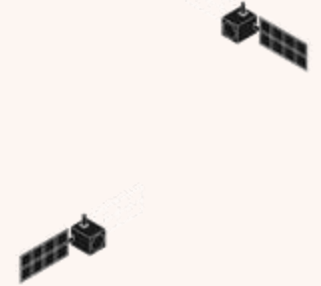
2021



Phase III: Hydosat Constellation

- Provides daily, analytics-ready temperature data to at scale
- 16-satellite temperature sensing constellation

2024 AND BEYOND



JAN 2021

Phase 0: High Altitude Balloon Test

- Tested prototype thermal infrared sensor with Air Force
- Identified hardware focus areas

Phase II: Pathfinder Space Mission

- Enhances Fusion Hub system
- Satellite hardware operational proof of concept



Future Data Specifications



Soon, we will collect our own satellite thermal infrared data to generate surface temperature data and inform crop analytics. Our Pathfinder satellite will prove our operational concept, and our full constellation will set a new standard for space-based thermal infrared remote sensing.

| | PATHFINDER | FULL CONSTELLATION |
|------------------------|---|---|
| LIFETIME | 2+ YEARS | 5+ YEARS |
| ORBIT TYPE | SUN SYNCHRONOUS | SUN SYNCHRONOUS |
| LTAN | 10:30 AM | 10:30 AM AND 2:30 PM |
| ORBIT ALTITUDE | 500 – 550 KM | 500 – 550 KM |
| COLLECTION | NADIR MONITORING | NADIR MONITORING |
| COVERAGE | SELECT AREAS | GLOBAL LANDMASS |
| REVISIT | 16 DAYS (HOSTED PAYLOAD) | DAILY (16+ SATELLITES) |
| SWATH | 70+ KM | 150 KM |
| GSD | VNIR: 30 M LWIR: 70 M | VNIR: 10 M LWIR: 50 M |
| VNIR SPECTRAL BANDS | 458 – 523 NM (BLUE) 543 – 578 NM (GREEN) 650 – 680 NM (RED) 698 – 713 NM (RED EDGE 1) 733 – 748 NM (RED EDGE 2) 773 – 793 NM (NIR 1) 785 – 900 NM (NIR 2) | > 7 BANDS |
| LWIR SPECTRAL BANDS | 10.6 – 11.19 μM (LWIR 1) 11.5 – 12.51 μM (LWIR 2) | MULTIPLE LWIR BANDS |
| LWIR QUALITY (@ 300 K) | ACCURACY: 0.2 K (AT APERTURE) SENSITIVITY (NEDT): 0.06 K | ACCURACY: 0.2 K SENSITIVITY (NEDT): 0.05 K |

Hydrosat Daily Surface Temperature



We offer daily, 20m surface temperature data derived from high quality, radiometric and geometric corrected NASA and ESA datasets. To synthesize the data, we employ a spatiotemporal fusion approach to produce high spatial resolution and data frequency.

● HYDROSAT DAILY SURFACE TEMPERATURE DATA

SPECIFICATIONS

- 20m Spatial Resolution
- Daily Data Frequency
- Global Coverage
- Data Archive to 2017

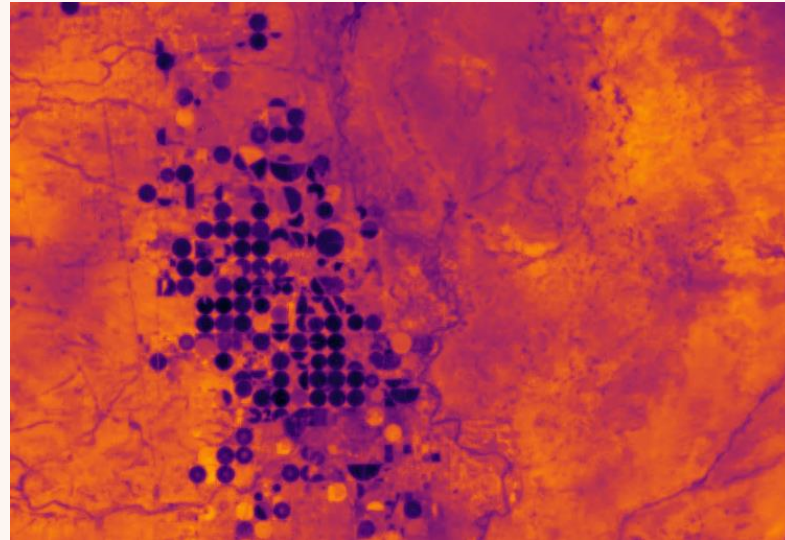
ACCESS

- Hydrosat API Delivery
- STAC Compliant
- Cloud Optimized GeoTIFFs

QUALITY

- Science Quality Calibration
- Analysis Ready
- CEOS CARD4L Product Family

● PREVIEW



01

20m Land Surface Temperature



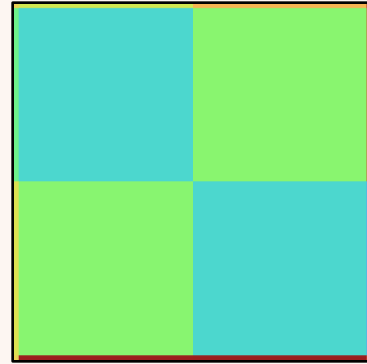
02

20m Visible

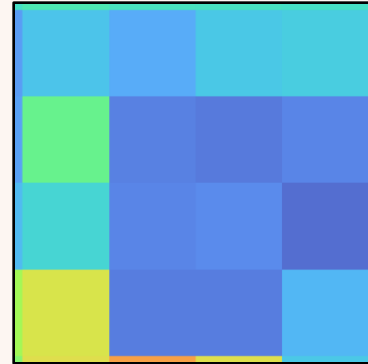
Data Processing



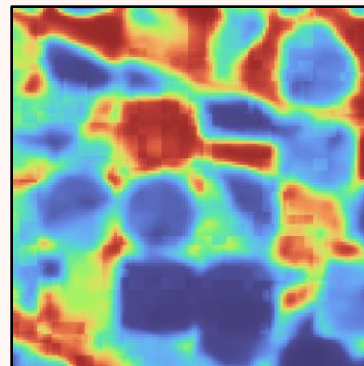
Hydrosat Daily Surface Temperature (HDST) is high resolution, daily imagery modeled using publicly available data sources. In its current iteration, it is produced by our software-only surface temperature data production system, Fusion Hub.



DAILY, 1 KM



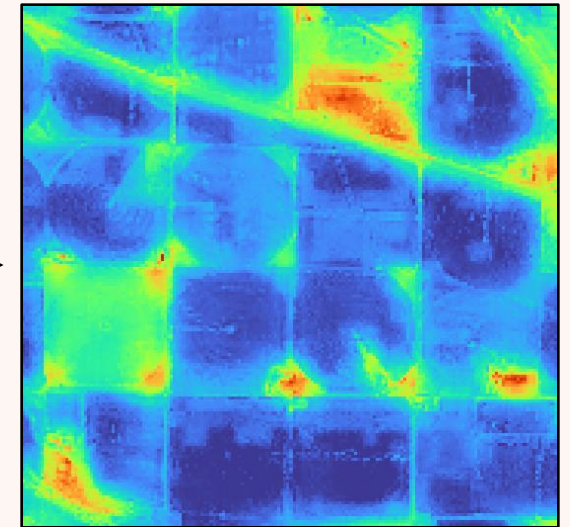
DAILY, 500 M



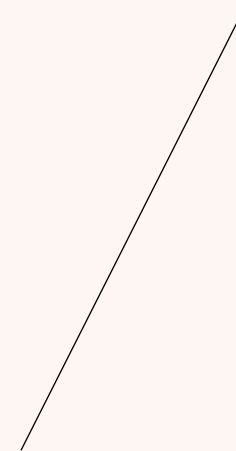
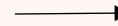
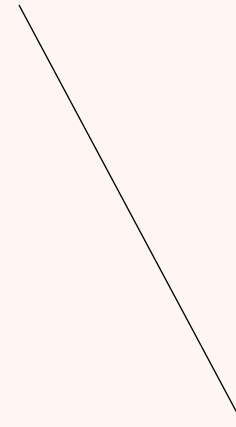
8 OR 16 DAYS, 120 M



10 DAYS, 20 M



HYDROSAT DAILY SURFACE TEMPERATURE



Thermal Enabled Crop Analytics



Surface temperature is the leading remote indicator of crop water stress.

Hydrosat's crop analytics are powered by surface temperature data. We leverage our peerless temperature data collection capabilities to provide crop analytics platforms and data streams.

Now: **Crop Yield Forecast**

Soon: **Irrigation Management**



Crop Yield Forecast Product



County-Level Crop Yield
Forecasting

Vegetation Health

Crop Water Stress

Crop Mapping

API & Web Platform Delivery

PREVIEW



Yield Forecast Value



Coverage

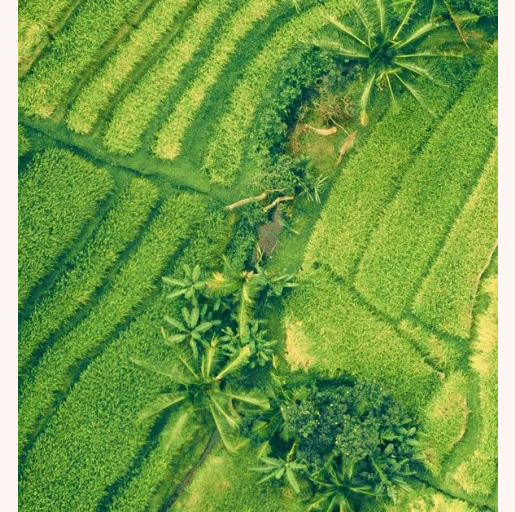
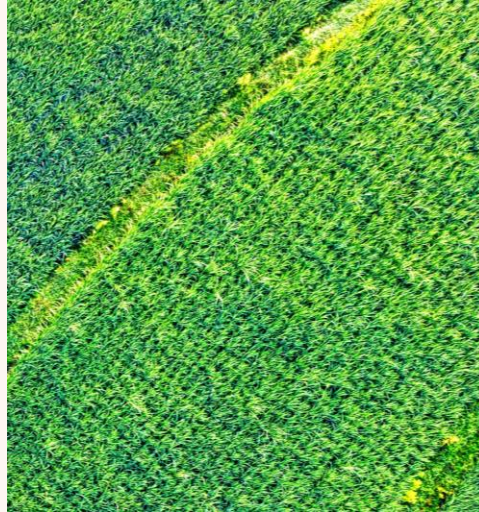
- Provides county, state and national results
- Covers the entire United States
- Covers five different crops

Pace

- Crop map is available 7 months earlier than USDA
- Forecast is released 2 weeks earlier than USDA
- Forecast is updated every two weeks

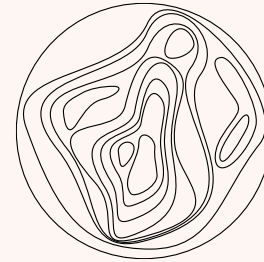
Access

- Proprietary analytics pipeline validated by the European Space Agency
- Easy data export through CSV files



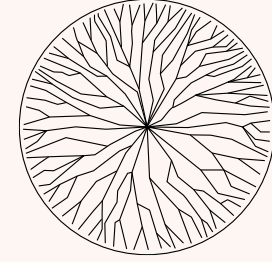
Continuous Improvements

We continue to improve the crop yield forecast to be responsive to customer requirements.



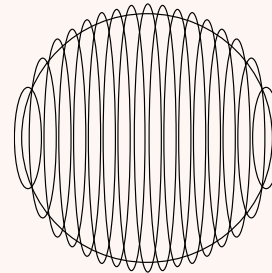
01 NEW GEOGRAPHIES

Expanding coverage to Brazil, Canada, Belgium, France, Netherlands, UK and others



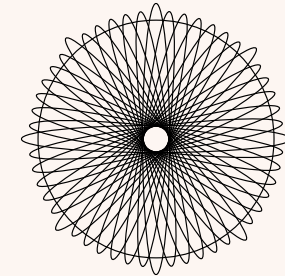
02 MORE CROPS

Adding sugarcane, sugar beets, rapeseed, potatoes and other crops



03 MORE FREQUENCY

Forecasts will soon be updated weekly, and eventually daily



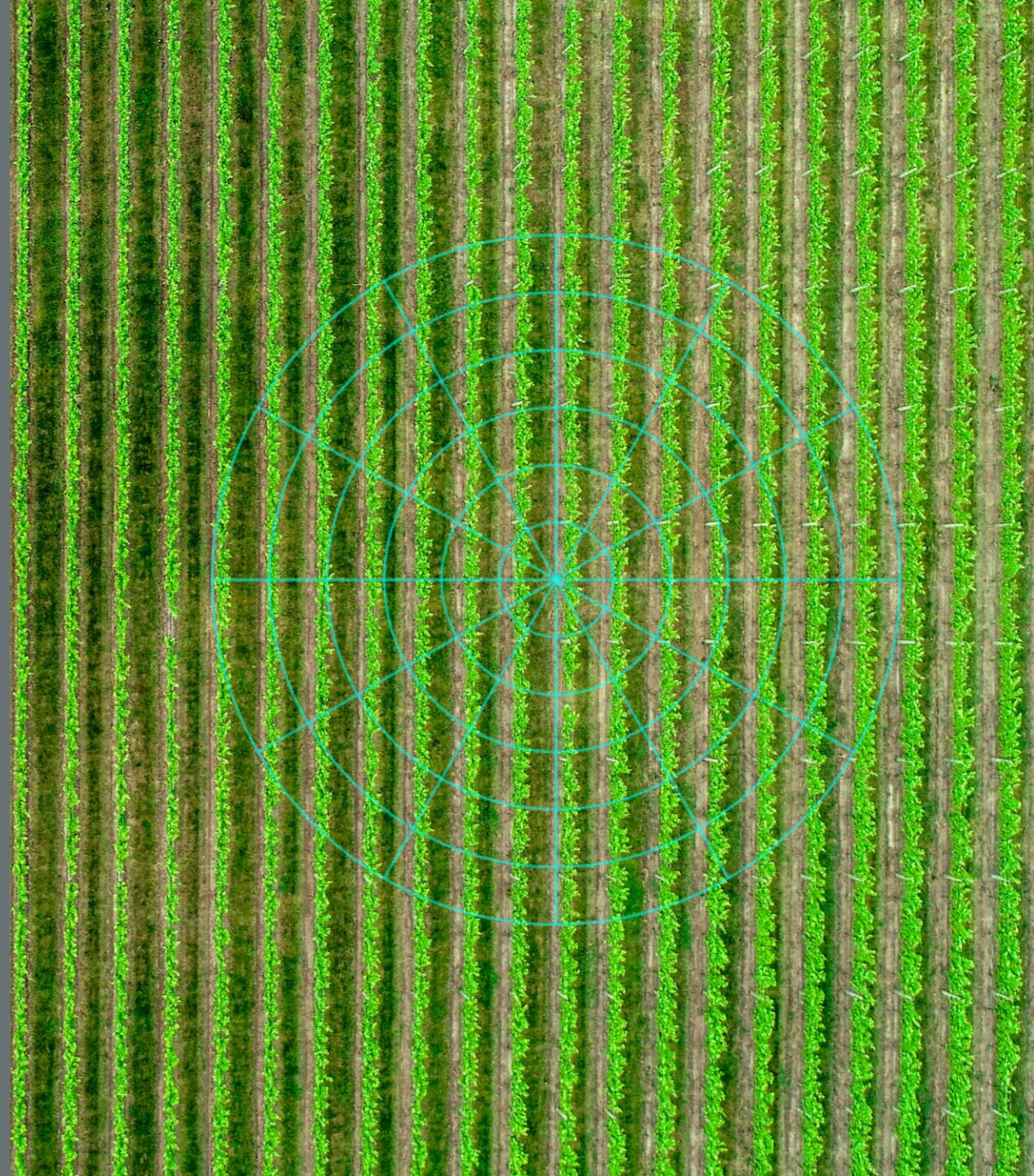
04 MORE DATA

Hydrosat's first satellite will be launched in late 2023 with more to follow

Future Product

Hydrosat is developing an Irrigation Management tool that will provide decision support for farmers to know when and how much to irrigate crops.

Our tool will help farmers reduce their water, energy, and labor while boosting crop yields by 20%.



Thank you

Pieter Fossel, CEO

pieter@hydrosat.com

