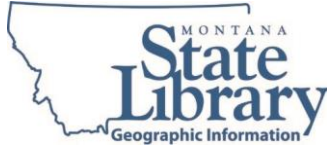


Montana Digital Atlas



Objective: Demonstrate tools and data layers found within the Digital Atlas

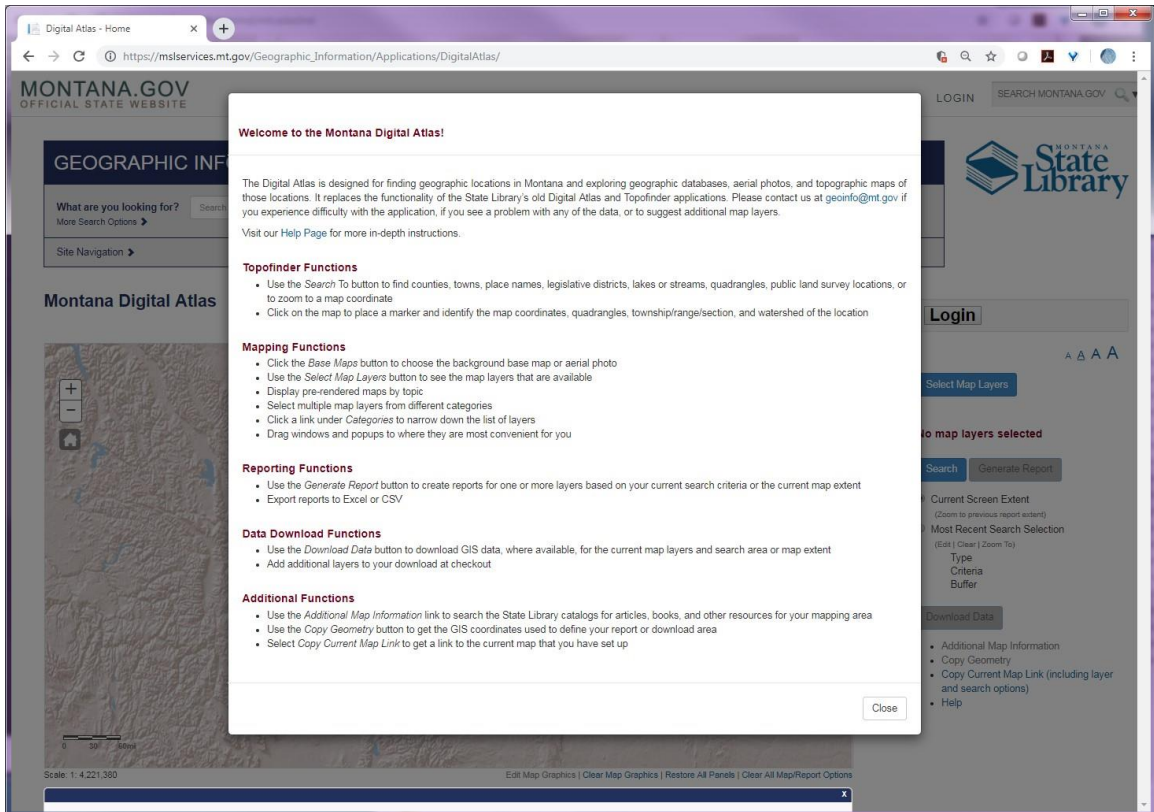
Step 1: Navigate to the Digital Atlas

<http://msl.mt.gov/GIS/Atlas>

Or, from the MSL home page <http://msl.mt.gov>

1. Left Click on Geographic Information (under Research Resources)
2. Left Click on Digital Atlas (under Featured Applications)

Montana Digital Atlas



Welcome Screen

When you first open the Digital Atlas application there will be a Welcome Screen that opens describing the various tools available and a link to additional Help.

Montana Digital Atlas Help

1. Click on the Help Page link – This will open another web page window.
2. Go back to the Montana Digital Atlas page and Close the Welcome Screen by left-clicking on the “Close” button at the bottom right of the Welcome Screen.

Montana Digital Atlas

The screenshot shows the Montana Digital Atlas web application. At the top, the browser address bar displays the URL https://mslservices.mt.gov/Geographic_Information/Applications/DigitalAtlas/. The page header includes the **MONTANA.GOV** logo and navigation links for **SERVICES**, **AGENCIES**, and **LOGIN**. A search bar is located in the top right corner.

The main content area is titled **Montana Digital Atlas** and features a large topographic map of Montana. Above the map are buttons for **Print**, **Base Maps**, and **View Legend**. The map includes a scale bar (0 to 60 miles) and a scale of 1:4,221,380. Below the map, there are links for **Edit Map Graphics**, **Clear Map Graphics**, **Restore All Panels**, and **Clear All Map/Report Options**.

On the right side of the interface, there is a **Login** button, font size controls (A A A), and a **Select Map Layers** button. Below these, a message states **No map layers selected**. There are **Search** and **Generate Report** buttons. The **Generate Report** section includes radio button options for **Current Screen Extent** (with a sub-option to zoom to previous report extent) and **Most Recent Search Selection** (with sub-options for Edit, Clear, and Zoom To). Under the second option, there are checkboxes for **Type**, **Criteria**, and **Buffer**. A **Download Data** button is also present, followed by a list of actions: **Additional Map Information**, **Copy Geometry**, **Copy Current Map Link** (including layer and search options), **Welcome Screen**, and **Help**.

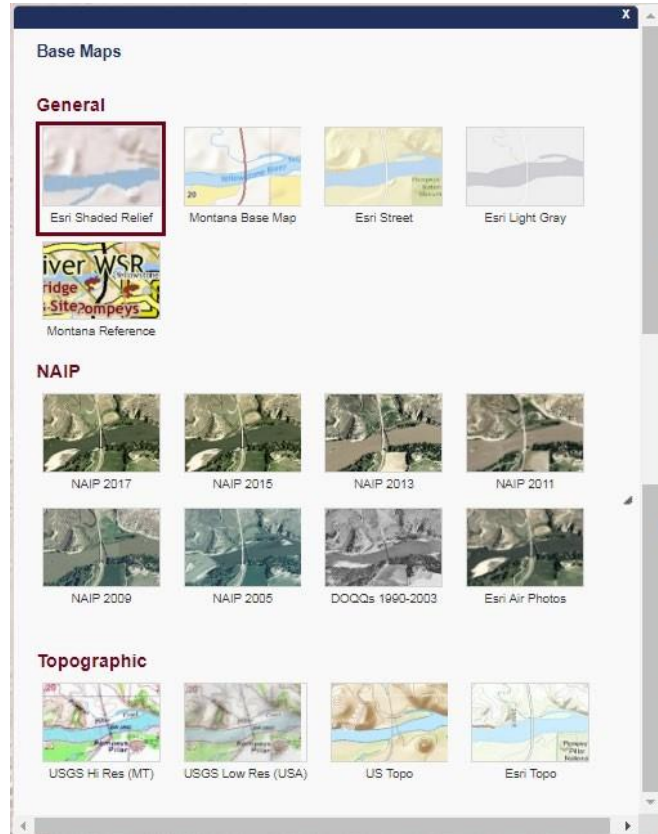
At the bottom of the page, a **Report** window is open, showing **Report Options** (Export All to Excel | Print All | Clear Report Results | Expand All Panels | Close All Panels) and a dropdown menu currently set to **Summary**.

Montana Digital Atlas

Base Maps

The map opens with the Esri Shaded Relief as the default Base Map.

1. Click on **Base Maps** button (above the map) to open the Base Maps window with other options.
2. Select a new Base Map then close the window (click the “x”).



Map Layers

Click on the **Select Map Layers** button to open a new window with the list of available map layers to add to your map. Scroll through the list of layers or select a category to navigate through the list.

Note: Some layers have a minimum scale listed. These layers will not draw on the map until you zoom in below this scale.

1. Select the Administrative Boundaries, the Schools groups, and Named Lakes and then close the window.

The Nine layers have now been added to the map. On the right panel you can see the list of layers and have the option to remove each layer individually or view the metadata for the layer.

You can also view additional information about these datasets by clicking on the “Additional Map Information” link.

2. Click on the **Additional Map Information** link and review the information in the new window that opens. Close the window (click on the “x”).




Montana Digital Atlas

Navigating the Map

- Zooming—Plus and minus map buttons (top-left)
- Zoom to area—Shift + drag mouse
- Zoom in—Double click location (To improve performance in Internet Explorer, adjust your mouse double-click settings)
- Zoom in and re-center—Shift + double click location (To improve performance in Internet Explorer, adjust your mouse double-click settings)
- Re-center—Shift + click location
- Pan—Use keyboard arrow keys or drag mouse (Mouse must be over map for keyboard navigation to work)
- Zoom out—Shift + Ctrl + drag mouse

1. Zoom to an area by holding down the shift key and then drag the mouse within the map to draw a square.

2. Click the  button to go back to the default extent.

View Coordinates, Data Attributes, and additional info

1. Click on the map to define a location and place a mark on the map. A new tabbed window will open displaying coordinates, location identifiers, and data attributes for the approximate location in the window. If map layers are present, a tab will open for each map layer. If many tabs display, expand the window wider to see all tabs.

Note: Next to the Layer tab a number will appear that shows if a layer was selected. A (0) indicates that there is nothing in that dataset selected.

2. View the Location Tab. It provides various map coordinates, watershed names, USGS quad names, etc. for the location in the map that was clicked.

3. Click on the Schools Tab. It displays the Schools layer attributes. Close the window.

Note: Each feature in a layer's tab has a "Zoom To" link that will zoom the map to that feature and highlight it in green.

Montana Digital Atlas



Search

1. Click the  button.

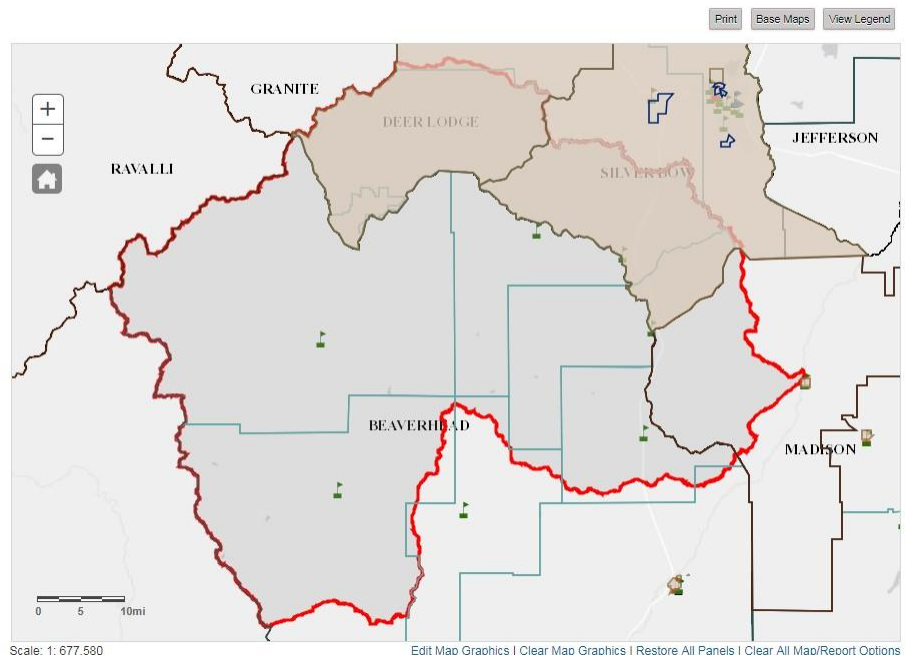
View the various search options listed including Township/Range/Section, Lakes and Streams, Coordinates, and Addresses.

2. Click on the Watershed – 4th Code option under Search Type in the list (left) and enter choose a Watershed from the dropdown list that displays. Optionally add a buffer.

3. Click the  button.

Once a search is executed, the map zooms to the location. Click "x" to dismiss the Search Window.

Montana Digital Atlas



Montana Digital Atlas

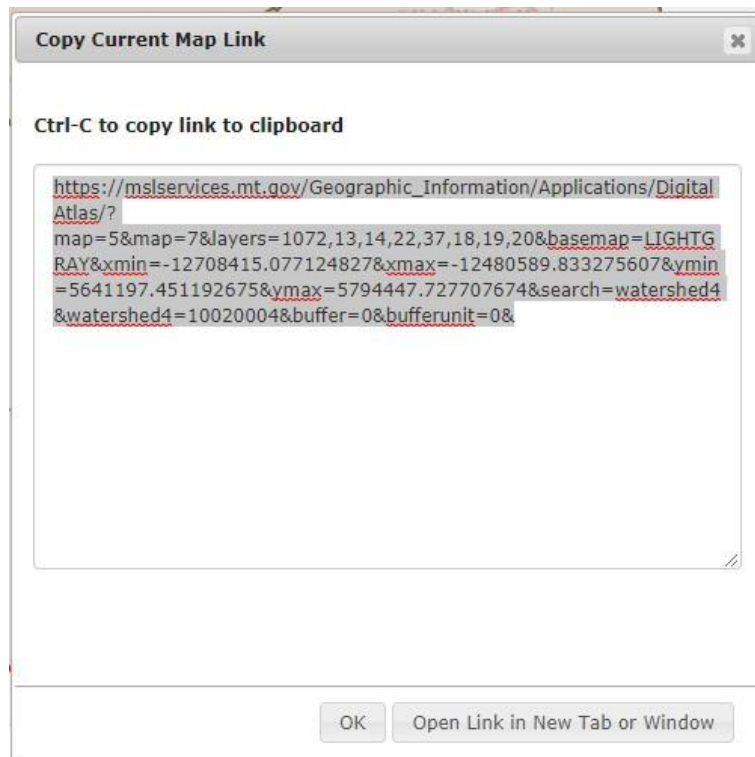
Note: When searching by Address, Lakes, Streams, Place Names, or USGS quad you may need to further specify your search by choosing from search results displayed below the Search button. Once a selection is made, the map zooms to the location.

When searching by User Drawn Polygon:

- Choose how you will draw the polygon area.
- Draw the polygon on the map to define your area of interest.
- *Optional:* Edit the polygon to refine its shape by clicking one of the Edit Map Graphics link located either below the map or in the User Drawn Polygon Panel.
- Begin drawing anew by clicking the Clear Map Graphics link below the map.
- Click outside the polygon to end editing and activate the drawn polygon.


Saving/Bookmarking a Map

1. Click the Copy Current Map Link to save your map configuration via a Digital Atlas URL.
2. Type Ctrl-C to copy the URL for saving or sharing with others.
3. Click the Open Link button to open the configured map in a new browser tab. Note: You can create a bookmark in your browser to quickly return to the map.



Montana Digital Atlas

Printing a Map

1. Click  button. The Print window displays.
2. Click Generate Printout (png) link.
3. When the map is ready, a Printout link will display. Then click the Printout link under Results to see the print preview. Print or save the map using browser functions (i.e. File menu or right click).

Generating Reports

1. Check that the radio button from Most Recent Search Selection is selected. This will only select the features that are within the Watershed Boundary you selected. Optionally, you can choose the Current Screen Extent, which will select all features within the map.

2. Click  button.

Note: The reports generate below the map for all layers present (visible or not visible at current map scale). You may see busy icons next to each layer while the reports are being created in one or more panels:

- Summary panel—presents customized summary statistics describing the water, land, or cultural features in the current map (visible or not) in an easy-to-interpret format.
- Individual layer panel(s)—displays the contents of the layer's attribute table. Note that wide attribute tables can be viewed entirely using the horizontal scroll bar under the table.

Note: If the report must access a thousand records or more, a pop-up warning displays for each layer's report requiring a user response for each warning (continue, cancel, etc.). If you choose to continue, report generation may take a long time and may cause the browser to lockup. Consider reducing the number of layers in the map or zooming in to a more local scale.

3. View the Report contents. The data layer tables may be sorted on any column.

Montana Digital Atlas

Report

Report Options: Export All to Excel | Print All | Clear Report Results | Expand All Panels | Close All Panels

▼ Summary

▶ Counties - Record Count: 6

Export Table to CSV Print Panel Results

	County Name	Square Miles (Clipped)	Square Miles (Total)	License Plate ID	FIPS Code
Zoom To	BEAVERHEAD	1,977.16	5,573	18	001
Zoom To	DEER LODGE	322.18	741	30	023
Zoom To	GRANITE	0.00	1,733	46	039
Zoom To	MADISON	205.31	3,603	25	057
Zoom To	RAVALLI	0.02	2,400	13	081
Zoom To	SILVER BOW	286.09	719	1	093

Generating Reports (continued)

Note the Report Options in the Report Window.

Report

Report Options: Export All to Excel | Print All | Clear Report Results | Expand All Panels | Close All Panels

- ▼ Summary
- ▼ Schools
- ▼ Elementary Districts
- ▼ Secondary Districts
- ▼ Unified (K-12) Districts
- ▼ Counties
- ▼ Incorporated Cities and Towns
- ▼ Indian Reservations
- ▼ Tax Increment Financing Districts

4. Select the Print All option. A new browser window will open listing each layer and it's attributes. You can choose to save this as a pdf or print it.

Montana Digital Atlas

Montana Digital Atlas
6/5/2018

Summary

Clip area: 1,786,146.51 acres

Counties

Record Count: 6

County Name	Square Miles (Clipped)	Square Miles (Total)	License Plate ID	FIPS Code
BEAVERHEAD	1,977.18	5,573.18		001
DEER LODGE	322.18	741.30		023
GRANITE	0.00	1,733.46		039
MADISON	205.31	3,603.25		057
RAVALLI	0.02	2,400.13		081
SILVER BOW	286.09	719.1		093

Incorporated Cities and Towns

Record Count: 3

Name	County	Type	Class	FIPS ID	Date Updated	Data Source
Butte-Silver Bow	Silver Bow	County/Consolidated	1st	3011397	8/24/2009	OTHER
Anaconda-Deer Lodge	Deer Lodge	County/Consolidated	1st	3001675	8/24/2009	OTHER
Twin Bridges	Madison	Town	TN	3075475	4/28/2017	OTHER

Indian Reservations

Record Count: 0

None

5. Select the Export All to Excel Option and save the file to your computer in the E: (thawed drive). Open the table in Excel. (Click yes to the warning). Explore the tabs.

Generating Reports (continued)

Now we'll look at how to calculate the acres of public land by ownership type.

6. First **Select Map Layers** then unselect all of the previously selected map layers (schools and administrative boundaries). Then select Public Lands from the Cadastral group, and close the window by clicking on the "x". Optionally you can click the

Administrative Boundaries

remove link next to the layer name. **Counties** (Remove | Metadata)

7. Click **Generate Report** button. Then in the Report Window click the Summary Tab to see the number of acres by each ownership


Montana Digital Atlas

Total

Export Table to CSV

	Record Count	Acres (Clipped)	Acres (Total)
County Government	6	10.4000	10.40
Local Government	7	101.4800	101.48
Montana State Trust Lands	100	60,228.0662	76,053.47
Montana Fish, Wildlife, and Parks	27	38,021.2435	63,706.97
Montana Dept of Transportation	8	94.3800	94.38
National Park Service	1	665.1000	665.10
US Bureau of Land Management	145	167,625.4831	174,007.83
US Forest Service	17	1,022,997.5310	3,179,395.50

Downloading Data

1. Click the  button. The Download Data window displays.

Montana Digital Atlas

The screenshot shows a web interface titled "Download Data". At the top, it says "Visit the Montana State Library [Data Bundler](#) for additional clip options." Below this is a section for "Clip by Geometry" with an "Edit" link and the text "Type: Watersheds; Criteria: Big Hole ID,MT (10020004); Buffer: None". The "Download Layers" section includes an "Add/Remove Layers" link and a list of layers: County Boundaries, Incorporated Cities and Towns, Indian Reservations, Tax Increment Financing Districts, School District Boundaries - Elementary, School District Boundaries - Secondary, and School District Boundaries - Unified (K-12). A note states: "The map layers you have selected do not all currently have available downloadable layers. Use the Add/Remove Layers link above to select other data, export the report data, or change your selected layers." Below the layers are two dropdown menus for "Output Coordinate System" and "Output Format", both currently set to "Select one". There is an empty text input field for "Email". At the bottom left is a blue button labeled "Request Data".

- You can obtain data clipped to your area of interest using the Digital Atlas.
- The Clip by Geometry section of the window shows the extent used to clip the data for download.
- The Download Layers section shows a list of the downloadable layers in the map. Not all layers are downloadable, so this section may be empty.
- Select the Add/Remove Layers link to include additional layers to your request.
- Select a coordinate system and output format using the pull down menus.
- Provide an email address that will receive a download data link once the request is processed.