DPI Viewer Tool

June, 2019

Application Overview

DPI Viewer Tool is a web-based mapping application (http://s3.amazonaws.com/DevByDesign-Web/Maps/DPI_viewer/index.html) which gives users the ability to display and access all development potential indices (DPIs) created by TNC.

Application Layout

DPI Viewer Tool is comprised of two main components; the map resources panel (left section) and the map display (right section). The map resources panel gives users the ability to modify the displayed map and view information with regards to the maps available. The map canvas displays the spatial data associated with the application. A set of map tools (described in more detail under the Map Tools section) provides the users with a number of tools to aid in setting the view extent of the displayed map, provides feature level information, allows for users to add their own data, and provides map output capabilities.

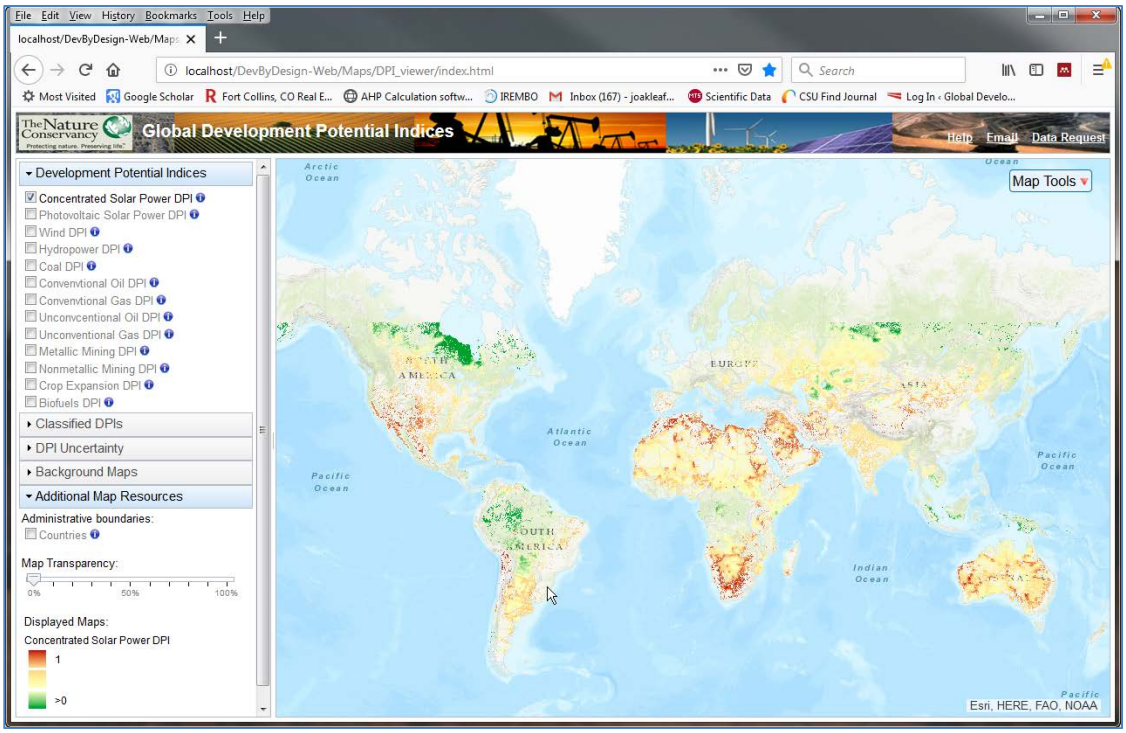

Figure 1. Opening page of DPI Viewer

Map Tools

The map tools can be displayed or hidden by clicking on the red arrow to the right of the *Map Tools* text. To select a tool the user clicks on that tool image. Some of the tools will automatically change the display when the tool is clicked while others require the user to interact with the map display. Full Extent sets the map to display back to the map extent shown when the viewer was opened. Zoom In allows the user to zoom the map display into a specific area by clicking on the tool and then maneuvering the mouse pointer to the area they would like to zoom into. This is accomplished by holding the left mouse button down and dragging the mouse across the map until they have drawn a rectangle encompassing their area of interest and then releasing the button. Zoom Out interacts similarly but zooms the map display out based on the ratio of the box to the current display so the smaller the box the greater factor the map will be zoomed out. Pan allows the user to move the display of the map without changing the scale of the map. The user must hold down the left mouse button and drag the pointer to move the map and release the button to end the panning. Next and Previous tools allow the user to scroll back and forth thru all the displays viewed in a web session.

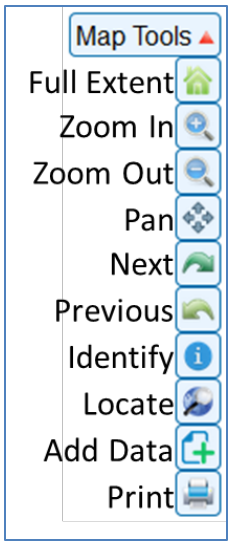

Figure 2. Map tools

The Identify tool allows the user to display information associated with a map which is visible (i.e. checked within the Map Resources panel, see Map Resources section of this document) on the map. In order to use the tool it must first be selected and then the user needs to click on a feature displayed by in the map. A window will be displayed listing all the information found for that location associated with any of the visible features (Figure 3). If multiple layers are visible and the user clicks on a location with features from these layers, the window will display an arrow with the layer name. The user can click on the arrow to see all attribute information for the feature clicked on. To close the window, click the X upper right-hand corner of the box.

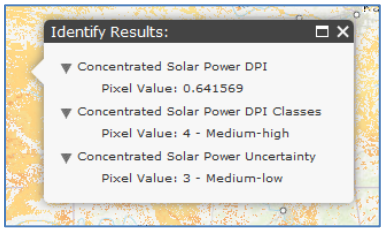

Figure 3. Identify Window

The Locate tool gives user the ability to zoom to a location using geographic coordinates (i.e. Latitude and Longitude). The user must input either of these coordinate pairs into the Locate dialog (Figure 4) and click on the Zoom To button. A red "**X**" will indicate the location with the map display zooming in and centering on this position. F To clear the last located position, the user can click on the Clear button which will remove the red "X" and clear the location input boxes.

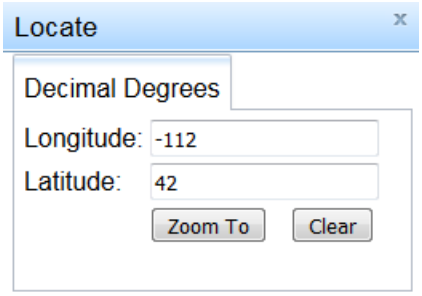

Figure 4. Locate Dialog

The Add Data tool gives users the ability to display their own information within the map display. The user must first click on the Browse… button in the Add Zipped Shapefile dialog (Figure 5) and then select a local zipped file containing an ESRI shapefile. At minimum, this zip file must contain the following files: .shp, .shx, .dbf and .prj). One the user selects the zip file the application will extract the spatial data from the zip file and display it on the map. Additionally the map display will zoom to the extent of these data. Uploaded data is not saved anywhere and is only displayed during the user web session. All features within the shapefile are displayed as a graphic and will have associated attributes of the shapefile available when clicking on the feature. The user can clear the most recently added dataset by hitting the Clear Shapefile button.

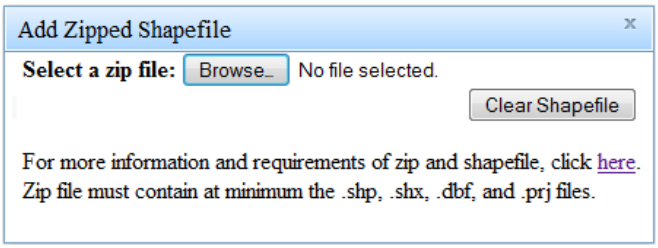

Figure 5. Add Data Dialog

The Print tool provides users with the ability to create a map which can be saved or printed by the user. By clicking on this tool, the Map Properties dialog (Figure 6) is displayed. Through this dialog, the user can set both the title and author of the map by inputting the appropriate text. A legend for the map will automatically be created if the box is checked. The user can select a variety of page sizes (i.e. letter, tabloid, A3, A4) and orientation (i.e. portrait or landscape). Finally the map produced can be created in a PDF, PNG, or JPG file format. Once the user has set all the parameters, they can click on the Create Map button which will start the process of creating the defined map. Once the process has been completed a hyperlink displaying Click Here for Map will be produced which allows for the user to access the map. The user must close the dialog by clicking on the X in the upper right portion of the dialog to return to the interactive mapping application.

Note: Due to limits with regards to map spacing, layers with long legends or lengthy item descriptions may not be produced even when legend property is checked.

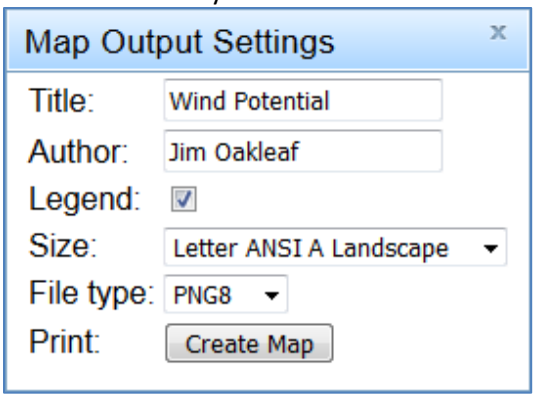

Figure 6. Map Properties Dialog

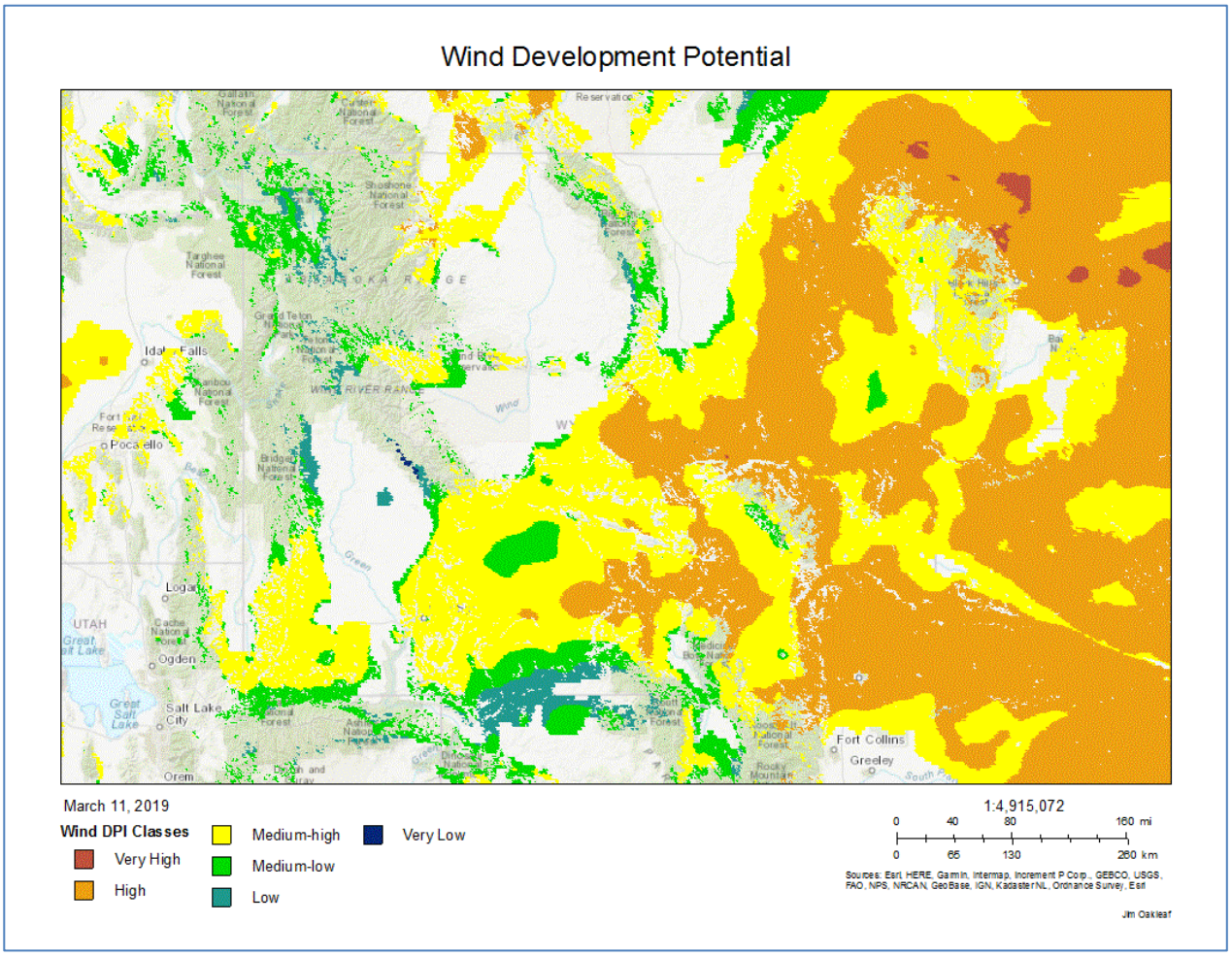

Figure 7. Map output example

Map Resources Panel

The Map Resources Panel (Figure 8) gives users the ability to modify and display maps within the viewer. There are four major grouping of maps; *Development Potential Indices, Classified DPIs, DPI Uncertainty,* and *Background Maps*. Additionally, there is an *Additional Map Resources* group allowing the user to display reference data (i.e. country borders), change the transparency of the displayed maps, and view the legend of the currently displayed maps. All groupings can be expanded or contracted by clicking on the heading name. To turn on a map within any group (except *Background Maps)*, the user clicks the check box in front of the layer name. To change the background map, the user clicks on one of the thumbnail images listed under this heading. To obtain more information on any of the maps, the user can click on the ⓘ icon to the right of the map name. This will open a dialog containing information on how the map was created.

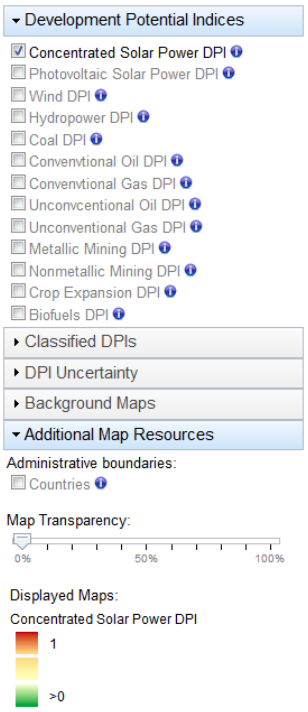

Figure 8. Map resource panel

Technical Description of Application

The *DPI Viewer Tool* web map was developed using HTML, CSS and JavaScript with mapping functionality built using the ArcGIS API for JavaScript. Maps being displayed and all analysis routines are built using ESRI ArcGIS Server technology. This application has been developed and tested for use in the most recent versions of Firefox and Internet Explorer. It has also been tested successfully to run in Google Chrome and should run in other compatible Internet browsers.