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Discover for ArcGIS Pro 2.3

Release Notes

Contents

Overview

Built as a plugin to ArcGIS Pro, Discover for ArcGIS Pro is a comprehensive package for the importation, centralisation and analysis of geoscientific data, whether you are conducting mineral exploration, or environmental assessments.

Import drillhole data from numerous different data repositories and seamlessly refresh data as new data becomes available. Create legends to apply to all of your ArcGIS Pro data types: surface, drillhole, line or point data.

Create section templates to manage all of your section data and styling in 2D or 3D to keep all section data in standard formats and styles across your project. Digitise data, register images on section and seamlessly send this to 3D. Import 2D data and 3D data from a wide variety of common mining data formats and visualise all of this data in the Discover 3D environment.

Discover utilises ArcGIS Pro's unique ability to switch seamlessly from 2D to 3D GIS environments. Share data easily with the Web share function, where 2D and 3D scenes can be shared with colleagues within the organisation, as well as the general public.

Technical Support and Further Information

If you are a licensed Discover for ArcGIS Pro user, you can request support via the Support Portal (https://www.dataminesoftware.com/support/) or by emailing support@dataminesoftware.com.

This document includes cumulative release notes since Discover for ArcGIS Pro 2.3.

Release notes for other versions of Discover for ArcGIS Pro are available via the Support Portal.

Discover for ArcGIS Pro 2.3 (February 2026)

This release brings a major update to Discover for ArcGIS Pro, introducing a wide range of new tools and improvements designed to enhance voxel modelling, image processing, machine learning, and drillhole project management.

Modelling workflows have been significantly expanded with the addition of tools to clip voxel models using either a solid multipatch object or a surface layer, offering better representation of terrain or geological boundaries. You can also now create a variety of voxel models based on your dataset type, whether it is numeric (continuous), categorical (discrete), density-based, or distance-based, allowing for flexible and detailed subsurface modelling. Once generated, these models can be analysed with the **Tonnes and Grade** tool to estimate ore grades and tonnes, supporting critical resource evaluation workflows.

For raster and image analysis, a new **Canny Edge Detection** tool enables you to detect edges in high-contrast raster images and convert these into vector feature classes. Ideal for use with scanned geological maps, the tool relies on pixel intensity thresholds to identify meaningful boundaries. In addition, the updated **Raster Calculator** allows you to perform mathematical operations across one or more raster grids, offering more control and precision in raster data processing.

Data science capabilities are also boosted with the **Machine Learning** tool, which supports both K-Means Clustering and analysis across point feature classes and multi-band rasters. This functionality makes it easier to interpret large and complex datasets by identifying trends and patterns.

Lastly, the drillhole project framework has undergone a complete overhaul. The new architecture allows multiple drillhole and section projects within a single ESRI project, offering more flexibility and scalability. Sections are now independent of drillhole projects and no longer require topographic surfaces, which can be selected during section creation. The **Drillhole Project Manager** streamlines project oversight, while support for both legacy and new project types ensures compatibility with existing workflows. The **Generate Sections** tool has also been updated to reflect these structural improvements. The new **Stereonet** tool allows you to display and analyse structural point data from ArcGIS Pro in an external stereonet application.

Clip Voxel with a Solid Tool

You can now use the **Clip Voxel with Solid** tool to clip a voxel model using a multipatch solid object, providing more precise control over the shape and extent of your voxel data. This tool is particularly useful when you need to align your voxel

model with complex geological volumes or engineered shapes.

Canny Edge Detection Tool

The new **Canny Edge Detection** tool allows you to detect edges in raster images and output the results as a vector feature class, ideal for highlighting boundaries and line work in high-contrast imagery.

This tool is particularly useful for interpreting scanned geological maps or other images with clearly defined contrasts between features. However, it is less effective on low-contrast images, such as photographs of natural terrain with subtle variations in colour or tone. The tool works by converting colour images into grey-scale intensity values, simplifying the image and highlighting areas where significant changes in intensity occur—these are interpreted as edges.

You can fine-tune edge detection by specifying low and high intensity thresholds. The grey-scale range spans from 0 (black) to 255 (white), and thresholds are typically set using a 2:1 or 3:1 ratio. For example, if edges are lighter in tone, a high threshold of 200 and a low threshold of 100 might be used. This helps ensure the tool captures meaningful boundaries without over-interpreting minor variations.

The edge detection algorithm applies a logical method to determine if a pixel should be classified as an edge. Pixels above the high threshold are automatically accepted as edges, those below the low threshold are rejected, and pixels in between are accepted only if they are connected to a strong edge pixel. This approach ensures a cleaner, more accurate edge network.

With this tool, you can quickly convert complex raster data into a usable vector format, making it easier to extract features for further analysis or integration into your geological workflows.

Clip Voxel to a Surface Tool

The **Clip Voxel with Surface** tool allows you to refine the extent of a voxel model using a surface layer, helping your model more accurately reflect the terrain or geological horizon.

By clipping a voxel model to a surface, you can remove parts of the model that fall outside your area of interest or lie above or below a specific elevation. This is particularly useful for improving the visual clarity of your data and focusing analysis on meaningful volumes within the subsurface. The tool supports a wide range of modelling scenarios, whether you're aligning a voxel to a topographic surface, a

DISCOVER   DATAMINE

geological boundary, or any custom surface layer relevant to your project. It provides a straightforward way to ensure your model is both geologically accurate and easier to interpret.

Create a Continuous Voxel Model Tool

The **Create Continuous Voxel Model** tool enables you to generate a voxel model from numeric data, such as assay values recorded in drillhole samples, allowing for clear visualisation of value distribution throughout a 3D volume.

This tool produces classified voxel blocks that represent the spatial variation of numeric attributes, such as grade, geochemistry, or geophysical measurements, across the modelled domain. It's particularly effective for identifying trends, anomalies, and zones of interest within a dataset.

Create a Density Voxel Model Tool

The **Create Density Voxel Model** tool uses a density gridding method to generate a voxel model that represents the concentration of points within each grid cell, helping you visualise the distribution and coverage of spatial data.

This tool is particularly useful for understanding the sampling density of your dataset, whether from drillhole locations, geochemical points, or any other spatial data input. By identifying areas of high or low data concentration, you can assess the completeness of your dataset and highlight regions that may require additional sampling or investigation.

Create a Discrete Voxel Model Tool

The Create Discrete Voxel Model tool allows you to generate a voxel model from categorical data, such as geological rock codes recorded in drillhole samples, enabling clear representation of geological domains in three dimensions.

By converting text-based attributes into classified voxel blocks, this tool helps you visualise the spatial extent of different geological units or categories within your dataset. Each voxel block is assigned to a domain based on the input value, providing a structured and interpretable model of subsurface geology.

Create a Distance Voxel Model Tool

The **Create Distance Voxel Model** tool allows you to analyse the spatial relationship between data points by generating a voxel model that records the distance from the centre of each grid cell to the nearest valid data point. This tool provides valuable insight into data distribution and is particularly useful for identifying gaps in spatial coverage.

By assessing proximity across your dataset, the distance voxel model can highlight undersampled or data-poor regions, helping you make informed decisions about where additional sampling or data collection may be needed. This is especially helpful in early-stage exploration or when validating the reliability of existing data.

Machine Learning Tool

The **Machine Learning** tool adds new capabilities for analysing spatial data by supporting both point feature classes and multi-band rasters. Using techniques such as K-Means Clustering, you can simplify complex datasets to identify patterns and trends that may not be immediately visible.

By grouping data based on attribute similarity, the tool helps you interpret variations across datasets such as geochemistry, drillhole data, satellite imagery, or airborne geophysics. This makes it easier to extract meaningful insights and apply data-driven interpretation across a wide range of geoscientific workflows.

Raster Calculator Tool

The **Raster Calculator** tool allows you to perform mathematical operations on one or more raster grids, such as combining grids or applying constant values. This provides a simple and flexible way to derive new raster outputs and adjust existing datasets for analysis.

The tool is designed to work with numeric raster grids, including elevation models and geophysical or geochemical surfaces, and does not support raster image files.

Tonnes and Grade Tool

The **Tonnes and Grade** tool provides quick estimates of ore tonnes and grades from voxel models, supporting resource evaluation and decision-making. It works with continuous, discrete, and domained continuous voxel types created in

Discover or imported from external sources.

Using NetCDF voxel inputs, you can apply parameters such as density, cut-off values, and domains to generate a summary table of tonnes and grade results, helping you rapidly assess the economic potential of a deposit.

Stereonet Tool

The **Stereonet** tool allows you to display and analyse structural point data from ArcGIS Pro in an external stereonet application, helping you identify structural trends and support geological interpretation.

Using the **Transfer Data to Stereonet** tool, validated structure tables can be sent directly without manual field mapping. Multiple structure tables can be loaded, with one viewed at a time for focused analysis.

Drillhole Project Management

This release introduces a major update to drillhole project management in Discover for ArcGIS Pro, with a redesigned architecture that supports multiple drillhole projects and more flexible section workflows.

You can now manage multiple drillhole and trench projects within a single ESRI project, each stored in its own geodatabase. A single, independent section project is also supported and can be created without drillhole data, using only a section line and surface where required.

These changes are managed through the new **Drillhole Project Manager**, allowing you to organise and switch between datasets without tying sections to a specific drillhole project. Surface and topographic layers are now selected during section creation, rather than being mandatory project components.

Discover supports both the new and legacy drillhole project modes, with the new mode enabled by default. The **Generate Sections** tool has been updated to support this architecture, allowing surface drapes and subterranean settings to be defined at creation time for improved flexibility.

Generate Sections Tool

The **Generate Sections** tool has been updated to support the new drillhole project architecture, providing greater flexibility in how sections are created and used.

Sections are now independent of drillhole projects and can be shared across multiple drillhole datasets within the same ESRI project. During section creation, you can directly select the topographic grid and define surface drape and subterranean settings, replacing the legacy project-based configuration and improving overall workflow flexibility.

Defect Fixes

- Importing drillholes from Fusion would display an error when refreshing the data. This has been resolved so users can now refresh drillhole imports without interruption.

- An issue has been fixed where dark theme icons were not displaying correctly in the Gallery toolbar.

- An issue has been fixed where converting a section layer to 3D resulted in an incorrect output if the section's spatial reference unit differed from the output spatial reference unit.

- An issue has been fixed where new raster layers created using the **Create Raster** tool displayed incorrect minimum and maximum values.

- Desurvey traces appeared incorrectly when the downhole depth unit differed from the coordinate system unit, especially after restarting ArcGIS Pro. This issue has been fixed and desurvey traces are now consistently accurate regardless of unit mismatch or session state.

- **Section** tool results were incorrect when both the coordinate system unit and downhole depth unit were non-metric. These tools now correctly process and display section data for all supported unit combinations.

- An error occurred when creating a solid from a template while selecting tielines from a shapefile. The tool has been updated to support shapefile-sourced tielines without error.

- The **Extrusion** tool previously showed the elevation ground layer from the current front scene instead of the selected scene. The map selector has been removed to ensure the correct scene is always used.

- An issue has been fixed where drillholes displayed in 3D were incorrectly placed under the 2D group in the table of contents.

- Geophysical raster filters such as **Reduction to Pole** produced incorrect results. The filter algorithms have been corrected to ensure accurate geophysical processing.

- The **Plane from String** tool displayed the elevation ground layer for the current front scene instead of the selected scene. The map selector has been removed to ensure correct scene context.

- An error occurred when vectorizing a raster grid that was selected through browsing but not opened in a map. The tool now handles these cases correctly and no longer requires the raster to be opened first.

- An issue has been fixed where the **Table Validation** did not work for feature layers sourced from a GeoPackage file in Mobile.

- Importing **Discover MapInfo** drillhole data would display an exception if the project name included a space. The import process now handles project names with spaces correctly.

- An issue has been fixed where an exception occurred when using the **Create Raster** from **LiDAR LAS** tool with a non-LASF format file.

- An issue has been fixed where, in ArcGIS Pro version 3.4 or later, the **Feature to Section** tool failed to overwrite the output feature class.

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