



GIS Resources for Environmental Groups





What is GIS and what do we use it for?

Geographic Information System

Computer based system for capturing, storing, analyzing, and displaying data related to geographic locations, allowing users to visualize and understand geographic patterns and relationships

- Planning - transportation, development, environmental
- Statistics – epidemiology, population density, business analytics
- Emergency response and disaster management
- Collecting data in the field – environmental, utilities
- Providing information and entertainment – virtual tours, service locators



What is GIS and what do we use it for?

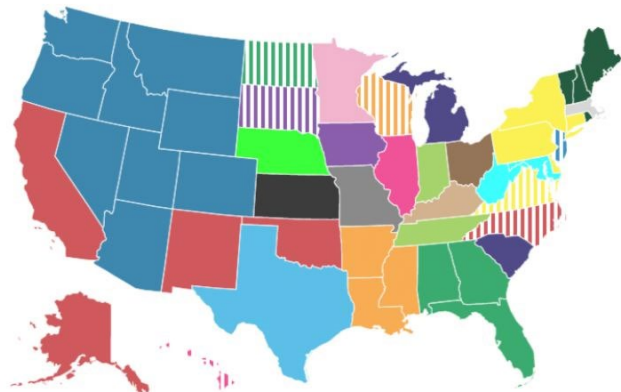




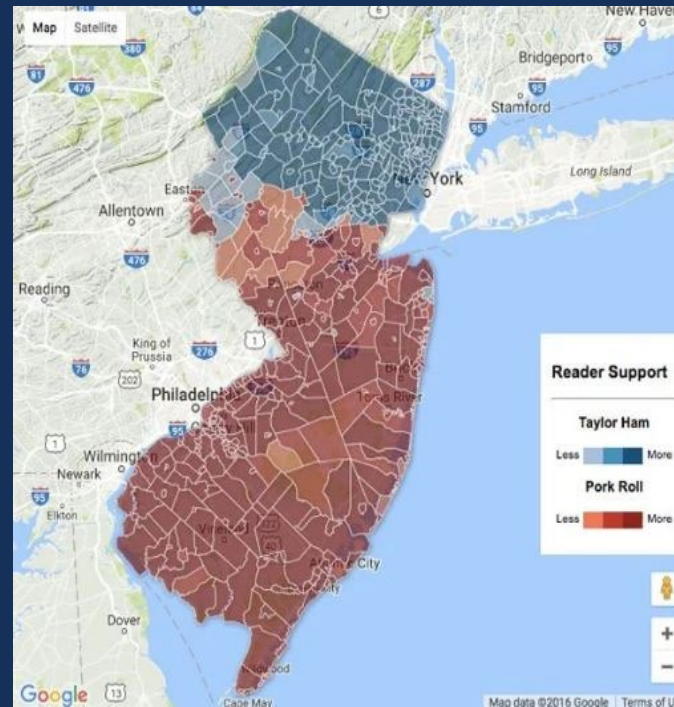
What is GIS and what do we use it for?

EVERY STATE'S LEAST FAVORITE STATE

(ACCORDING TO @MATTSURELEE'S INSTAGRAM FOLLOWERS)



- | | | | |
|---------------------|----------------|-------------------|---|
| Hates Texas | Hates Michigan | Hates Nebraska | Hates N. Dakota |
| Hates New Jersey | Hates Ohio | Hates Iowa | Hates W. Virginia |
| Hates California | Hates Oklahoma | Hates Missouri | Hates Illinois |
| Hates Florida | Hates Indiana | Hates Kansas | Hates Virginia |
| Hates Alabama | Hates Kentucky | Hates Tennessee | Doesn't Hate Anyone Apparently (I didn't get any answers) |
| Hates Massachusetts | Hates New York | Hates S. Carolina | Hates S. Dakota |
| Hates Wisconsin | | Hates Everyone | |



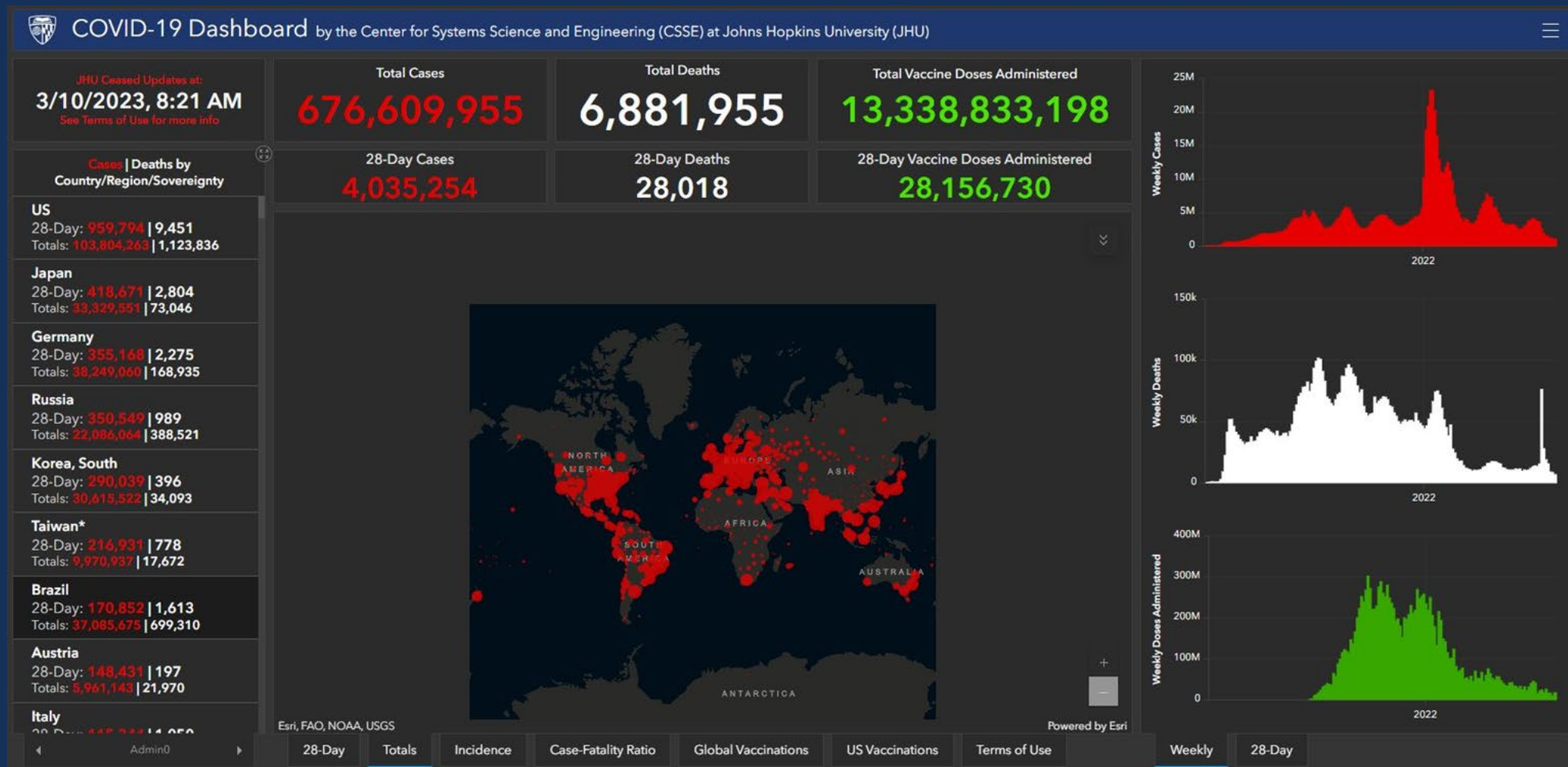
Source: [WolfsToothDogFood](#) on reddit



Source: [NeilParkinsonMakes](#) on reddit



What is GIS and what do we use it for?





Monmouth County GeoHub

Available to the public to explore the county's GIS data. Some services include:

- Property Viewer
- Self-Service Mapping Applications
- StoryMaps
- Open Data (GIS layers for download)
- Other Resources

Website:

<https://data-monmouthnj.hub.arcgis.com/>



NJ GeoWeb and NJGIN

Available to the public to explore the state's GIS data

NJDEP viewer website:

<https://dep.nj.gov/gis/nj-geoweb/>

NJDEP open data download website:

<https://gisdata-njdep.opendata.arcgis.com/>

NJ Geographic Information Network:

<https://www.nj.gov/njgin/>



Other Self-Service Web Applications Helpful for Environmental Work

- NJ MAP <https://earth.rowan.edu/departments/geography/gis/geolab/njmap1.html>
- FEMA National Flood Hazard Layer <https://www.fema.gov/flood-maps/national-flood-hazard-layer>
- NJ Flood Mapper <https://www.njfloodmapper.org/>
- Climate Central <https://sealevel.climatecentral.org/maps/>
- EPA NEPAAssist <https://nepassisttool.epa.gov/nepassist/nepamap.aspx>
- USGS <https://www.usgs.gov/programs/national-geospatial-program/topographic-maps>
- USFWS <https://ipac.ecosphere.fws.gov/>



Monmouth County Tool for Environmental Groups- Environmental Planning Features Map

Some layers include:

- MOD-IV classifications (NJ Property Tax System) adjacent to streams and waterbodies
- Preserved open space
- Watersheds
- 2-foot contours
- Trails
- Wetlands

Website:

<https://experience.arcgis.com/experience/3e45aed47ca14169a011ea5dfe6d9b26>

Property Class Field (11) - three alpha-numeric characters: The class should be entered exactly as it is listed below. If it is less than three characters, leading zeros should not be used.

Each line item must carry one of the property class codes listed below.

For the classification of taxable real property, the following codes are applicable:

- 1 Vacant Land
- 2 Residential (four families or less)
- 3A Farm (Regular)
- 3B Farm (Qualified)
- 4A Commercial
- 4B Industrial
- 4C Apartment

For the classification of railroad property, the following codes are applicable:

- 5A Class I Railroad Property
- 5B Class II Railroad Property

For the classification of tangible personal property of public utilities and oil refineries, the following codes are applicable:

- 6A Personal Property Telephone
- 6B Machinery, Apparatus or Equipment of Petroleum Refineries

For all Class 1 (Vacant Land) properties and Class 3B (Farmland-Qualified) properties, *land only is assessed*. Any farm buildings, such as silos, barns or other accessory farm buildings are assessed within the 3A classification in the improvement column.

For the classification of exempt property line items, the following codes are applicable:

- 15A Public School Property
- 15B Other School Property
- 15C Public Property
- 15D Church and Charitable Property
- 15E Cemeteries and Graveyards
- 15F Other Exempt properties not included in the above classifications

Class 15 properties will appear twice; once in the ratable section of the Tax List in block and lot order with the word "Exempt" in the net taxable value, and again in the exempt section of the Tax List.



ESRI GIS Products and Other GIS Tools

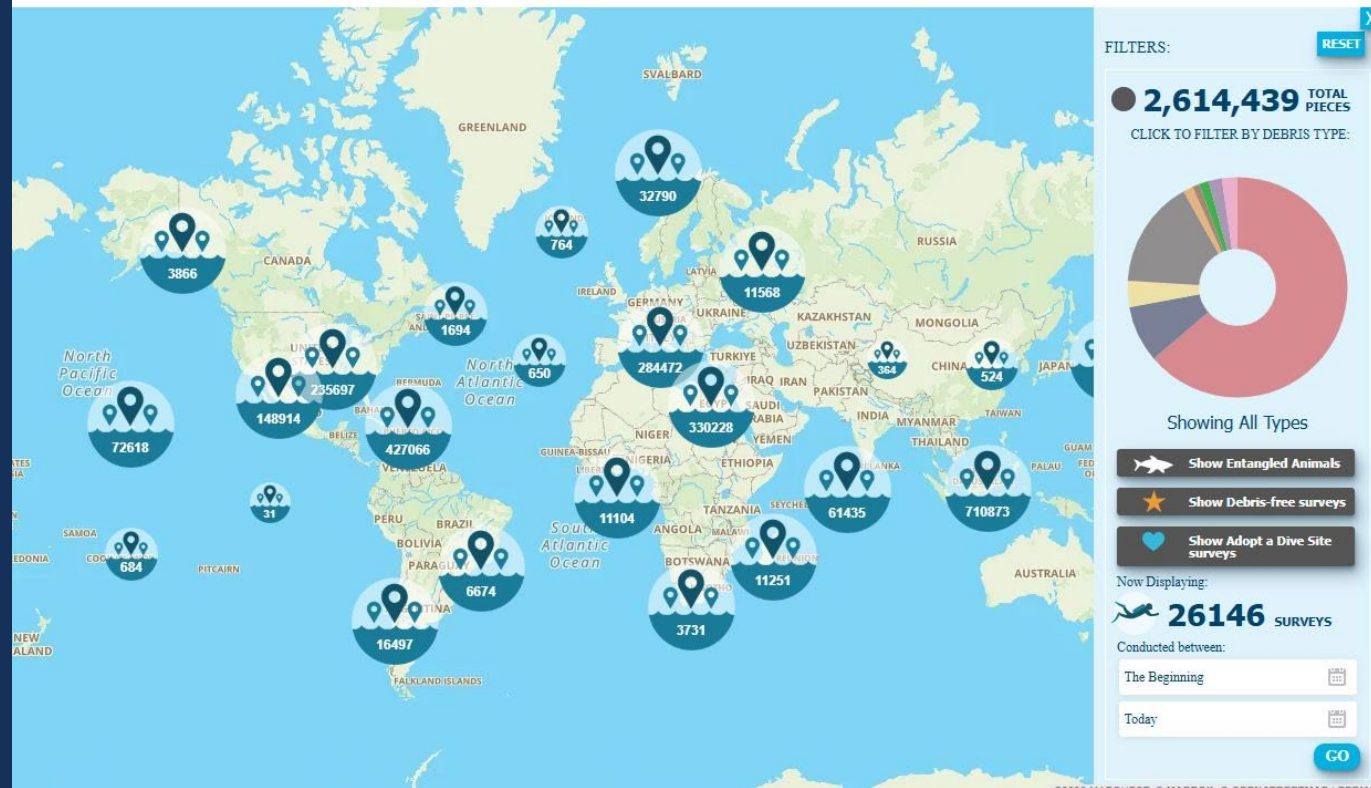
- ESRI ArcGIS Online and ArcPro (desktop) <https://www.esri.com/en-us/home>
 - Free/"pay as you go" public accounts (more limited functions)
 - Low-cost accounts for personal and 501C3 use (\$100)
 - Enterprise accounts (government or private for-profit organization)
 - StoryMaps, FieldMaps, Web Map and App builders, etc
- Google Maps
 - Accessible for everyone
- QGIS <https://qgis.org/project/overview/>
 - Crowd-sourced platform...free but there is a learning curve



Dive Against Debris Example



Dive Against Debris® Map



<https://www.diveagainstdebris.org/>



Dive Against Debris Example

Dive Against Debris® Data Card

Dive Against Debris® is a survey of underwater marine debris. Only report debris you find underwater while on SCUBA through Dive Against Debris®. Survey leaders should record all diver findings for the same individual survey dive, onto one Data Card. Then, for all English data submissions report your data via the Dive Against Debris® app or online at www.projectaware.org/DiveAgainstDebrisData, for all other languages, please email your completed Data Card to diveagainstdebris@projectaware.org. See the Dive Against Debris® Survey Guide for instructions on using this form.

Survey Date (DD/MM/YYYY)		Survey Site Name		Organisation/Dive Centre	
Survey Site Location (nearest landmark to help verify location i.e. adjacent road name, nearest city/town, state/province, country)				Number of Participants	
Survey Site GPS Coordinates (Get your GPS Map Datum to WGS84)		Latitude (Take your readings in decimal degrees)		Longitude (Take your readings in decimal degrees)	
Survey Depth Range (circle one) max min		Area surveyed (circle one) m ² or ft ²		Total weight of all Debris Collected (circle one) kg or lb	
Survey Leader Name		Survey Leader Email		OR <input type="checkbox"/> Our Survey Site Was Free Of Debris Estimated: OR Measured:	
Dominant Substrate (circle one) <input type="radio"/> Sand <input type="radio"/> Coral <input type="radio"/> Seagrass <input type="radio"/> Other (please describe) <input type="radio"/> Gravel <input type="radio"/> Rock		Ecosystem (circle one) <input type="radio"/> Coral reef <input type="radio"/> Mangroves <input type="radio"/> Seagrass <input type="radio"/> Other (please describe) <input type="radio"/> Rocky reef <input type="radio"/> Kelp		Waves (circle one) <input type="radio"/> Calm (0-0.1 metres/0-4 inches high) <input type="radio"/> Smooth (0.1-0.5 metres/4-19 inches high) <input type="radio"/> Slight (0.5-1.25 metres/19 inches-4 feet high) <input type="radio"/> Moderate (greater than 1.25 metres/4 feet high)	
Weather Conditions from Previous Week		Did You Find Entangled Animals? Identify animal(s) found Identify debris item Record number of each Entangled Animal Was the animal: dead? <input type="checkbox"/> injured? <input type="checkbox"/> released unharmed? <input type="checkbox"/>			
Are you aware of an event that could have contributed to the debris you have documented? YES <input type="checkbox"/> NO <input type="checkbox"/> If so, describe and provide verification - link to the news, etc.					
Items of Local Concern List the top three debris items you consider a problem in your location and tell us why 1. 2. 3.					
What is the most unusual item found?		Photos <input type="checkbox"/> Entangled Animals, marine debris impacts, items you cannot identify, items you did not remove, etc. See the Survey Guide for more info.			

Count all debris items as one, regardless of size. See Too Small to Count in the Dive Against Debris® Survey Guide for counting large quantities of small pieces. Debris items are listed under the main material of construction. List items that do not fit into a category here:

Other Debris Items (Identify Material)	Tally (#1 = 5)



Material Category	Tally (#1 = 5)
Plastic Materials	
01. bags: grocery/retail (plastic)	
02. bags: trash (plastic)	
03. bait containers/packaging	
04. balloons	
05. balls	
06. baskets, crates	
07. beverage bottles: less than 2 litres (plastic)	
08. beverage bottles: 2 litres or more (plastic)	
09. bottles: bleach, cleaner	
10. bottles: oil/tube	
11. buckets, drums & jerry cans: 2 litres or more	
12. buoys & floats (plastic & foamed)	
13. caps & lids (plastic)	
14. carpet (synthetic)	
15. cigarette filters	
16. cigarette lighters	
17. cigar tips	
18. containers: fast food, lunch boxes & similar	
19. cotton bud sticks	
20. cups, plates, forks, knives, spoons (plastic)	
21. diapers/nappies	
22. fishing: line	
23. fishing: lures, rods/poles	
24. fishing: nets & pieces of nets	
25. fishing: traps & pots	
26. foam insulation & packaging	
27. food wrappers (plastic)	
28. furnishings (plastic)	
29. gloves (latex)	
30. light sticks/cyalumes	
31. mesh bags: fruit, vegetable, shellfish	
32. pipes (plastic/PVC)	
33. rope (plastic/nylon)	
34. scuba & snorkel gear, masks, snorkels, fins	
35. sheeting: tarpaulin, plastic sheets, pallet wrap	
36. six-pack rings, ring carriers	
37. strapping bands (plastic)	
38. straws, stirrers	
39. syringes (plastic)	
40. tampon applicators	
41. tobacco packaging & wrappers	
42. toothbrushes	
43. plastic fragments	
Glass & Ceramic Materials	
44. beverage bottles (glass)	
45. buoys (glass)	
46. cups, plates, tableware, dishes (glass & ceramic)	
47. fluorescent light tubes	
48. jars: food (glass)	
49. light globes: bulbs, etc	
50. syringes (glass)	
51. glass & ceramic fragments	
Metal Materials	
52. aerosol/spray cans	
53. appliances: household	
54. batteries: AA, AAA, C & D, 6V, 9V, etc	
55. batteries: car or boat	
56. beverage cans (aluminium)	
57. cans: food, juice, other (tin)	
58. caps & lids (metal)	
59. cars & car parts	
60. cups, plates, tableware, dishes (metal)	
61. drums: 55 gallon	
62. fishing: sinkers, lures, hooks	
63. fishing: traps & pots	
64. forks, knives, spoons (cutlery)	
65. gas bottles/cylinder, drums: more than 4 litres	
66. pipes & rebar	
67. pull tabs: beverages	
68. scuba weights	
69. strapping bands (metal)	
70. wire, wire mesh, barbed wire	
71. wrappers (foil/metal)	
72. metal fragments	
Rubber Materials	
73. condoms	
74. gloves (rubber)	
75. inner-tubes & rubber sheets	
76. rubber bands	
77. tires/tyres	
78. rubber fragments	
Wood Materials	
79. fishing: traps & pots	
80. furnishings (wood)	
81. lumber (processed or out/milled wood)	
82. pallets	
83. wood fragments	
Cloth Materials	
84. bags (burlap/hessian)	
85. bags (cloth)	
86. gloves (cloth)	
87. rope & string (cloth)	
88. towels, rags	
89. cloth fragments	
Paper/Cardboard Materials	
90. bags (paper)	
91. cardboard: packaging & cartons	
92. paper: books, newspapers, magazines, etc	
93. paper/cardboard fragments	
Mixed Materials	
94. bricks, cinderblocks, chunks of cement	
95. clothing	
96. computer equipment & other electronic devices	
97. fireworks	
98. shoes, flip flops, sandals, tennis, etc	
99. tampons	
100. toys	

Having trouble identifying a debris item?
Refer to the Dive Against Debris® Marine Debris Identification Guide
for images of all debris items.



Watershed StoryMap Example

 MonmouthNJGIS

 Bridget

Watershed and Water Pollution Awareness

✓ Authoritative

 **Monmouth County GIS Division**
Monmouth County NJ GIS

Summary

Good habits for healthy waterways

[View Full Details](#)

Details

 **StoryMap**
StoryMap

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<https://arcg.is/mKruq0>

Questions?



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