

RECLAMATION

Managing Water in the West

DataSpace Console User Guide

Reclamation GIS (BORGIS)



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1 INTRODUCTION

This document provides a user guide to the Reclamation custom software extension for ArcGIS Desktop called DataSpace Console. This user guide provides users and data stewards with instructions for using DataSpace Console to organize and manage Reclamation geospatial data and imagery assets stored on BORGIS Geospatial File Servers, as well as web services from internal and external sources.

DataSpace Console serves as a data access tool for GIS personnel using the ArcGIS Desktop (ArcMap) application that simplifies finding and retrieving geospatial data and imagery managed in Reclamation GIS (BORGIS) distributed data repositories.

1.1 Concepts, Terms and Definitions

The table below defines some concepts that are central to the BORGIS system architecture.

Library Dataspace (Blue folder)	A managed collection of pointers to geospatial data, imagery, and web services organized into a structure (folders and subfolders). Content is managed by a BORGIS Data Steward or GIS personnel designated as a data steward. Library Dataspaces cannot be modified by users; all content is read-only.
Personal Dataspace (Gray folder)	A user-managed collection of pointers to geospatial data, imagery, web services, and other content organized into a tree view structure (folders and subfolders). Layer information is stored locally as a property of a tree view object, which is stored in an .xml file. Users can add layers into Personal Dataspaces from the ArcMap table of contents. Users are responsible for maintaining data source pointers if data moves (except for layers copied from Library Dataspaces). Layer information is stored in an XML file on users' PC. Personal Dataspaces can be converted to Library Dataspaces by BORGIS Data Stewards.

Geospatial Libraries and Dataspaces

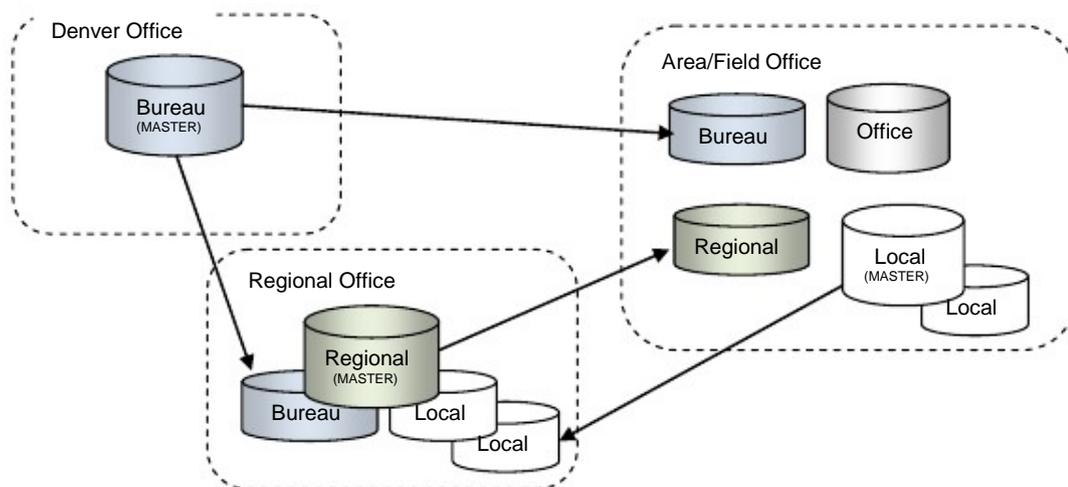
The primary purpose of BORGIS Geospatial Libraries and Dataspaces is to ensure that current, consistent, well-documented geospatial data and related resources are available to GIS users across Reclamation in a form that can be readily used. The data architecture acknowledges Reclamation's organizational structure and strives to meet the unique needs of each organization level.

BORGIS Geospatial Libraries and Dataspaces are designed to correspond with each of the three major organizational tiers of Reclamation – Bureau, Region, and Area. The following table describes each of the Library Dataspaces:

Bureau Tier Library	A compilation of Bureau-wide geospatial data, imagery, and web service layers. The geographically relevant subset of data is distributed to all offices with a BORGIS server. Content is managed by Bureau BORGIS Data Steward.
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Region Tier Library	A compilation of Region-wide and state-wide geospatial data, imagery, and web service layers. The geographically relevant subset of data is distributed to all offices within the Region with a BORGIS server. Content supplements the Bureau Library Dataspace and is managed by Region BORGIS Data Stewards.
Office Tier Library	A compilation of local geospatial data, imagery, and other content typically used by an office. This library type is intended for a single office, and not shared with other offices. NOTE: If a shareable library is desired, use a Local Tier library. Specific functions in DataSpace Console make the Office Tier fast and easy to update and maintain. Content is managed by Local BORGIS Data Stewards or other GIS personnel assigned the duty of data management.
Local Tier Library	A compilation of local geospatial data, imagery, and other content, which might include a Reclamation Project, a special project or study area, an office, or any other context for creating a data compilation. The Local Tier is designed be shareable with other offices. Content is managed by Local BORGIS Data Stewards or other GIS personnel assigned the duty of data management.

The Bureau Tier Library is distributed to the Region and Area/Field offices by the BORGIS Bureau Data Steward. Concurrently, BORGIS Region Data Stewards distribute Region Tier Libraries to the Area/Field offices in their respective regions. Local Tier Libraries may be shared with any another office with a need for the data contained in the library (e.g., Area Office to Region Office or Denver Office, Area Office to Field Office). Creation, management, and deployment of BORGIS Libraries is performed using specifically designed tools in DataSpace Console –Enterprise Data Management Tools (EDM). The figure below illustrates the relationship between the four tiers of Library Dataspaces:



2 DataSpace Console Installation

DataSpace Console is designed to be deployed either manually or using Reclamation's software deployment infrastructure – Microsoft's System Center Configuration Manager (SCCM). DataSpace Console is part of the Reclamation deployment package for ArcGIS Desktop software, which includes the current service pack. DataSpace Console is also packaged separately for installation on previous deployments of ArcGIS Desktop.

For offices where SCCM is not available, the package can be installed manually by local IT personnel.

Requirements: DataSpace Console v2.x requires the prior installation of Microsoft .NET Framework 2.0 or later and ArcGIS Desktop 9.3 or later with current service pack.

ArcGIS 10 requires a DataSpace Console v2.0 of ArcGIS 10.

Contact the GIS Manager or Coordinator for the Region to get more information about getting DataSpace Console installed.

The installer for DataSpace Console places a new icon on the main menu bar in ArcMap label DataSpace.

3 Using DataSpace Console

DataSpace Console is launched by clicking the DataSpace button on the ArcMap main toolbar. It is designed to remain in the foreground when active. It can be minimized or closed when not in use.

There are two distinct type of Dataspaces (refer to Section 1.2). Library Dataspaces are associated with managed geospatial libraries published by Data Stewards at the Bureau, Region, or Office level. Library Dataspaces are displayed as blue folders under the BORGIS Libraries gold folder. Library Dataspaces are loaded by connecting to a server that hosts a BORGIS \geolib file share (refer to Section 3.6.1 below).

Personal Dataspaces (gray folders) can be used for individual needs, or shared with others in the same office location and the same access to data sources. It is recommended that sharing of Personal Dataspaces be limited to occasional, short-term needs of projects within an office. For sharing data with other users in another office, coordinate with a BORGIS Data Steward to process a shared Personal Dataspace into a Local Tier library.

The following sections describe how to use menu options and tools to create and manage Dataspaces.

3.1 Using the "My Tutorial" Dataspace

DataSpace Console has a built-in tutorial dataspace that provide an interactive overview of the main function of the software. The "My Tutorial" dataspace is installed with the software and is loaded when DataSpace Console is launched.

The exercise, in Appendix A of this guide, provides instructions for using the tutorial. There are a couple semantic items that will help with the exercise. A node is an item stored in a folder in DataSpace Console.

3.2 Training

A training package with sample data sets is available for download on the BORGIS Community web site:

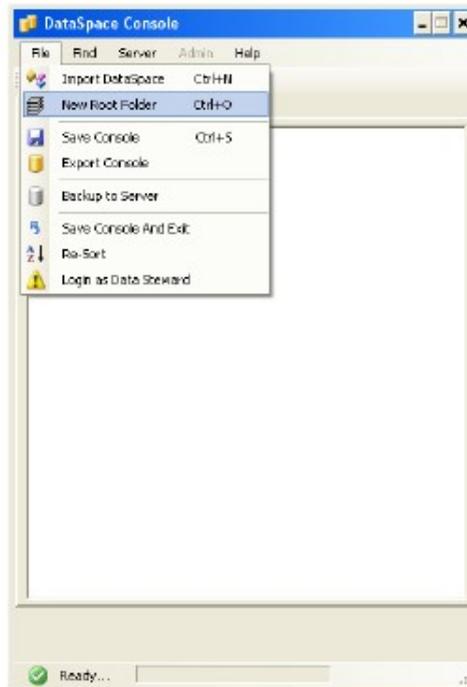
<http://ibr1pnrappgis001.bor.doi.net:11728/sites/BORGISCommunity>

The site also provides information about instructor-led GIS training opportunities, FAQs, a Discussions forum, contacts information for GIS users, and much more.

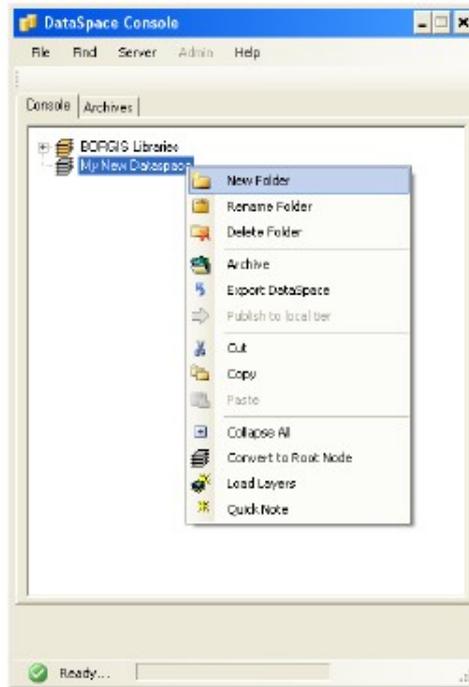
3.3 Creating Dataspaces

There are two distinct types of Dataspaces (as described Section 1.2). Typical GIS users will generally only create Personal Dataspaces.

To create a Personal Dataspace, open DataSpace Console. Then, click on the File menu and select the “New Root Folder” option. Type a name for the new folder into the dialog. A root folder is a Dataspace. The name should reflect something about its contents (e.g., Reclamation Project name, subbasin name, facility name, geographic area, or similar). Spaces are allowed, but avoid special characters.



To create a new folder in a Dataspace (root folder), right-click on the Dataspace and select the “New Folder” option from the context menu. Type a name for the new folder into the dialog.



To save the new Dataspace (so that it will be there the next time DataSpace Console is opened), select “Save Console” from the File menu.

To add layers to the new Dataspace, click on a layer in the ArcMap Table of Contents (TOC) and drag-n-drop it onto a folder in the DataSpace Console window. The layer will appear under the folder. Multiple layers can be added by selecting the layers (hint: hold the Ctrl key to select multiple items in TOC) and drag-n-drop the selection onto a folder in a Dataspace.

3.4 Managing and Sharing a Personal Dataspaces

Dataspaces are portable, and therefore, shareable with other users. Individual Dataspaces (root folders) can be exported to an XML file, and the XML file can be imported back into DataSpace Console. Generally, Dataspaces should be managed in the context of discreet collections like a project or study area.

Sharing Personal Dataspace files has one major caveat, that is, the data sources are defined in the layer files that are stored in the Personal Dataspace (when each layer is added to a Dataspace). If a Personal Dataspace is shared with another user, the recipient must have at least read access to the locations of data sources.

DataSpace Console has the following functions for managing Personal Dataspaces:

- Export Dataspace – on the right-click context menu on each Dataspace folder
- Export Console – in the File menu
- Import Dataspace – in the File menu
- Delete Dataspace – on the right-click menu on each Dataspace folder
- Backup to Server – in the File menu
- Re-Sort – in the File menu

3.4.1 Export Dataspace

This function exports a single Dataspace. To export a Dataspace, right-click on the Dataspace (root folder) and select the “Export Dataspace” option from the context menu. In the dialog, navigate to a location where the dataspace is to be exported. Type a new into the File name: blank, and add .xml to the file name.

The following is an example of a recommended naming convention:

Prineville Reservoir 20080520.xml

3.4.2 Archive

The “Archive” option on the right-click context menu of Personal Dataspaces makes a copy of the currently selected Personal Dataspace and stores in the Archives tab.

Archived Personal Dataspaces can be restored by clicking of the Archives tab, selecting a Personal Dataspace and clicking the Restore button.

3.4.3 Export Console

This function exports the current contents of the Console window to file. This will merge all currently loaded Dataspaces into a single Dataspace file, which may be useful for managing multiple related Dataspaces.

To export all the Dataspaces displayed in the current Console tab, choose the “Export Console” option from the File menu.

NOTE: When importing a saved Console (multiple Dataspaces) when a default server has been set, all library Dataspaces will be refreshed from the server. If a default server is not set, library Dataspaces will use pointers stored in the .xml file. It is highly recommended to keep the default server set (refer to Section 3.5).

3.4.4 Import Dataspace

To import a Dataspace, click on the File menu and select the “Import Dataspace” option, and browse to the desired Dataspace file (.xml), and click the OK button. The imported Dataspace will appear in the Console window. Note: The name of the Dataspace may be different than the file name imported. Dataspace names are stored in the Dataspace .xml file.

3.4.5 Delete Folder

To delete a Dataspace (root folder), right-click on the Dataspace and select the “Delete Folder” option in the context menu.

Note: If a Dataspace is inadvertently deleted (and it was previously saved), it can be recovered by click the X in the upper right corner of the DataSpace Console window and answering “No” when prompted to save. When DataSpace Console is restarted, the deleted Dataspace will be present (unless it had not been saved previously).

To delete a folder in a Dataspace, right-click on the folder and select the “Delete Folder” option in the context menu.

3.4.6 Re-Sort

The “Re-Sort” option on the File menu sorts the contents (folders and layers) of all currently loaded Dataspaces alphabetically. This function should be used occasionally to organize Personal Dataspaces.

3.5 Saving the Contents of DataSpace Console

There are two options when exiting DataSpace Console:

- Save Console and Exit – in the File menu

- Close Window button – the X in the upper right corner of the Console window

3.5.1 Save Console and Exit

The “Save Console and Exit” option on the File menu closes DataSpace Console and saves the currently displayed contents in the Console window. The contents are saved in an xml file located in the MyDataSpace folder in the user’s profile in Documents and Settings. The file contains all the Dataspaces in the DataSpace Console window at the time the “Save and Exit” option is selected.

Importing this Dataspace file is not recommended by may be a last resort for recovering a lost or corrupted DataSpace Console session.

3.5.2 Backup to Server

The “Backup to Server” option on the File menu allows the user to save the contents of the current Console window to a file on a server. It is recommended that users regularly use this function to make a copy of their Personal Dataspaces in their user or common directory. Also refer to Section 3.4.2.

3.6 Setting and Managing Library Dataspaces

Geospatial Library Dataspaces are stored on a \geolib file share on a local file server. The libraries are managed by Data Stewards at the Bureau, Region, and Local level. The Server menu provides four functions for setting the server and managing the associated Dataspaces.

The contents of Library Dataspaces are refreshed automatically each time DataSpace Console is started. Library Dataspace are stored on a BORGIS Geospatial File Server or file share on a server managed by IT Services. Data Stewards actively update and manage data in libraries with minimal disruption to users. Standard data sources paths greatly reduce the incidence of broken data source pointers in the layers in ArcMap.

Users may copy layers from a Library Dataspaces into a Personal Dataspaces, if desired. This allows users to preserve changes to layer properties (e.g., change color, symbol, query definition, etc.) that may be useful again later.

NOTE: Copying layers from a Library Dataspace into Personal Dataspace actually copies only the layer file. This makes the layer properties, including Data Source, the responsibility of the user. That is, the user assumes responsibility for maintaining the layer file. It will not be refreshed when the content of the original Library Dataspaces is updated.

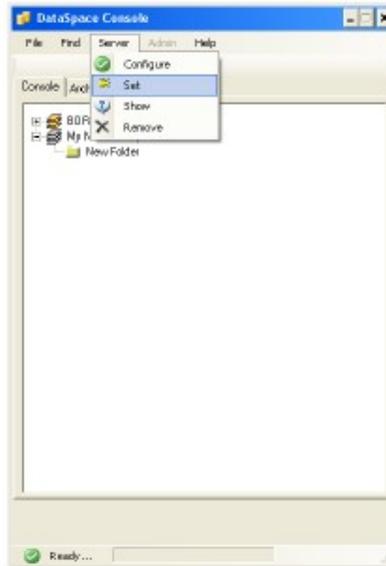
The following subsections describe how to use the functions under the Manage Default Server sub-menu under the Servers menu.

3.6.1 Set the Server

The Server is a user configurable setting in DataSpace Console. This setting should be set to the \geolib file share on a BORGIS Geospatial File Server or local IT-managed server.

NOTE: This file share must be mapped to the drive letter W:\. All data source paths are set to the drive letter W:\.

1. To set the Server, click the select the “Set” option on the Servers menu.



NOTE: If the W:\ drive is not already mapped to the \geolib share, open Windows Explorer and map a drive to the \geolib share. Be sure to select W:\ for the drive letter.

2. In the Browse for Folder dialog (popup), expand My Computer and navigate to drive letter W:\, which is mapped to file share on BORGIS Geospatial File Server (e.g., geolib on ibr1pnrfpgis002). Expand W:\ and select the \BORGIS folder.



3. With the \BORGIS folder highlighted, click the OK button.

NOTE: Selecting the wrong folder will result in an error message. Just try again.

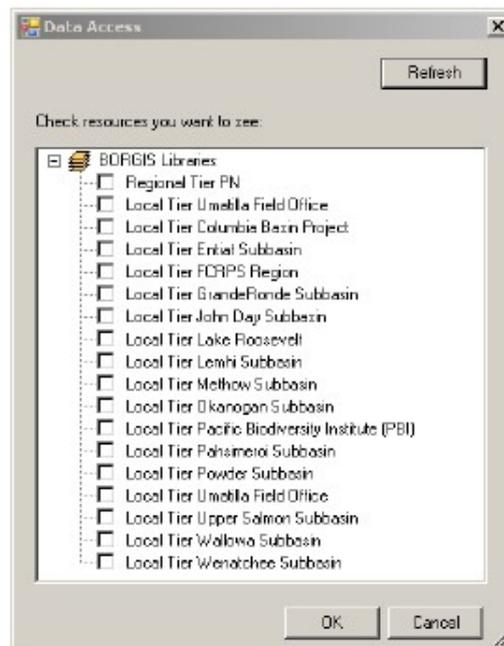
4. Proceed to the next section – Configure Dataspaces.

Click the OK button to load the selected Dataspaces. Once configured the selected Dataspaces will be reloaded each time DataSpace Console is started, until the user changes the configuration.

3.6.2 Configure Dataspaces

DataSpace Console allows users to select which Dataspaces to display. Use the Configure option in the Server menu to display the Dataspaces available on the server (previously mapped to W:\).

1. In the Server menu, click the Configure option to open the Select Dataspaces to Load dialog (shown below). This option allows the user to add or remove Dataspaces from the Console window.
2. Click the Refresh button to load a current list of available Dataspaces.



3. Select the desired Dataspaces to load by checking the boxes next to each Dataspace. Dataspaces can be removed by unchecking them in this dialog. When the OK button is clicked, the DataSpace Console window will update to reflect choices made in this dialog.

3.6.3 Show Current Server

The Show option on the Server menu simply displays the current path to the BORGIS Geospatial Library server. In most locations, this will show W:\BORGIS (below). In a few cases, this option will show the UNC path of the currently set Server.



3.6.4 Remove Server

The Remove option in the Server menu removes Server setting. The server setting is saved when the Save and Exit option is used to exit DataSpace Console. For mobile users or users that work in multiple offices, the option is useful for disconnecting the server. The option should be used when users are not connected to the Reclamation network.

3.7 Finding Data

The Find function is essentially a simple search tool that allows users to query the current contents of DataSpace Console to locate layers that match search parameters. Search parameters can be whole or partial words. Searches will return any folder names and/or layer names that match the search criteria. Search results are displayed in a popup dialog.

Search results can be added to ArcMap by right-clicking on an item in the results dialog and selecting "Add Layer to ArcMap" option from the context menu. Search results may be layers or a folder name that meets the search criteria. Expand any folders returned in the search results to view the layers that met the search criteria.

NOTE: Search only examines the contents of all the currently loaded Dataspaces.

3.8 Dataspace Folder Functions

This section describes the functions available on individual folders in Dataspaces in DataSpace Console. These functions are accessed on context menus by right-clicking on any folder in a Dataspace.

3.8.1 Convert to Root Node

The "Convert to Root Node" option on the context menu of folders changes a folder within a Dataspace into a Root Folder, which can then be managed as a Personal Dataspace.

NOTE: This function is not available on Library Dataspaces.

3.8.2 Collapse All

The "Collapse All" option in the layer context menu (right-click layer) reduces all folders and subfolders to an un-expanded state.

3.9 Dataspace Layer Functions

This section describes the functions available on individual layers in Dataspaces in DataSpace Console. These functions are accessed on context menus by right-clicking on any layer in a Dataspace.

3.9.1 Add Layer to ArcMap

The “Add Layer to ArcMap” option in the layer context menu (right-click layer) adds the currently selected layer to the ArcMap Table of Contents. Multiple layers can be added at once by holding down the Ctrl key and clicking on layers in the Dataspace, then right-click on the selected layers and select the “Add Layer to ArcMap” option in the context menu.

Individual layers can also be added to the ArcMap Table of Contents by double-clicking the layer icon or name.

3.9.2 Rename

The “Rename” option in the layer context menu (right-click layer) allows the currently selected layer to be renamed. Renamed layers can be saved only in Personal Dataspaces.

NOTE: Renaming a layer in a Library Dataspace does not change the title in the ArcMap Table of Contents. Renamed layers in Library Dataspace will revert to the original name the next time DataSpace Console is started.

3.9.3 Remove

The “Remove” option in the layer context menu (right-click layer) deletes the currently selected layer from the Dataspace. Multiple layers can be removed at once by holding down the Ctrl key and clicking on layers in the Dataspace, then right-click on the selected layers and select the “Remove” option in the context menu.

NOTE: Removing a layer in a Library Dataspace does not delete that data ~ only the layer in the Dataspace. Layers removed from Library Dataspaces will return the next time DataSpace Console is started.

3.9.4 Metadata

The “Metadata” option in the layer context menu (right-click layer) opens a browser window with the metadata for the currently selected layer. Metadata shown are the actual metadata with the data set. The browser window may simply be closed when metadata is no longer needed.

3.9.5 Update Layer

The “Update Layer” option in the layer context menu (right-click layer) updates the layer properties in the layer stored in the Dataspace. The layer being updated must be loaded into the ArcMap Table of Contents. Changes to layer properties are made in the ArcMap Table of Contents (right-click the layer and select Properties).

NOTE: Changes to layers in Library Dataspaces will revert to the original state the next time DataSpace Console is started.

3.9.6 Show Source

The “Show Source” option in the layer context menu (right-click layer) displays the full path and name of the data source stored in the Dataspace layer. Renamed layers can be saved only in Personal Dataspaces.

NOTE: Renaming a layer in a Library Dataspace does not change the title in the ArcMap Table of Contents. Renamed layers in Library Dataspace will revert to the original name the next time DataSpace Console is started.

3.9.7 Cut

The “Cut” option in the layer context menu (right-click layer) cuts the currently selected layer, which can then be pasted into another folder or Dataspace in the Console window.

3.9.8 Copy

The “Copy” option in the layer context menu (right-click layer) copies the currently selected layer, which can then be pasted into another folder or Dataspace in the Console window.

3.9.9 Quick Note

The “Quick Note” option in the layer context menu (right-click layer) provides a place where a user can make a short description for folders and layers. Note: The contents of the note are not available to the Find function.

4 Administrative Functions

Function and tools found under the Admin menu are intended for use by Data Stewards and GIS personnel with data management duties. The menu options require a password to enable functionality. Contact a BORGIS Data Steward for further information.

4.1 Login as Data Steward

The “Login as Data Steward” option on the Admin menu prompts for a password to unlock the functions in this menu.