

Supplementary material for the manuscript entitled

TReAD: 40-year Taiwan Reanalysis Downscaling Dataset at 2 km

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Table S1. Names, elevations, longitudes and latitudes of the used CWA observation stations

Number	Name	Elevation above sea level (m)	Longitude	Latitude
1	Tamsui	19	121.4489	25.1649
2	Anbu	825.8	121.5297	25.1826
3	Taipei	6.3	121.5149	25.0377
4	Zhuzihu	607.1	121.5445	25.1621
5	Keelung	26.7	121.7405	25.1333
6	Hualien	16	121.6133	23.9751
7	Yilan	7.2	121.7565	24.764
8	Dongjidao	43	119.6675	23.257
9	Penghu	10.7	119.5631	23.5655
10	Tainan	40.8	120.2048	22.9932
11	Kaohsiung	2.3	120.3157	22.566
12	Taichung	84	120.6841	24.1457
13	Alishan	2413.4	120.8132	23.5082
14	Dawu	8.1	120.9038	22.3557
15	Yushan	3844.8	120.9595	23.4876
16	Hengchun	22.1	120.7463	22.0039
17	Chenggong	33.5	121.3734	23.0975
18	Lanyu	324	121.5583	22.037
19	Sunmoonlake	1017.5	120.9081	23.8813
20	Taitung	9	121.1546	22.7522

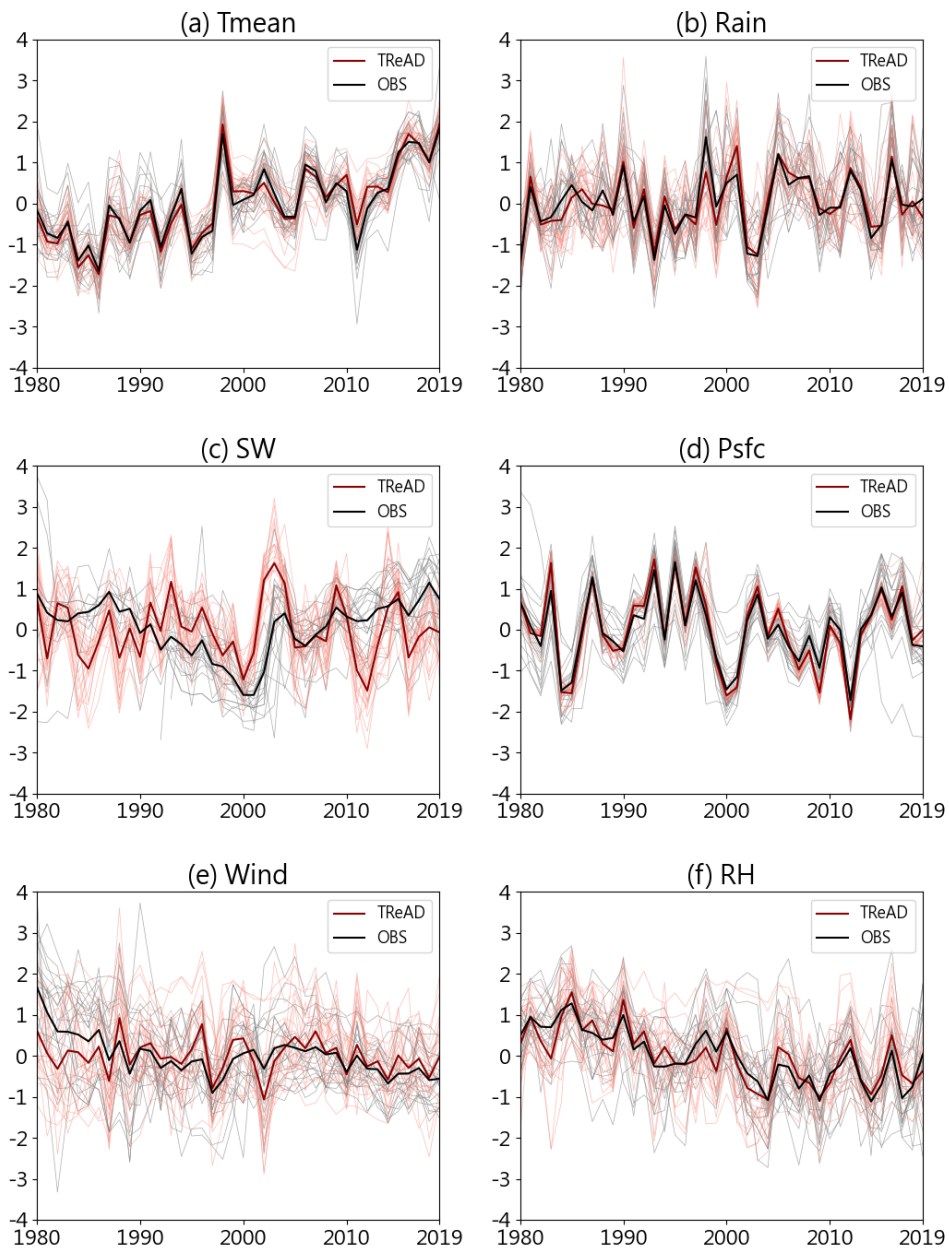


Figure S1. Annual time series of the six ECVs for TReAD and CWA data sets for the period from 1980 to 2019.

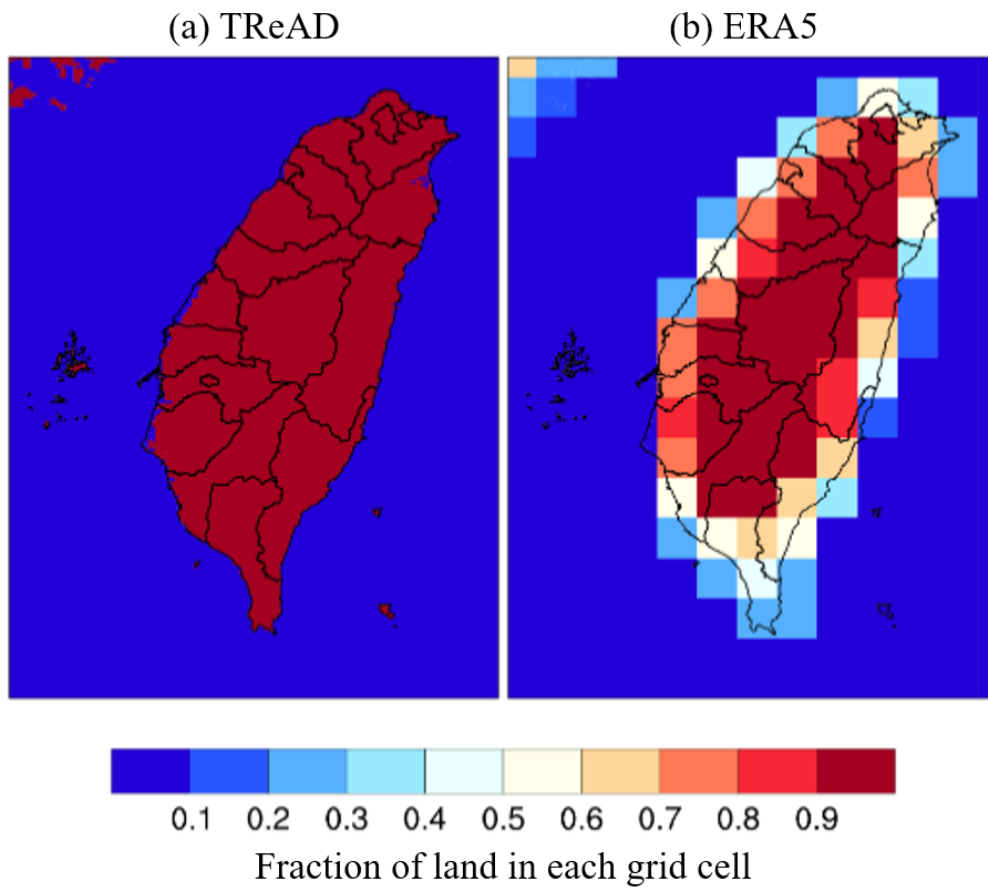


Figure S2. Spatial distribution of the fraction of land in each grid cell of (a) TReAD and (b) ERA5

Table S2. USGS 24 categories of WRF

Land use category	Land use description
1	Urban and Built-Up Land
2	Dryland Cropland and Pasture
3	Irrigated Cropland and Pasture
4	Mixed Dryland/Irrigated Cropland and Pasture
5	Cropland/Grassland Mosaic
6	Cropland/Woodland Mosaic
7	Grassland
8	Shrubland
9	Mixed Shrubland/Grassland
10	Savanna
11	Deciduous Broadleaf Forest
12	Deciduous Needleleaf Forest
13	Evergreen Broadleaf
14	Evergreen Needleleaf
15	Mixed Forest
16	Water Bodies
17	Herbaceous Wetland
18	Wooden Wetland
19	Barren or Sparsely Vegetated
20	Herbaceous Tundra
21	Wooded Tundra
22	Mixed Tundra
23	Bare Ground Tundra
24	Snow or Ice