Population Counts (Step 3)

Title   Population Counts (Step 3)

Description

This tool is a follow up to the Colony Selection and Filter (Step 2) tool. This tool uses the output of a high pass filter to identify and count individual penguins using a threshold provided by the user. The tool creates 3 outputs: (1) a layer showing the polygons for the colonies identified using the multispectral image, (2) a layer showing the polygons for each individual penguin identified using the thermal image, and (3) a table showing the number of penguins in each colony, the area of each colony in sq. m, and the density of penguins per sq. m of each colony.

Usage

This tool is a follow up to the Colony Selection and Filter (Step 2) tool. This tool uses the output of a high pass filter to identify and count individual penguins using a threshold provided by the user. The tool creates 3 outputs: (1) a layer showing the polygons for the colonies identified using the multispectral image, (2) a layer showing the polygons for each individual penguin identified using the thermal image, and (3) a table showing the number of penguins in each colony, the area of each colony in sq. m, and the density of penguins per sq. m of each colony.

Syntax

PopulationCountingStep3 (Input_threshold_value_for_the_highpass_filter_output, {Create_points_to_find_highpass_threshold_value_for_penguins}, Input_identifying_name_to_put_used_to_name_final_files)

Parameter	Explanation	Data Type
Input_threshold_value_for_the_highpass_filter_output	**Dialog Reference** Similar to the threshold input in the Step1 tool, this is the value that will be used as a threshold to select all the pixels that are penguins. The next parameter will calculate this value but having you click on pixels that contain the lower values of the highpass filter and averaging the values. So if you prefer to examine the image yourself and choose a value, enter it here. If you prefer to use the next parameter to calculate the threshold then leave this value as "default", which is the default value. This value should be the lowest highpass filter value that represents a penguin. **Python Reference** Similar to the threshold input in the Step1 tool, this is the value that will be used as a threshold to select all the pixels that are penguins. The next parameter will calculate this value but having you click on pixels that contain the lower values of the highpass filter and averaging the values. So if you prefer to examine the image yourself and choose a value, enter it here. If you prefer to use the next parameter to calculate the threshold then leave this value as "default", which is the default value.	String

This value should be the lowest highpass filter value that represents a penguin.

Create_points_to_find_highpass_threshold_value_for_penguins (Optional)	Dialog Reference Make sure that the highpass layer is displayed for this step (it already should be displayed after the Step 2 tool). Using the feature set tool, zoom in to the point where you can distinguish individual raster cells and then click on many cells that represent the lowest highpass values that represent penguins. This can be achieved by looking for the darker cells that are penguins or by clicking on the dark pixels at the end of the penguin shapes. An example of these points is shown in the tool sidebar image. --- Python Reference Make sure that the highpass layer is displayed for this step (it already should be displayed after the Step 2 tool). Using the feature set tool, zoom in to the point where you can distinguish individual raster cells and then click on many cells that represent the lowest highpass values that represent penguins. This can be achieved by looking for the darker cells that are penguins or by clicking on the dark pixels at the end of the penguin shapes. An example of these points is shown in the tool sidebar image.	Feature Set
Input_identifying_name_to_put_used_to_name_final_files	Dialog Reference This name will be attached to the 3 outputs that are saved in the results folder. This name should be something to identify the data, such as the name of the location. --- Python Reference This name will be attached to the 3 outputs that are saved in the results folder. This name should be something to identify the data, such as the name of the location.	String

Code Samples

There are no code samples for this tool.

Side-panel Help Illustration

Side-panel Help Illustration

Tags

penguins, UAV, remote sensing, ArcGIS, python, user input, thermal imagery, multispectral imagery, population counts

Credits

Clara Bird, Duke Marine Robotics and Remote Sensing Lab, Duke University, 2018.

Use limitations

There are no access and use limitations for this item.

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