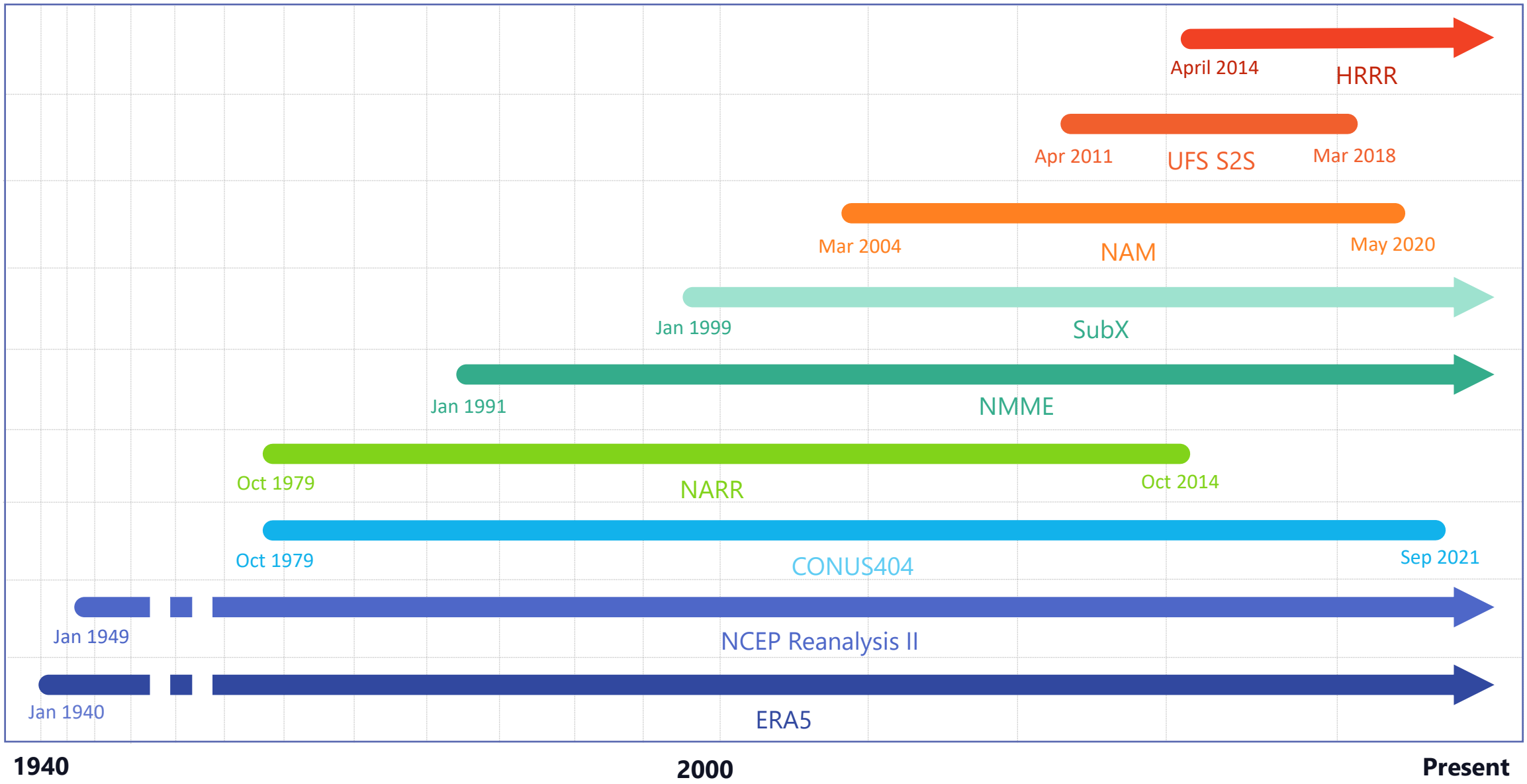
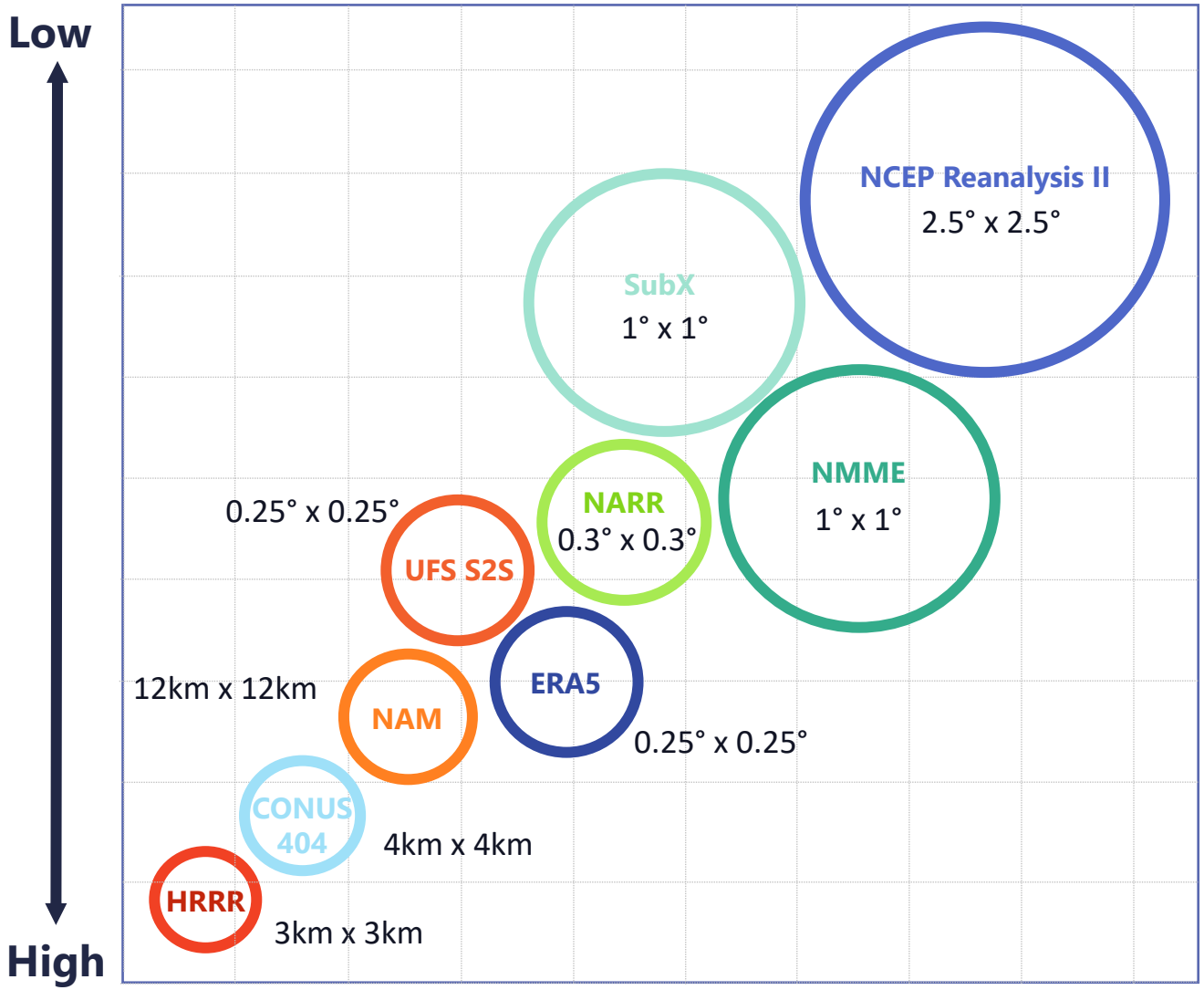
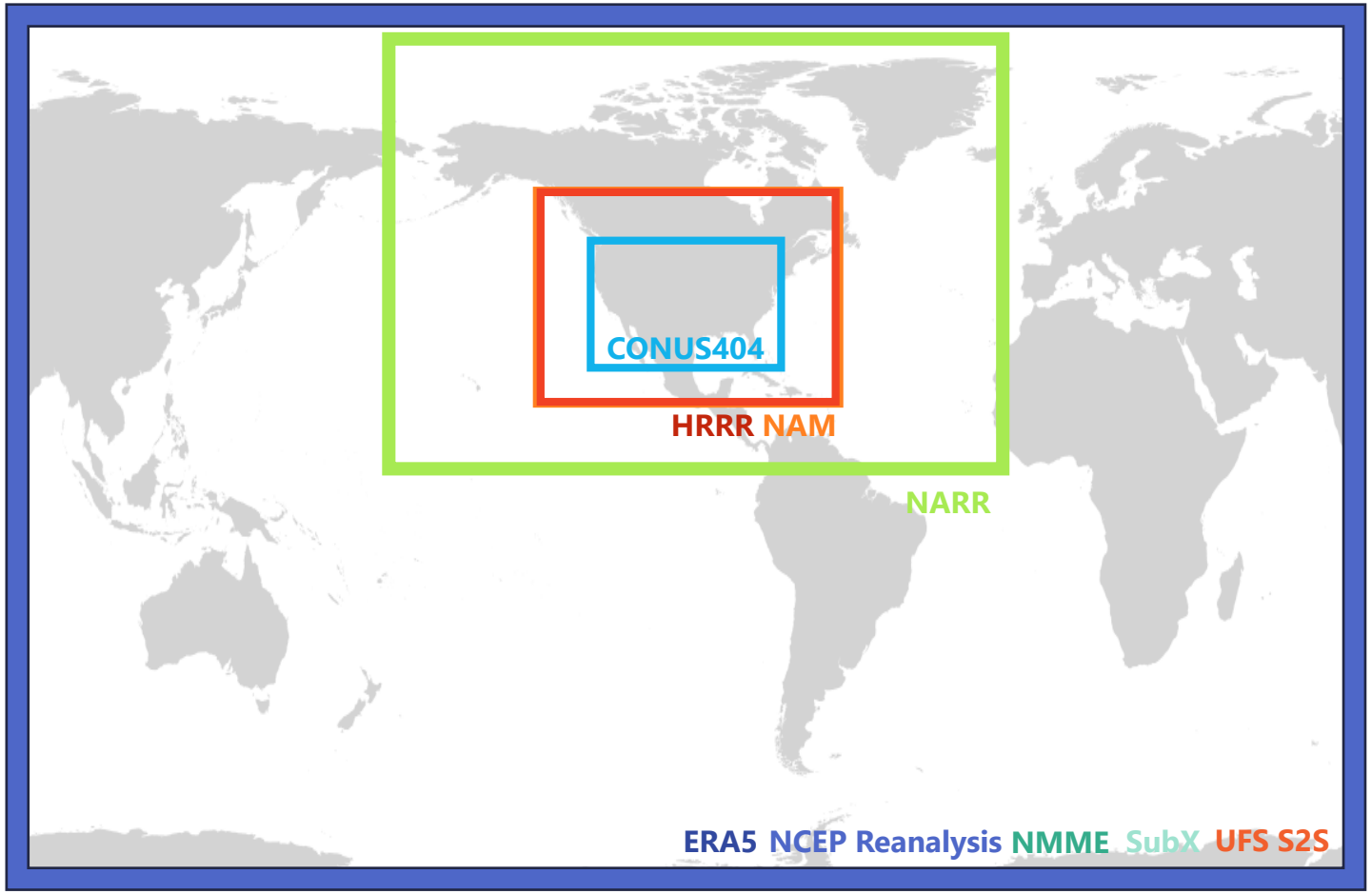
Name	Dates Available	Temporal Resolution	Spatial Resolution	Domain	Projection
CONUS404	October 1979–September 2021	Hourly	4km x 4km (≈ 0.036°)	CONUS	Latitude/longitude
UFS S2S	Apr 2011-Mar 2018	Hourly; initialized 2x monthly, out to 35 days	0.25° x 0.25°	Global	Latitude/longitude
ERA5	1940 to Present	Hourly	0.25° x 0.25°	Global	Latitude/longitude
NCEP Reanalysis	1949 to Present	4x Daily	2.5° x 2.5°	Global	Latitude/longitude
NAM Reanalysis	Mar 02, 2004–May 15, 2020	4x Daily	12km x 12km (~0.108°)	North America	Lambert Conformal
NARR Reanalysis	Jan 01, 1979- Oct 02, 2014	8x Daily	0.3° x 0.3° (~32km)	North America	Lambert Conformal
HRRR Reanalysis	2015 to Present	Hourly	3km x 3km (~0.027°)	CONUS	Lambert Conformal
NNME Retrospective	1991 to Present	Daily	1° x 1° ()	Global	
SubX(C) Retrospective	1999 to Present	Daily	1° x 1° ()	Global	

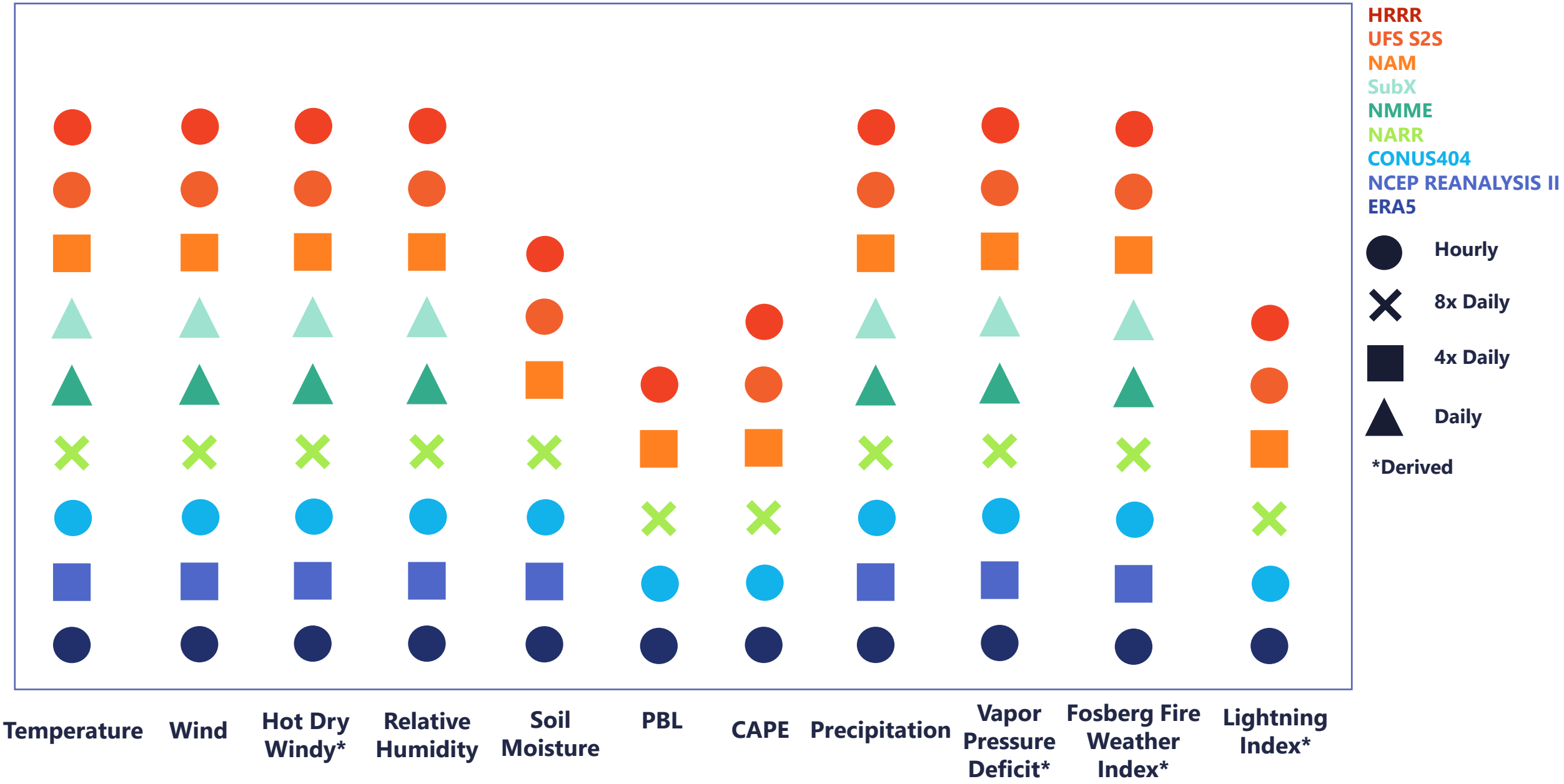
Temporal Range

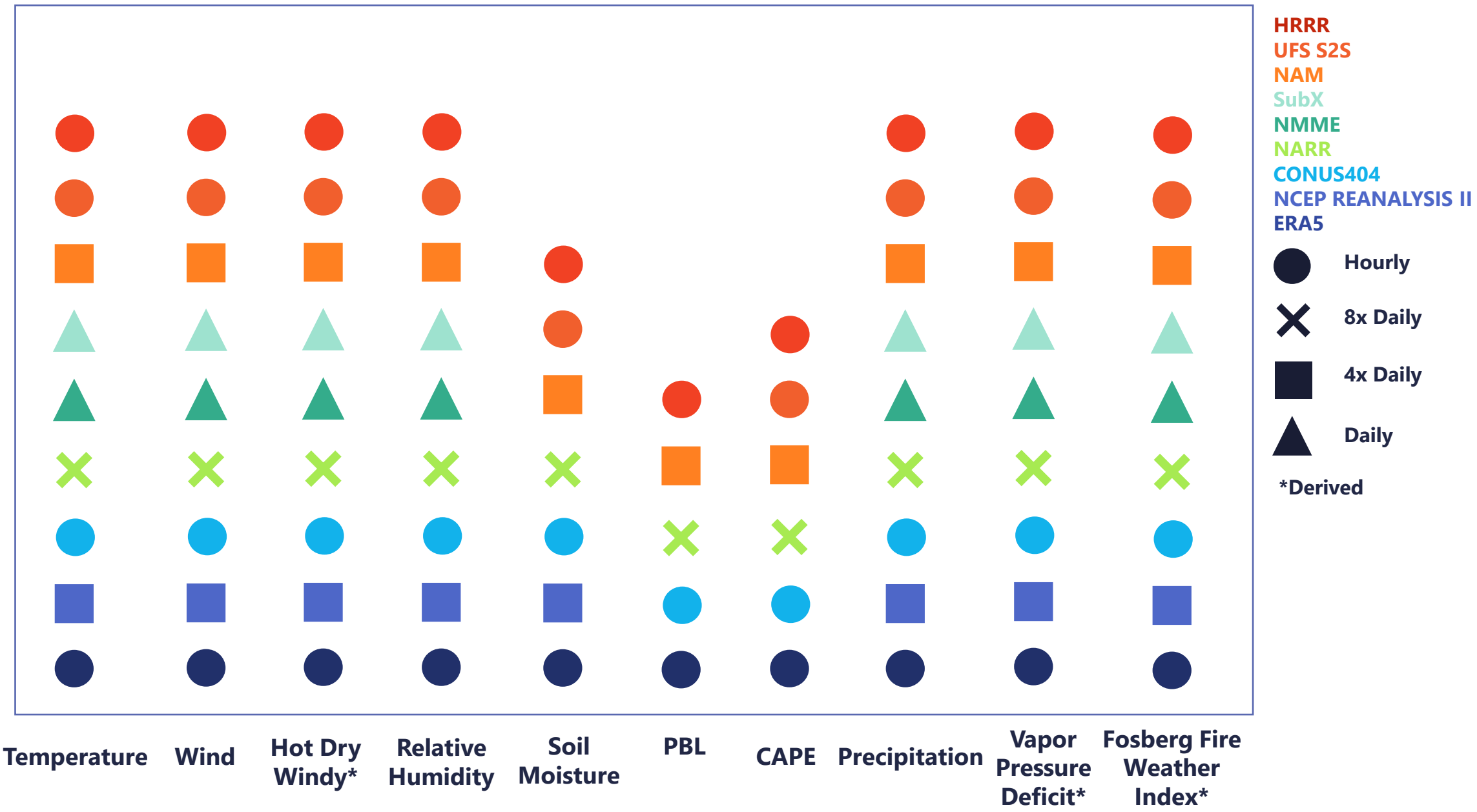


Resolution


Low
High
NCEP Reanalysis II
2.5° x 2.5°
SubX
1° x 1°
NMME
1° x 1°
NARR
0.3° x 0.3°
0.25° x 0.25°
UFS S2S
ERA5
0.25° x 0.25°
12km x 12km
NAM
CONUS 404
4km x 4km
HRRR
3km x 3km


CONUS404
HRRR NAM
NARR
ERA5 NCEP Reanalysis NMME SubX UFS S2S


HRRR
UFS S2S
NAM
SubX
NMME
NARR
CONUS404
NCEP REANALYSIS II
ERA5
Hourly
8x Daily
4x Daily
Daily
*Derived
Temperature
Wind
Hot Dry Windy*
Relative Humidity
Soil Moisture
PBL
CAPE
Precipitation
Vapor Pressure Deficit*
Fosberg Fire Weather Index*
Lightning Index*


HRRR
UFS S2S
NAM
SubX
NMME
NARR
CONUS404
NCEP REANALYSIS II
ERA5
Hourly
8x Daily
4x Daily
Daily
*Derived
Temperature
Wind
Hot Dry Windy*
Relative Humidity
Soil Moisture
PBL
CAPE
Precipitation
Vapor Pressure Deficit*
Fosberg Fire Weather Index*

Calculation overview

VPD = vapor pressure deficit in Pa
WS = wind speed in m/s
# = not-to-scale fake value for example

For a given dataset, for a given day, MM-DD-YYYY, with 4 timesteps:

VPD 00z x WS 00z = HDWI 00z → 10 00z

VPD 06z x WS 06z = HDWI 06z → 100 06z

VPD 12z x WS 12z = HDWI 12z → 1000 12z

VPD 18z x WS 18z = HDWI 18z → 10000 18z

HDWI_ABS _MMDDYYYY

24-H resample

→

HDWI_MAX_MMDDYYYY = 10000

HDWI_MIN _MMDDYYYY = 10

HDWI_AVG _MMDDYYYY = 2777.5