

Geodiversity: Theory and Applications (GIS Project)

Investigation of Climate Change effect on Dam Lake Area by Utilizing Remote Sensing

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Google Earth Engine

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02_WaterBodyArea

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Imports (4 entries)

- var colorizedVis: from 0 to 1
- var geometry: Polygon, 4 vertices
- var WaterVis_02: from 0 to 1
- var WaterVis_01: from 0 to 1

```
1 // ----- LANDSAT 5 Data (1992):
2 // ===== 1992
3 var dataset_1992 = ee.ImageCollection('LANDSAT/LT05/C01/T1_32DAY_NDWI')
4   .filterDate('1992-07-01', '1992-07-15')
5   .filterBounds(geometry);
6
7 // print(dataset_1992);
8 var data_1992 = dataset_1992.median()
9   .clip(geometry);
10 var NDWI_1992 = data_1992.select('NDWI');
11
12 var water_1992 = ee.Image(1).mask(NDWI_1992.gte(0.1));
13
14 // print(NDWI_1992);
15 // Map.addLayer(NDWI_1992, colorizedVis, 'ND1992');
16
17 var area_1992 = water_1992.multiply(ee.Image.pixelArea())
18   .reduceRegion(ee.Reducer.sum(), geometry, 30, null, null, false, 1e13)
19   .get('constant');
20 // Map.addLayer(water_1992, WaterVis_01, 'W1992');
21 area_1992 = ee.Number(area_1992).divide(1e4);
22 print('area_1992 (He):', area_1992);
23
24
25 // ===== 1996
26 var dataset_1996 = ee.ImageCollection('LANDSAT/LT05/C01/T1_32DAY_NDWI')
27   .filterDate('1996-07-01', '1996-08-01')
28   .filterBounds(geometry);
29
```

Inspector Console Tasks

area_1992 (He): JSON
51426.34061794077

area_1996 (He): JSON
52737.78329955044

area_2002 (He): JSON
46048.98611821298

area_2007 (He): JSON
38829.920921684636

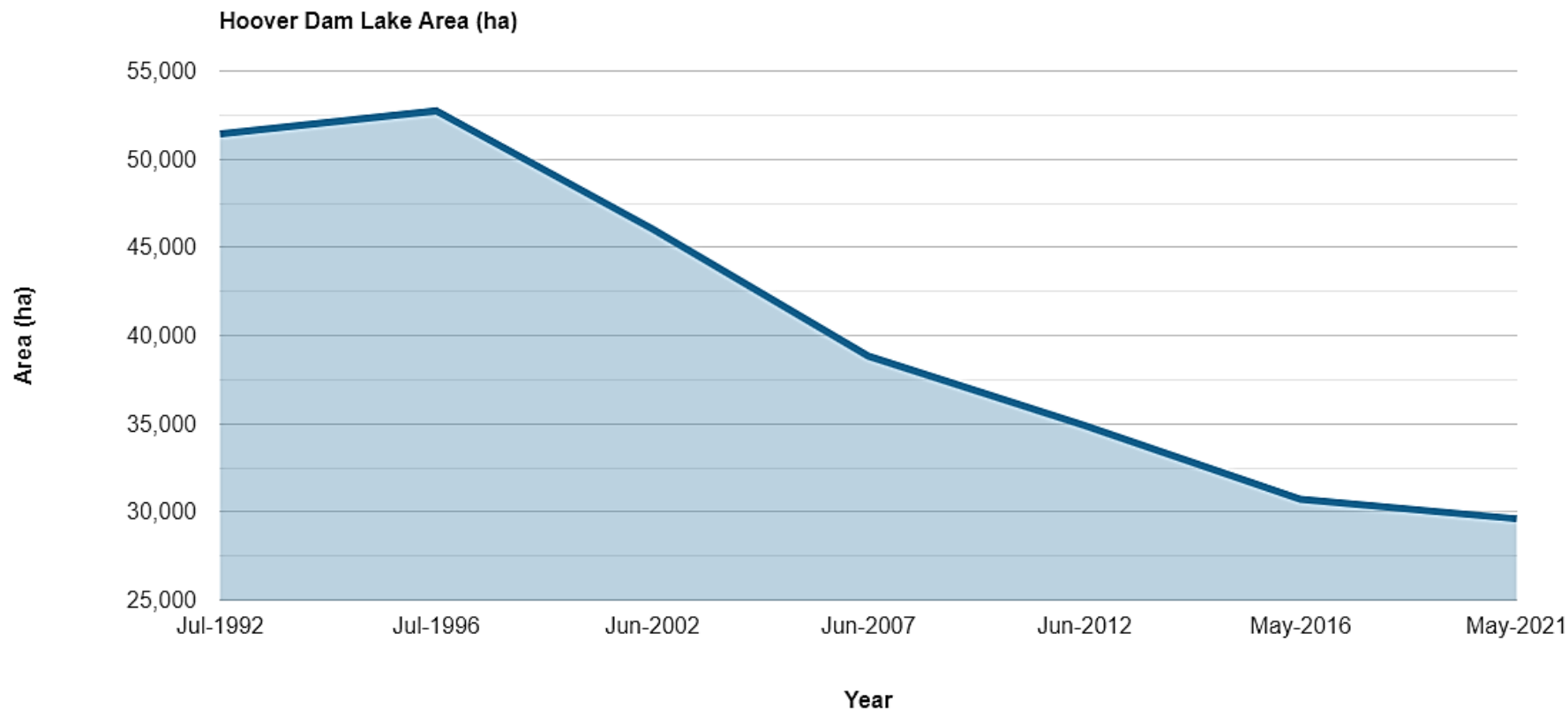
area_2012 (He): JSON
34901.94944469664

area_2016 (He): JSON
30706.97117766503

area_2021 (He): JSON
29611.728636056745

Dam Lake Area Reduction (%): JSON
42.4191410855971

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Course Title:
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University of Milan

Imagery: Landsat 5
Date: July 1992
Product: NDWI
Study Area: Hoover Dam

NDWI
-0.25
0.00
0.10

Total area of pixels with
value greater than 0.1
(hectares): 51426.34

0 5 10 km



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Course Title:
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Imagery: Landsat 8
Date: May 2021
Product: NDWI
Study Area: Hoover Dam

NDWI
-0.25
0.00
0.10

Total area of pixels with
value greater than 0.1
(hectares): 29611.728

0 5 10 km

