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Scheduling Geoprocessing Tools in ArcGIS Pro
January 4, 2024

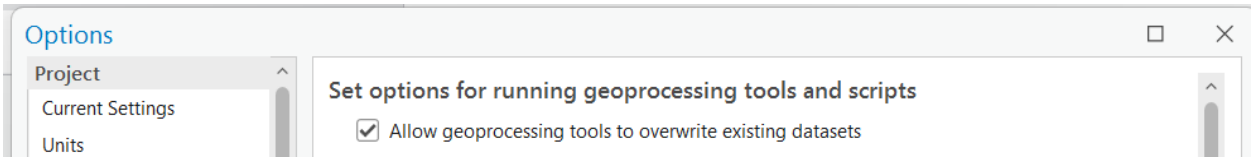
Overview
Illustrate how to schedule geoprocessing tools in ArcGIS Pro.

Goal
Did you know you can schedule a geoprocessing tool directly from ArcGIS Pro? This tutorial will go over a few examples of how to do this as well as note some of the additional considerations for scheduling geoprocessing tools.

Finished Product (if applicable)

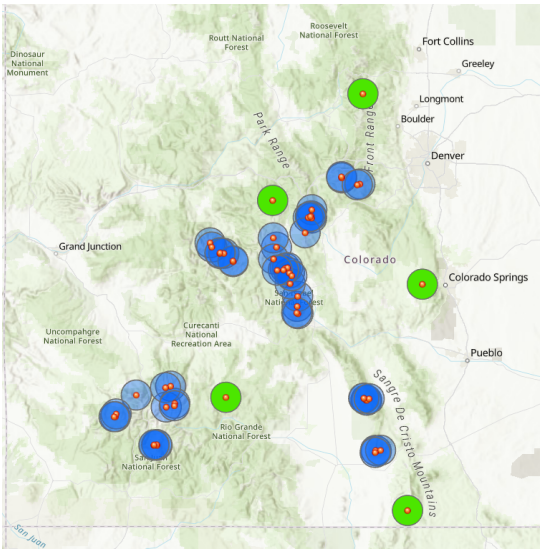
Recording found here!

The first section will cover how to schedule a geoprocessing tool that will overwrite the output each time. This is assuming that in your ArcGIS Pro settings, you have the following box checked to allow geoprocessing tools to overwrite existing datasets.

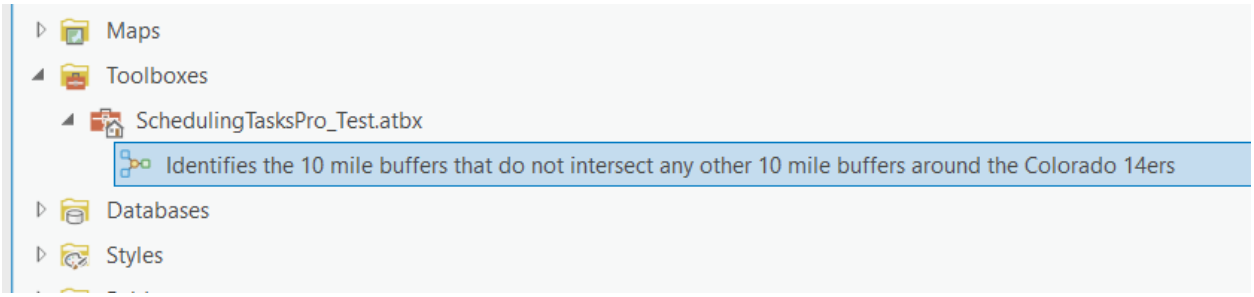


Scheduling a geoprocessing tool – Custom tool / Overwrite output

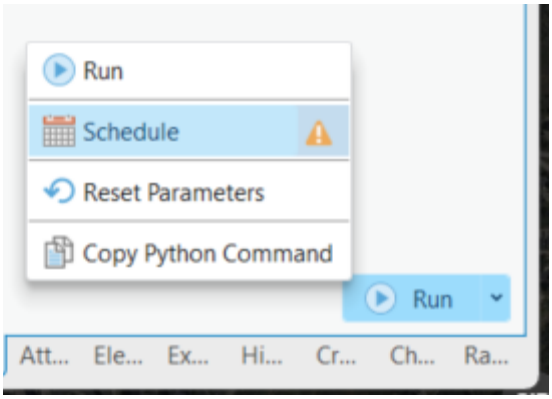
This example will demonstrate how to run a custom geoprocessing tool that was built with ModelBuilder. This process would be the same for scheduling a single geoprocessing tool, but note that you can schedule custom tools as well. This tool takes a layer of the Colorado 14ers, creates a 10 mile buffer around each one, and then selects the buffers that do not intersect with any other buffers.



1. Open the Geoprocessing tool you would like to schedule



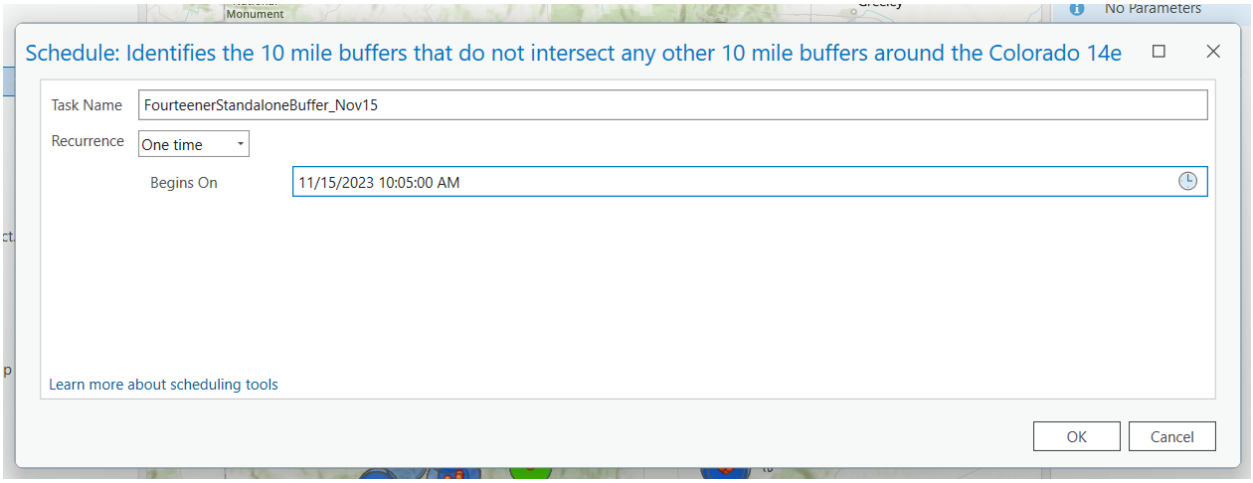
2. Fill out the parameters of the tool
3. In the bottom corner, choose the dropdown next to 'Run' to expand the options
4. Choose 'Schedule'



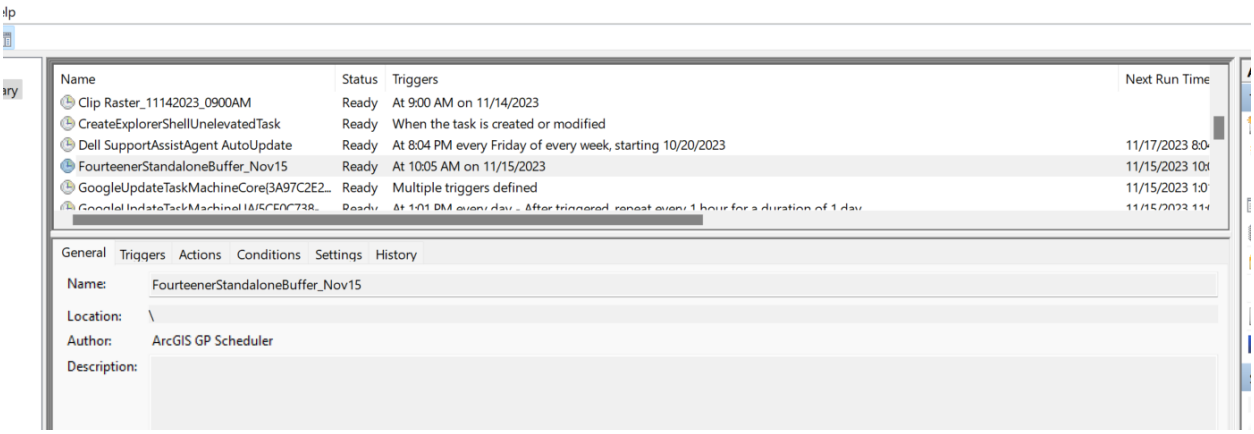
A window will appear. This is where you will set up the frequency and run time for your scheduled tool.

5. Fill out the task name – this is what will show up in your Task Scheduler!

6. Fill out the Recurrence and Begins On to specify the frequency and start date/time of your scheduled tool



This tool is being scheduled to run just once, at 10:05 a.m on November 15, 2023. In the Task Scheduler, you can also view this task because ArcGIS Pro is using Windows Task Scheduler to run your tools at your specified time.



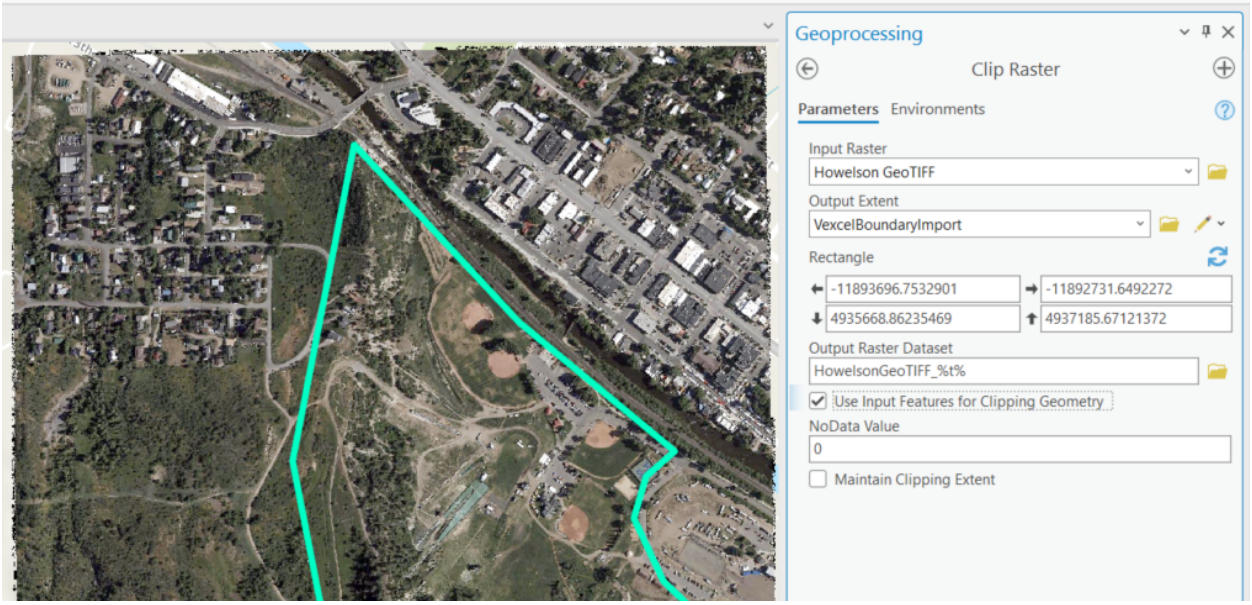
Scheduling a geoprocessing tool – No overwrite on output

This example demonstrates how to set up a tool so that the output is not overwritten, but instead a new output (with a time stamp) is created each time the scheduled tool runs. The steps for this are *almost* identical to the process above, with one key change.

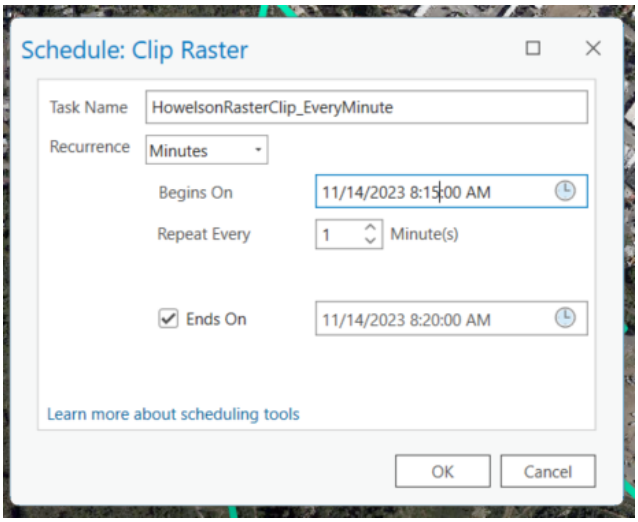
1. In the geoprocessing tool parameters, locate the output parameter

In order to avoid overwriting the output, we will include a time stamp variable (**%t%)** in the output name.

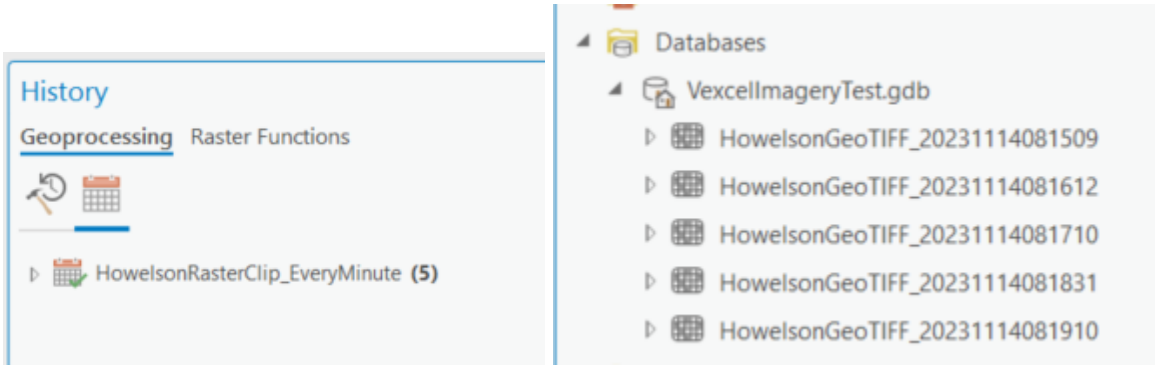
2. Add '%t%' to your output feature class name



This tool was scheduled to run once, but run every minute for 5 minutes. This would result in 5 distinct outputs.



The geoprocessing history shows that the tool was run 5 times total and when we open the geodatabase where our output was set to be stored, there are 5 distinct GeoTIFFs with timestamps, therefore avoiding the output being overwritten.

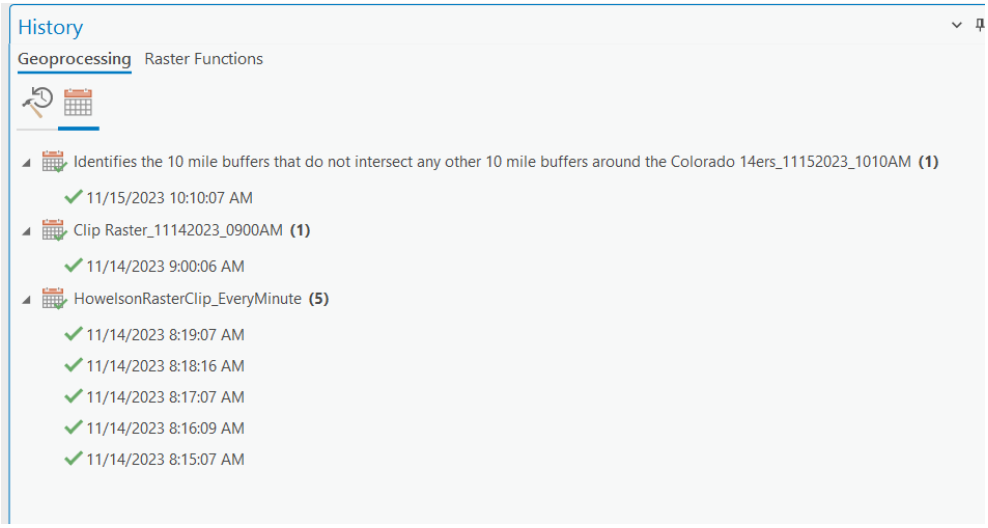


Verifying Scheduled Tool Success

You can check if your scheduled tool ran successfully through the Geoprocessing History in ArcGIS Pro. Click the calendar icon to view the scheduled tools. According to the Esri Schedule geoprocessing tools page…

"*The Scheduled Tools section of the Geoprocessing tab in the History pane lists all tools that are scheduled to run on the machine using your user account, regardless of the project from which the tools were scheduled. You must be signed in to the machine for scheduled tools to run.*

Each tool in the Scheduled Tools section includes a list of the history of the tool. Each time the scheduled tool runs, a new time-stamped item is added below the entry for the scheduled tool with an icon indicating whether the tool completed successfully or failed."



For more information on scheduling tools directly from ArcGIS Pro and more advanced applications regarding python and logs, visit the Esri Scheduling geoprocessing tools page.

As always, if you have any questions, reach out to us at oit_gis@state.co.us!