Metadata for remote sensing potential maps shapefile “huc12\_allMaps”

Description:

This file has been created by joining the HUC-12 layer in the National Hydrography Dataset’s watersheds geodatabase database with the analyses layers from the following paper:

Sridharan, V.K., Kumar, S.K., and Madhur Kumar, S. In rev. Can remote sensing fill the United States’ monitoring gap for watershed management?

If the shapefile **huc12\_allMaps** from this project is directly available to you, it will contain all the attributes listed in the table below. However, from column 22 onwards, the attributes are named differently in the shapefile, but the order is the same. You can rename the shapefile attributes from the names here for clarity.

If you downloaded the CSV from the GitHub repo, then the shapefile would be unavailable. In that case, please first download the Watershed Boundary Dataset (WBD) from here:

<https://www.usgs.gov/national-hydrography/access-national-hydrography-products>

Click on the “Download the WBD by the Entire Nation” link

<https://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Hydrography/WBD/National/GDB/>

and download the WBD\_National\_GDB.zip file which is 2.3 GB. Then, in ArcGIS or QGIS, open the geodatabase and load only the WBDHU12 layer. Then, perform a table join with the CSV, with the **huc12** field as the primary key.

All the attributes in this metadata layer pertain to each HUC-12 unit.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.No. | Name | Description | Source | Comments | Units |
| 1 | objected |  | NDHPlus |  |  |
| 2 | tnmid |  | NDHPlus |  |  |
| 3 | metasource |  | NDHPlus |  |  |
| 4 | sourcedata |  | NDHPlus |  |  |
| 5 | sourceorig |  | NDHPlus |  |  |
| 6 | sourcefeat |  | NDHPlus |  |  |
| 7 | loaddate |  | NDHPlus |  |  |
| 8 | reference |  | NDHPlus |  |  |
| 9 | areaacres |  | NDHPlus |  |  |
| 10 | areasqm |  | NDHPlus |  |  |
| 11 | states |  | NDHPlus |  |  |
| 12 | huc12 | Primary key | NDHPlus |  |  |
| 13 | name |  | NDHPlus |  |  |
| 14 | hutype |  | NDHPlus |  |  |
| 15 | humod |  | NDHPlus |  |  |
| 16 | tohuc |  | NDHPlus |  |  |
| 17 | noncontrib |  | NDHPlus |  |  |
| 18 | noncontr\_1 |  | NDHPlus |  |  |
| 19 | globalid |  | NDHPlus |  |  |
| 20 | shape\_leng |  | NDHPlus |  |  |
| 21 | shape\_Area |  | NDHPlus |  |  |
| 22 | EnviroAtlasPop | Population | EnviroAtlas |  |  |
| 23 | EnviroAtlasPopL | Population levels | Synthesis | 0 to 6 in decades from <10 to >1,000,000 |  |
| 24 | EnviroAtlasAWD\_MGAL | Agricultural water demand | EnviroAtlas |  | MGD |
| 25 | EnviroAtlasDWD\_mgal | Domestic water demand | EnviroAtlas |  | MGD |
| 26 | EnviroAtlasIWD\_MGAL | Industrial water demand | EnviroAtlas |  | MGD |
| 27 | EnviroAtlasTWW\_MGAL | Thermoelectric water demand | EnviroAtlas |  | MGD |
| 28 | EnviroAtlasWater | Total water demand | Synthesis |  | MGD |
| 29 | EnviroAtlasWaterL | Water demand levels | Synthesis | 0 to 6 in decades from <10 to >1,000,000 people served with per capital consumption of 1,200 MGD |  |
| 30 | EnviroAtlasTotProtFrac | Total fraction of land protected | Synthesis | Total % of land cover protected by IUCN and US government |  |
| 31 | EnviroAtlastOutdoors | Outdoor activities demand | Synthesis | Total days in year for big game hunting, bird hunting, migratory bird watching and fishing | Days/yr |
| 32 | EnviroAtlasNativeVulnIndexAquatic | Aquatic species vulnerability index | EnviroAtlas |  |  |
| 33 | EnviroAtlasESI | Ecosystem vulnerability index | Synthesis | See Section 2.2 of paper |  |
| 34 | EnviroAtlasESIL | Ecosystem vulnerability levels | Synthesis | 0 to 4 for no ESI, 25th, 50th, 75th and 100th quantile levels |  |
| 35 | EnviroAtlasWastewaterMGD | Wastewater discharge | EnviroAtlas |  | MGD |
| 36 | EnviroAtlasPermitsLbPerYr | Permitted pollution load | EnviroAtlas |  | lb/yr |
| 37 | EnviroAtlasAg\_Tile\_SSF | Tile agricultural subsurface runoff | EnviroAtlas |  | mm |
| 38 | EnviroAtlasAg\_NonTile\_SSF | Non-tile agricultural subsurface runoff | EnviroAtlas |  | mm |
| 39 | EnviroAtlasAg\_Runoff | Agricultural surface runoff | EnviroAtlas |  | mm |
| 40 | EnviroAtlasAgRunoffMM | Total agricultural runoff | Synthesis | Sum of rows 37, 38 and 39 | mm |
| 41 | EnviroAtlasArea | Total water surface area | Synthesis | Sum of areal watersurface and area of floodplains designated as streams | km2 |
| 42 | EnviroAtlasPIL | Pollution index | Synthesis | Levels 0 to 1, but see Section 2.2 of paper |  |
| 43 | EnviroAtlasimp | Impairment status | Synthesis | 0 or 1 depending on whether watershed has any assessments reported in ATTAINS |  |
| 44 | finalAll\_maxTravelTime | Maximum shortest travel time | Malarial Atlas Project | See Section 2.1 of paper | minutes |
| 45 | finalAll\_cloudCover | Mean cloudy days per year | EarthEnv | See Section 2.1 of paper | days per year |
| 46 | finalAll\_access | Access levels | Synthesis | Ignore this attribute but see Table 2 in paper |  |
| 47 | finalAll\_cloud | Cloud levels | Synthesis | Ignore this attribute but see Table 2 in paper |  |
| 48 | finalAll\_rsPotAggrAConsC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 49 | finalAll\_ rsPotAggrANormC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 50 | finalAll\_ rsPotAggrAAggrC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 51 | finalAll\_ rsPotNormAConsC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 52 | finalAll\_ rsPotNormANormC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 53 | finalAll\_ rsPotNormAAggrC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 54 | finalAll\_ rsPotConsAConsC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 55 | finalAll\_ rsPotConsANormC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 56 | finalAll\_ rsPotConsAConsC | Remote sensing potential for accessibility and acquisition cost-payoff levels | Synthesis | Aggr – optimistic in Table 2  Norm – Normal in Table 2  Cons – Conservative in Table 2 |  |
| 57 | finalAll\_popPot | Intersection of potential > 4 and PopL >3 | Synthesis | For normal cost-payoff scenario |  |
| 58 | finalAll\_watPot | Intersection of potential > 4 and WaterL >3 | Synthesis | For normal cost-payoff scenario |  |
| 59 | finalAll\_esiPot | Intersection of potential > 4 and ESIL >1 | Synthesis | For normal cost-payoff scenario |  |
| 60 | finalAll\_pollPot | Intersection of potential > 4 and PIL >1 | Synthesis | For normal cost-payoff scenario |  |
| 61 | finalAll\_accessPot | Intersection of potential > 4 and access >2 | Synthesis | For normal cost-payoff scenario |  |
| 62 | finalAll\_coveragePot | Intersection of potential > 4 and imp=0 | Synthesis | For normal cost-payoff scenario |  |
| 63 | finalAll\_allPot | Intersection of potential > 4 and all layer conditions | Synthesis | For normal cost-payoff scenario |  |