Quick Start Guide to the 2011 National Air Toxics Assessment (NATA) App
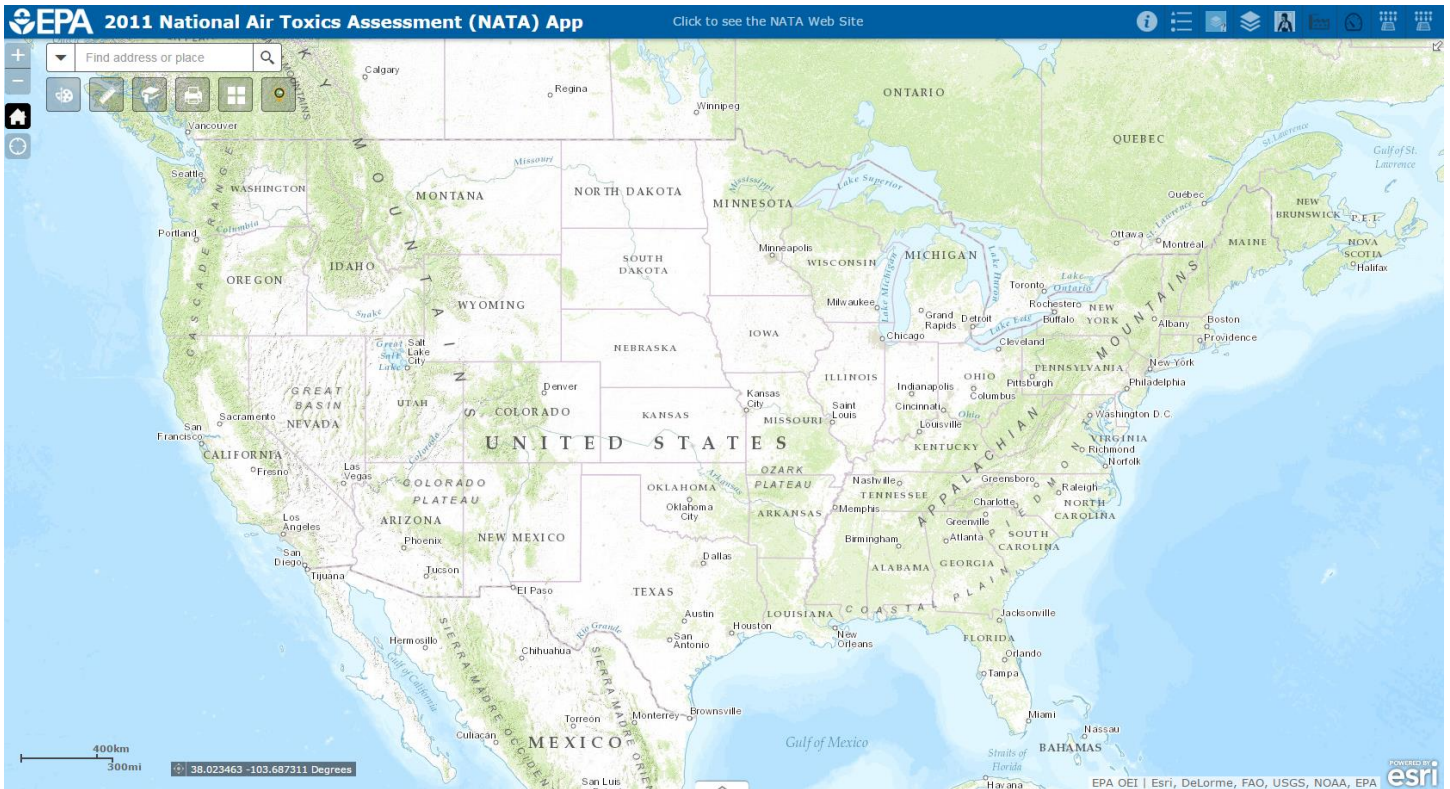
The 2011 National Air Toxics Assessment (NATA) App is a tool to aid NATA users in visualizing the emissions data and the modeling results, including risk and ambient concentration estimates, of the 2011 NATA. The app is browser based, so there are no special software requirements. The NATA App is accessible on the web and on mobile devices.

When the app is first opened, you see a blank topographic map of the continental US. No map layers are displayed at this scale because the data in most of the layers is not meaningful at this resolution.

Navigating

You can navigate the map in several ways. You can use the zoom in/zoom out at the top left in the app. If you zoom in far enough, layers will start to appear. To see which layers are on at any given scale, click on the Legend widget, which is one of the header widgets in the top right of the app.


There are four main layers of data in the app:

1) **Tribal Boundaries** - EPA Office of Environmental Information dataset based on US Census Bureau 2010 tribal boundary layer data for the lower 48 United States and Bureau of Land Management Alaska State Office data for tribes in Alaska.

2) **Emissions Sources** - Emissions data (in tons per year) for all sources modeled for NATA. All sources were modeled in **CMAQ**, and all sources except fires and biogenics were modeled in **AERMOD**.

3) **Monitoring Data** - Annual (2005 - 2013) statistics of measured ambient air toxics concentrations (in micrograms per cubic meter (μg/m3)) and associated risk estimates for individual monitoring sites based on the data from the **Air Monitoring Archive (AMA), Phase IX**.

4) **Risks and Annual Ambient Concentrations** - Modeled annual ambient concentrations and risks at the census tract level. All concentrations have units of μg/m^3, and all cancer risk estimates are on a per million basis. For example, a cancer risk of 10 means the estimated lifetime risk of cancer is 10 in a million (that is, the estimated probability of getting cancer is 0.00001).

To change which layers are displayed, click on the Layer List widget, which is also in the header at the top right of the app.
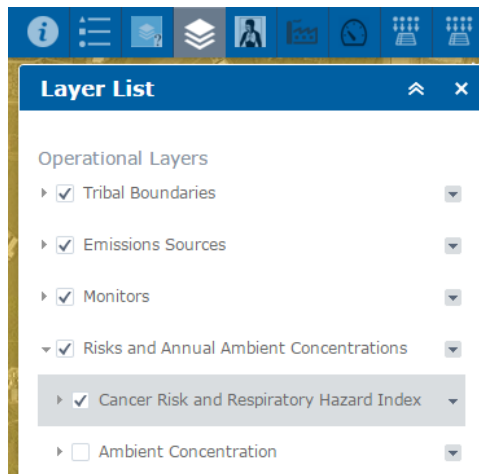
You can check the boxes for the layers you want on, and uncheck those you don't want displayed. To expand the main layers, click on the layer name.

There are ways to navigate other than zooming. To go to the area you are currently in, click on the My Location widget (highlighted in yellow below). This feature is especially useful when using the app on a mobile device.
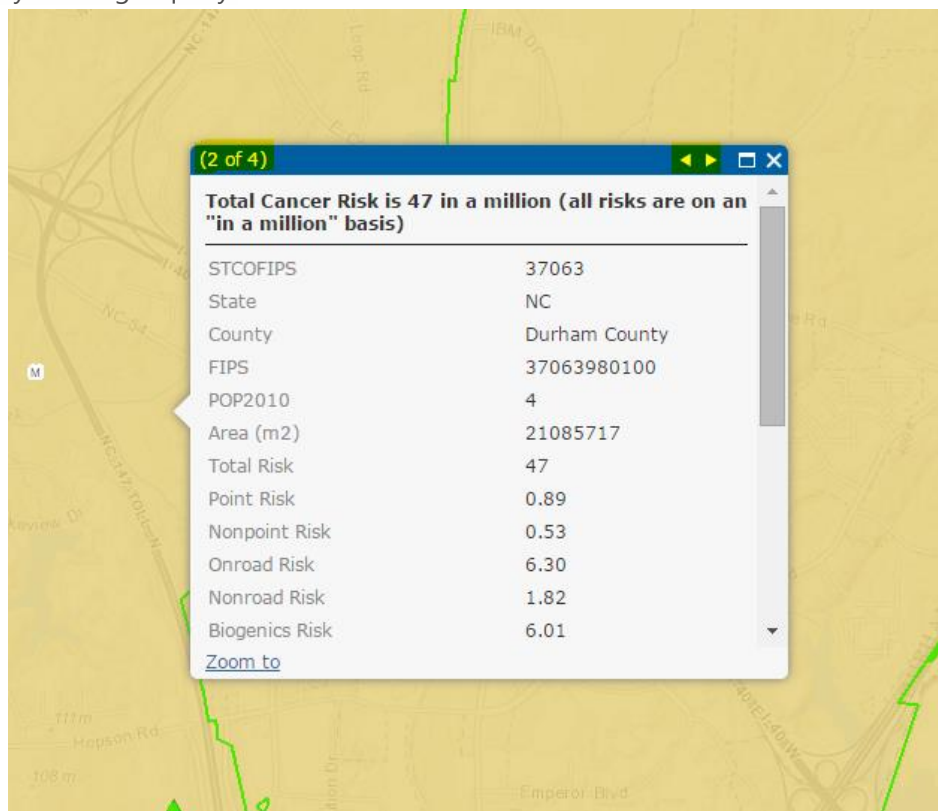
You can use the search window to search for a location by State, county, city, zipcode, or longitude and latitude coordinates (longitude first, and negative for the western hemisphere). You can also search using the layers in the map by clicking the dropdown for the search window and selecting which dataset you want to search.

The Cancer Risk and Respiratory Hazard Index (HI) layers can be searched by 11-digit census tract number, and the Facility Level layer of stationary sources can be searched by all or part of a facility name, or by a facility's EPA Emission Inventory System (EIS) facility ID. Note that the facility search returns only 20 results, so if you search the name of a chain of gas stations, for example, you likely will not get all of them. The default is to search all the layers in the dropdown, which will take longer than if you specify which layer you want to search. For example, if you want to search by city name, choose the ESRI World Geocoder.

Popups

For each layer that is displayed (at the current map scale), a popup window will appear when a point in the map is clicked. A single popup window will appear, with arrows in the popup header that can be clicked to look through the popups for all layers that have features at the clicked point. The popups for the emissions layers contain tabular data about the sources clicked. The popups for the risk layers include tabular data and pie charts that show the contributions to total risk by source group and pollutant. There are no popups for monitors; those data can be accessed by running a query.

Queries

There are three main query options: risk, emissions, and monitors.

To run a query, select one of the query options, and choose the criteria by which you want to query the data. For example, below is a "By State/County and Risk" query of census tracts with total cancer risk of at least 50 in a million in Wake County, NC. A spatial filter has been used to limit the area over which the query will apply. The spatial filter can be a rectangular area as shown below or other shapes. The spatial filter can also be the current map extent (the first option under spatial filter). Finally, the box has been checked to add the query results as an operational layer in the map. This should always be checked so the results will be added to the layer list and the attribute table of the results can be viewed.

Although there are not specific queries for all layers in the app, these layers can still be queried by opening the attribute table of the layer, and filtering the data using criteria similar to those included in the specific queries in the app. For example, this is how to open the attribute table for the Gas Stations emissions layer:

While in the attribute table, click on the "Options" dropdown and select "Filter." This is an example of a query of the Gas Stations data for census tracts with at least five people in them and with benzene emissions of at least 0.5 tons per year:

The results of the filter are not added as an operational layer as they are with the query widgets in the app, but the data can be viewed, sorted (by clicking on the field names), and downloaded (by selecting "Export All to CSV", under "Options"). Note that the maximum number of records that can be exported is 1000.

There is the option in the NATA App to input a user-supplied file of point locations and display those locations on the map. The coordinate field names that are recognized and can be plotted are lat, latitude, y, ycenter, and point_y (for latitude), and lon, long, longitude, x, xcenter, point_x (for longitude). There is also the ability to "enrich" the point locations with some of the data in the map, including risk and ambient concentration data. For example, if you wanted to plot the locations of schools and get the risk estimates for the census tracts that the schools are in, you would select your comma-separated value (CSV) file of school data by browsing for it or dragging and dropping on the widget window. The points would be plotted, and an operational layer of your results would be added to the layer list.

Other Widgets

Below is a description of other basic widgets that are available in the app.

Draw Widget

The Draw widget enables users to draw basic graphics and text on the map. It provides basic sketching and redlining functionality for the web application. Note that when "Clear" is clicked, the widget removes all objects drawn and not just the most recently drawn.

Measurement Widget

The Measurement widget allows the user to measure the area of a polygon, length of a line, or find the coordinates of a point.


Bookmark Widget

The Bookmark widget enables users to save the map view extents of frequently viewed areas so as to easily go to those areas in the future. This could be useful for printing maps with consistent extents every time.

Print Widget

The Print widget enables users to print basic maps, which include a legend and scale bar. It is possible to create more detailed maps (e.g., including popup data and other information) by using readily available tools such as the Windows Snipping Tool.
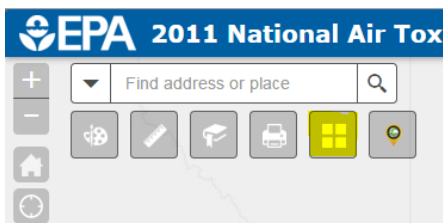
Basemap Widget

The Basemap widget allows to select which basemap will be displayed. Options include aerial imagery, street maps, and terrain maps.

Street View Imagery Widget

The Street View Imagery widget provides users with several options for viewing street-level and birds-eye imagery. Simply check the boxes for the imagery type, and click on a location in the map to see the imagery at that point.