

IBM Environmental Intelligence Suite Data Set Summary

9 July 2021

More than 750 Curated Data Layers

Buoy Data Wave Summary

SWD
SWH
SWP
WWD
WWH

Bureau of Labor Statistics

Employment
Labor force
Unemployment
Unemployment rate

COSMIC Atmospheric Weather

Pressure
Refractivity analyzed
Refractivity observed
Temperature
Vapor pressure

CFSv2 Ocean Model

Current towards east
Current towards north
Cyclone heat potential
Depth below sea surface
Downward heat flux
Evaporation precipitation
Heat content
Ice drift towards east
Ice drift towards north
Ice thickness
Momentum flux towards east
Momentum flux towards north

CFSv2 Ocean Model (continued)

Potential temperature
Salinity
Sea ice cover
Sea surface height
Snow depth
Temperature
Vertical velocity

CFSv2 Seasonal Weather Forecast

Accumulated snow depth
Albedo
Downward shortwave radiative flux
Geopotential height
High cloud cover
Low cloud cover
Maximum temperature
Middle cloud cover
Minimum temperature
Near IR beam downward solar flux
Near IR diffuse downward solar flux
Precipitable water
Precipitation rate
Pressure
Rain (categorical)
Snow cover
Snow depth
Snowfall rate
Specific humidity
Temperature
Total cloud cover
Visible beam downward solar flux
Visible diffuse downward solar flux
Wind towards east (10 m)
Wind towards north (10 m)

CFSv2 Seasonal Weather Forecast (Climatology)

Clear sky downward solar flux
Maximum temperature
Minimum temperature
Precipitable water content
Precipitation rate
Snow cover
Snow depth
Snowfall rate
Specific humidity
Surface pressure
Temperature
Wind towards east
Wind towards north

Copernicus Land Cover ¹

Bare cover
Bare cover (std)
Classification
Classification probability
Cropland cover
Cropland cover (std)
Data density
Forest type
Grass cover
Grass cover (std)
Moss cover
Moss cover (std)

Copernicus Land Cover (continued)

Permanent water cover
Seasonal water cover
Shrub cover
Shrub cover (std)
Snow cover
Tree cover
Tree cover (std)
Urban cover

Daymet 35 year Avg Historical Climate

Maximum temperature
Max temperature standard deviation
Minimum temperature
Min temperature standard deviation
Precipitation rate
Precipitation rate standard deviation
Short wave radiation
Short wave rad standard deviation
Snow water equivalent
Snow water equivalent standard deviation
Vapor pressure
Vapor pressure standard deviation

Descartes Labs US Mobility

Critical mobility index – 4 week rolling mobility
Mobility index
Mobility index – 7 day rolling
Relative difference – mobility index – critical
Mobility index
Sample size

■ = New

¹Available to Trial users

²Available only as graphics

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ECMWF 10-Day Weather Forecast ²

Cloud cover
Convective precipitation rate
Dewpoint
Ground temperature
Maximum precipitation rate
Minimum precipitation rate
Solar irradiance (direct normal irradiance)
Solar irradiance (global horizontal irradiance)
Surface albedo
Surface pressure
Total precipitation
Wind towards east (10 m)
Wind towards east (100 m)
Wind towards north (10 m)
Wind towards north (100 m)

ECMWF Coarse 10-Day Weather Forecast ²

Maximum temperature (daily)
Minimum temperature (daily)
Precipitation (daily)
Soil water (layer 1)
Soil water (layer 2)
Soil water (layer 3)
Soil water (layer 4)

ECMWF Daily 10-Day Weather Forecast ²

Maximum temperature
Minimum temperature
Precipitation
Soil water (layer 1)
Soil water (layer 2)
Soil water (layer 3)
Soil water (layer 4)

ECMWF Derived 46-day Weather Forecast ²

10 meter wind gust
10 meter wind towards east
10 meter wind towards north
Dewpoint
High cloud cover
Low cloud cover
Maximum temperature
Mean sea level pressure
Medium cloud cover
Minimum temperature
Snow albedo
Snow density
Snow depth
Snowfall
Solar radiation
Surface pressure
Temperature
Total cloud cover
Total column water
Total column water vapor
Total precipitation
Volumetric soil water layer 1
Volumetric soil water layer 2
Volumetric soil water layer 3
Volumetric soil water layer 4

ECMWF Derived Atmospheric Weather ²

Divergence
Fraction of cloud cover
Geopotential
Ozone mass mixing ratio
Potential vorticity
Relative humidity
Specific cloud ice water content
Specific cloud liquid water content
Specific humidity
Temperature
Vertical velocity
Vorticity (relative)
Wind towards east
Wind towards north

ECMWF Derived Global Weather ²

10 meter wind gust (max)
10 meter wind gust (max) (6 & 18 UTC)
10 meter wind towards east
10 meter wind towards north
Atmospheric water content
Atmospheric water vapor content
Dewpoint
High cloud cover
Low cloud cover
Maximum temperature
Mean sea level pressure
Medium cloud cover
Minimum temperature
Sea surface temperature
Snow albedo
Snow density
Snow depth

ECMWF Derived Global Weather, (continued) ²

Snowfall (12 h interval)
Snowfall (6 h interval)
Soil water (0 to 7 cm)
Soil water (100 to 289 cm)
Soil water (28 to 100 cm)
Soil water (7 to 28 cm)
Solar radiation (12 h interval)
Solar radiation (6 h interval)
Surface pressure
Temperature
Total cloud cover
Total precipitation (12 h interval)
Total precipitation (6 h interval)

ECMWF Derived Historical Climate ²

2 meter temperature mean (t2m mean)
2 meter temperature std (t2m std)
10 meter wind speed mean (si10 mean)
10 meter wind speed std (si10 std)
10 meter wind towards east (mean)
10 meter wind towards east (std)
10 meter wind towards north (mean)
10 meter wind towards north (std)
Ice temperature layer 1 mean (istl1 mean)
Ice temperature layer 1 std (istl1 std)
Mean sea level pressure mean (msl mean)
Mean sea level pressure std (msl std)
Sea ice cover mean (ci mean)
Sea ice cover std (ci std)
Sea surface temperature mean (sst mean)
Sea surface temperature std (sst std)
Soil temperature layer 1 mean (stl1 mean)
Soil temperature layer 1 std (stl1 std)
Total cloud cover mean (tcc mean)
Total cloud cover std (tcc std)

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ECMWF ENS Ocean Wave Forecast ²

Mean direction of total swell
Mean period of total swell
Significant height of total swell

ECMWF Latest 10-Day Weather Forecast ²

Cloud cover
Convective precipitation rate
Daily maximum temperature
Daily minimum temperature
Daily precipitation
Dewpoint
Ground temperature
Maximum precipitation rate
Maximum temperature
Minimum precipitation rate
Minimum temperature
Precipitation rate
Solar irradiance (direct normal)
Solar irradiance (global horizontal)
Surface albedo
Surface pressure
Volumetric soil water (0 to 7 cm)
Volumetric soil water (7 to 28 cm)
Volumetric soil water (28 to 100 cm)
Volumetric soil water (100 to 289 cm)
Wind towards east (10 m)
Wind towards east (100 m)
Wind towards north (10 m)
Wind towards north (100 m)

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Epidemiology Covid 19 ¹

Confirmed
Current impact
Current trend
Daily_cases_per_100000_capita
Daily_fatalities_per_100000_capita
Daily percentage growth cases
Daily percentage growth fatalities
Day14_percentage_growth_cases
Day14_percentage_growth_fatalities
Days to double cases
Days to double fatalities
Fatal
Projected trend
Recovered
Wow percentage growth cases
Wow percentage growth fatalities

Epidemiology Covid 19 (Impact Study) ¹

Count

ERA5 Atmospheric Weather ¹

Geopotential
Relative humidity
Temperature

ERA5 Derived Global Climate

10 meter u wind component
10 meter v wind component
100 meter u wind component
100 meter v wind component
Dewpoint
Maximum temperature
Minimum temperature
Solar radiation
Surface pressure
Temperature
Total cloud coverage
Total precipitation

ERA5 Global Weather

10 meter wind gust (instantaneous)
10 meter wind gust (maximum)
10 meter wind towards east
10 meter wind towards north
100 meter wind towards east
100 meter wind towards north
Angle of sub grid scale orography
Anisotropy of sub grid scale orography
Atmospheric water content
Atmospheric water vapor content
Dewpoint
Gravitational potential energy
High cloud cover
High vegetation cover
Lake cover
Lake depth
Land sea mask
Low cloud cover
Low vegetation cover

ERA5 Global Weather (continued)

Maximum precipitation rate
Maximum temperature
Mean sea level pressure
Medium cloud cover
Minimum precipitation rate
Minimum temperature
Precipitation type
Rain water content of atmosphere
Sea surface temperature
Slope of sub grid scale orography
Snow density
Snow depth
Snow water content of atmosphere
Snowfall
Soil temperature (0 to 7 cm)
Soil temperature (7 to 21 cm)
Soil temperature (21 to 72 cm)
Soil temperature (72 to 189 cm)
Soil type
Soil water (0 to 7 cm)
Soil water (7 to 21 cm)
Soil temperature (21 to 72 cm)
Soil temperature (72 to 189 cm)
Solar radiation
Solar radiation (clear sky)
Solar radiation (top of atmosphere)
Solar radiation (top of atmosphere) (clear sky)
Solar radiation (total sky)
Standard deviation of orography
Sub grid scale elevation (standard deviation)
Surface pressure
Temperature
Thermal radiation

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ERA5 Global Weather (continued)

Thermal radiation (clear sky)
Thermal radiation (top of atmosphere)
Thermal radiation (top of atmosphere) (clear sky)
Total cloud cover
Total precipitation
Type of high vegetation
Type of low vegetation
Wave direction
Wave height
Wave period

ESA Sentinel 1 Satellite Based Radar

VH polarization
VV polarization

ESA Sentinel 2 High Resolution TOA

Band 4 (red)
Band 8 (NIR)
Band 10 (SWIR 1370 nm)
Hollstein
Band 1 (coastal aerosol)
Band 10 (TIRS 1)
Band 11 (TIRS 2)
Band 2 (blue)
Band 3 (green)
Band 4 (red)
Band 5 (NIR)
Band 6 (SWIR 1)
Band 7 (SWIR 2)
Band 9 (cirrus)
Quality assessment

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ESA Sentinel 2 High Resolution

Aerosol optical thickness
Band 1 (coastal aerosol)
Band 11 (SWIR 1610 nm)
Band 12 (SWIR 2200 nm)
Band 2 (blue)
Band 3 (green)
Band 4 (red)
Band 5 (vegetation red edge)
Band 6 (vegetation red edge)
Band 7 (vegetation red edge)
Band 8 (NIR)
Band 8a (narrow IR)
Band 9 (water vapor)
Cloud probability map
Normalized difference vegetation index
Scene classification
Water vapor

FAA UAS Controlled Airspace

Permissible Altitude

GDELT News Coverage¹

News Fraction

GFS 16 day Weather Forecast

Average precipitation
Ground relative humidity
Ground temperature
Maximum temperature
Minimum temperature

GFS 16 day Weather Forecast (continued)

Solar irradiance (GHI)
Surface pressure
Wind toward north (100m)
Wind toward north (10m)
Wind towards east (100m)
Wind towards east (10m)

GFS Daily 16 day Weather Forecast

Daily maximum temperature
Daily minimum temperature
Daily precipitation
Volumetric soil water (layer 1)
Volumetric soil water (layer 2)
Volumetric soil water (layer 3)
Volumetric soil water (layer 4)

GFS Latest 16 day Weather Forecast¹

100 meter wind towards east
100 meter wind towards north
Average precipitation
Ground relative humidity
Ground temperature
Maximum temperature
Minimum temperature
Solar irradiance
Surface pressure
Volumetric soil moisture (0 to 10 cm)
Volumetric soil moisture (10 to 40 cm)
Volumetric soil moisture (40 to 100 cm)
Volumetric soil moisture (100 to 200 cm)
Wind towards east
Wind towards north

Global Crop Land

250m Crop fraction
500m Crop fraction
1km crop dominance
1km Crop fraction
2km Crop fraction
4km Crop fraction
8km Crop fraction
15km Crop fraction
29km Crop fraction
Global 30m cropland

GMTED 2010 Elevation 250 m

Elevation max
Elevation mean
Elevation median
Elevation min
Elevation standard deviation

GOES 16 Near Real Time Imagery

Green image
Near infrared image
Red image
Thermal infrared image

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HRRR Hourly North America Weather Forecast **HRRR Sub Hourly North America Weather Forecast**

10 meter wind towards east
10 meter wind towards north
10 meter wind speed
2 meter dewpoint temperature
2 meter temperature
80 meter wind towards east
80 meter wind towards north
Downward long wave radiation flux
Downward short wave radiation flux
High cloud cover
Low cloud cover
Medium cloud cover
Percent frozen precipitation
Precipitation rate
Snow cover
Snow depth
Surface pressure
Upward long wave radiation flux
Upward short wave radiation flux
Visibility
Visible beam downward solar flux
Visible diffuse downward solar flux
Wind speed (gust)

10 meter wind towards east
10 meter wind towards north
2 meter dewpoint temperature
2 meter temperature
80 meter wind towards east
80 meter wind towards north
Downward long wave radiation flux
Downward short wave radiation flux
Percent frozen precipitation
Precipitation rate
Surface pressure
Upward long wave radiation flux
Upward short wave radiation flux
Visibility
Visible beam downward solar flux
Visible diffuse downward solar flux
Wind speed (gust)

IBM Derived Evapotranspiration

ECMWF based reference evapotranspiration
GFS based reference evapotranspiration
NAM based reference evapotranspiration

IBM TWC Current & Historical Wx

Dew point
Driving index
Maximum temperature past 24 h
Minimum temperature past 24 h
Precip past 1 h
Precip past 6 h
Precip past 24 h
Pressure change past 3 h
Relative humidity surface
Sensible weather
Snow past 1 h
Snow past 24 h
Snow past 6 h
Temperature above ground
Temperature change past 24 h
Temperature feels like
UV index
Visibility surface
Wind direction
Wind gust
Wind speed above

JAXA ALOS 3D Elevation 30 m

Auxiliary data source
Global elevation
Quality

Land Use Australia

Catchment scale land use
Low res land use 1992 (ALUM)
Low res land use 1992 (raw data)
Low res land use 1993 (ALUM)
Low res land use 1993 (raw data)
Low res land use 1996 (ALUM)
Low res land use 1996 (raw data)
Low res land use 1998 (ALUM)
Low res land use 1998 (raw data)
Low res land use 2000 (ALUM)
Low res land use 2000 (raw data)
Low res land use 2001 (ALUM)
Low res land use 2001 (raw data)
Low res land use 2005 (ALUM)
Low res land use 2005 (raw data)
Low res land use 2010 (ALUM)
Low res land use 2010 (raw data)

NAM 60 Hour Weather Forecast ¹

Ground pressure
Ground relative humidity
Ground temperature
Precipitation
Snow depth
Solar irradiance
Water equivalent of accumulated snow
Wind toward east
Wind toward north

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NASA LANCE Near Real Time Earth

Observations

Bright_t31
Bright_ti4
Bright_ti5
Brightness
Confidence
FRP
FRP
Scan VIIRS pixels
Scan actual pixel size
Track VIIRS pixels
Track actual pixel size

NASA Landsat 8 TOA High Resolution

Band 1 (coastal aerosol)
Band 2 (blue)
Band 3 (green)
Band 4 (red)
Band 5 (NIR)
Band 6 (SWIR 1)
Band 7 (SWIR 2)
Band 9 (cirrus)
Band 10 (TIRS 1)
Band 11 (TIRS 2)
Quality assessment

NASA MODIS Aqua 8 day 250 m¹

Band 3 (blue)
Band 4 (green)
Band 5 (SWIR1)
Band 6 (SWIR2)
Band 7 (SWIR3)
Day of year
Near infrared (band 2)
Red (band 1)

NASA MODIS Aqua 16 day 250 m¹

Blue (band 3)
Composite day of the year
Mid infrared (band 7)
Near infrared (band 2)
Normalized difference vegetation index
Red (band 1)
Vegetation index quality assessment

NASA MODIS Aqua Daily 500 m Imagery

Blue
Green
Surface reflectance b04 green
Surface reflectance b04 SWIR1

NASA MODIS Burned Area

Burned area
Uncertainty

NASA MODIS Daily 250 m Imagery¹

Near infrared (band 2) (Aqua)
Near infrared (band 2) (Terra)
Quality index (Aqua)
Quality index (Terra)
Red (band 1) (Aqua)
Red (band 1) (Terra)

NASA MODIS Terra 8 day 250 m¹

Band 3 (blue)
Band 4 (green)
Band 5 (SWIR1)
Band 6 (SWIR2)
Band 7 (SWIR3)
Day of year
Near infrared (band 2)
Red (band 1)

NASA MODIS Terra 16 day 250 m¹

Blue (band 3)
Composite day of the year
Mid infrared (band 7)
Near infrared (band 2)
Normalized difference vegetation index
Red (band 1)
Vegetation index quality assessment

NASA MODIS Terra Daily 500 m Imagery

Blue
Green

NASA SRTM Elevation 30 m

Elevation

NOAA CPC Global Weather

Maximum temperature
Minimum temperature
Precipitation

NOAA Daily Global Weather

Maximum temperature
Minimum temperature
Precipitation
Volumetric soil water (0 to 10 cm)
Volumetric soil water (1 to 2 m)
Volumetric soil water (10 to 40 cm)
Volumetric soil water (40 to 100 cm)

NSIDC USA Snow Coverage

Snow depth
Snow water equivalent

PRISM Daily US Weather¹

Daily maximum temperature
Daily maximum temperature normal
Daily maximum temperature std deviation
Daily mean temperature
Daily mean temperature normal
Daily mean temperature std deviation
Daily minimum temperature
Daily minimum temperature normal
Daily minimum temperature std deviation
Daily precipitation
Daily precipitation normal
Daily precipitation std deviation

SEDAC Global Population¹

Global population density



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SoilGrids

Bulk density
Cation exchange capacity
Clay
Coarse fragments
Nitrogen
Organic carbon density
Organic carbon stocks
pH
Sand
Silt
Soil class probability
Soil classification most probable class
Soil organic carbon

TWC Seasonal Weather Forecast

Average temperature
Maximum temperature
Minimum temperature
Total precipitation

US NED 10 m Elevation¹

USA elevation

USA Census (Raster)¹

Income mean
Income median
Population density

USA Census (Vector)¹

Population
Total estimated median age
Total margin of error
Male estimated median age
Male margin of error
Female estimated median age
Female margin of error
Total estimated median age
Total margin of error
Male estimated median age
Male margin of error
Female estimated median age
Female margin of error
Estimated median income
Margin of error
Estimated median income
Margin of error
Estimated median value
Margin of error
Estimated median value
Margin of error
Total estimate
Total margin of error
Total estimate
Total margin of error

USA Historical Crop Planting Map¹

Crop 250 m
Crop 30 m
Cultivated land mask

USA Soil Properties

Clay (0 to 50 cm)
Clay (0 to 50cm) (coarse)
Clay (100 to 150 cm)
Clay (50 to 100 cm depth)
Sand (0 to 50 cm)
Sand (0 to 50 cm) (coarse)
Sand (100 to 150 cm)
Sand (50 to 100 cm)
Silt (0 to 50 cm)
Silt (0 to 50cm) (coarse)
Silt (100 to 150 cm)
Silt (50 to 100 cm)
Sum (0 to 50 cm)
Sum (0 to 50 cm) (coarse)
Sum (100 to 150 cm)
Sum (50 to 100 cm)
Texture (0 to 50 cm)
Texture (0 to 50 cm) (coarse)
Texture (100 to 150 cm)
Texture (50 to 100 cm)
Water holding capacity (0 to 50 cm)
Water holding capacity (0 to 50 cm) (coarse)
Water holding capacity (100 to 150 cm)
Water holding capacity (50 to 100 cm)

USDA NAIP High Resolution Aerial Imagery

1 meter blue band
1 meter green band
1 meter near infrared
1 meter red band
50 cm blue band
50 cm green band
50 cm near infrared band
50 cm red band

USDA Wildfire Risk Potential

Fire potential index
Wildfire hazard potential

USFS Wildland Fire

10 hour fuel moisture
100 hour fuel moisture
1000 hour fuel moisture
Fire danger rating
Fire danger index

US Healthcare Infrastructure

Available hospital beds
Available ICU beds
Hospital beds
Nursing home beds
Helipad
Population
Status
Total hospital beds
Total ICU beds
Trauma
Type of operation
Type of emergency service

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