Mean LST Google Earth Engine open-source code

(developed by authors for calculating the mean day and night LST during summer for the study area)

Northeast Italian viticulture affected by heat and vegetation stress. A Satellite-Based Study from 2000 to 2024

Vincenzo Baldan, Eugenio Straffelini, Vincenzo D’Agostino, and Paolo Tarolli (2025)

// import study area boundaries

//import MODIS LST data and select “'LST\_Night\_1km” or “'LST\_Day\_1km” according to the //variable you want analyze

var mod = ee.ImageCollection('MODIS/061/MOD11A2');

var coll = mod.select('LST\_Night\_1km')

//filter the dataset for the periods and months considered

.filter(ee.Filter.calendarRange(2000, 2004, 'year'))

.filter(ee.Filter.calendarRange(6, 8, 'month'))

//clip the dataset with the study area “table”

.map(function(image){return image.clip(table)});

//convert MODIS data from Kelvin to Celsius

var mod\_series = modLST.map(function(img) {

return img

.multiply(0.02)

.subtract(273.15)

.copyProperties(img, ['system:time\_start']);

});

//Get the mean values

var LST\_day\_mean = mod\_series.mean().clip(table)

Map.addLayer(LST\_day\_mean, {

min: 10, max: 30,

palette: ['blue', 'limegreen', 'yellow', 'darkorange', 'red']},

'Mean temperature');

//Export the raster

Export.image.toDrive({

image: LST\_day\_mean,

description: 'LST\_mean\_day\_Celsius\_2000-2004',

//folder: 'LST\_MODIS',

region: table.geometry().bounds(),

scale: 1000,

crs: 'EPSG:32632',

maxPixels: 1e10});