

# Otolith

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## Description:




The purpose of this application is to analyze fish otoliths by looking at tree-ring like markings on the otoliths.

## User Interface:

The Otolith app is structured like a Wizard – it provides a series of dialog box that step you through the process of defining the required information, selecting options, and setting various tuning parameters. When you initially click on the Otolith tool, the first page of the wizard is displayed (shown to the right).

### Step 1 – Image

Use the options on this page to identify the load the images and the measurement options file you want to use for the otolith analysis operation.

-  Click this tool to access the Open dialog box for loading images. Navigate to the image that you want to be analyzed, and select them.
-  Click this tool to access the Open dialog box for loading measurements option files. Navigate to the desired Otolith measurements options file that contains the measurement options you want to use. This determines what measurements are collected.
-  Click this tool to open the *Options* page.

**Next:** Click the Next button to proceed to the second page of the Wizard.

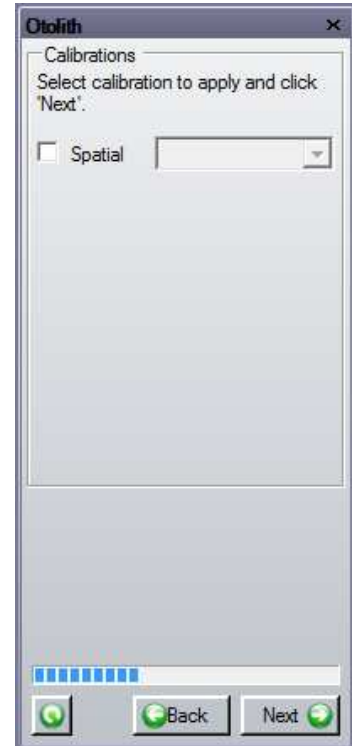


## Step 2 –Calibrations

On this page of the Wizard, identify what spatial calibration definition to use (if any) for calibrating the otolith measurements. If **Spatial** is checked, then the selected calibration will be applied to the image.

Not that the last item listed in the calibration list box is “Edit Calibration.” Select this if you want to open the *Spatial Calibration* dialog box and define a new spatial calibration to use.

Click **Next** to proceed to the next page of the Wizard.

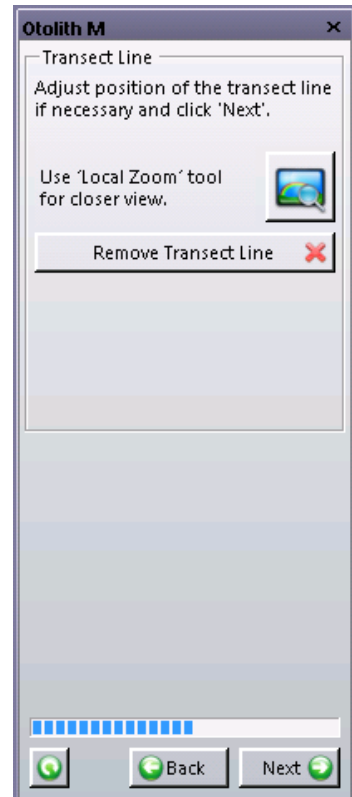


## Step 3 –Transect Line

This step provides options and tools to add a transect line to the image. When this page is displayed, the polyline tool will be started automatically. Use the polyline tool to draw a transect line from the focus to the edge of the otolith.


A short-cut to the **Local Zoom** tool is provided so that you can easily access it in the event you need to make fine adjustments to the placement of the transect line.

Click **Next** to proceed to the next page of the Wizard.

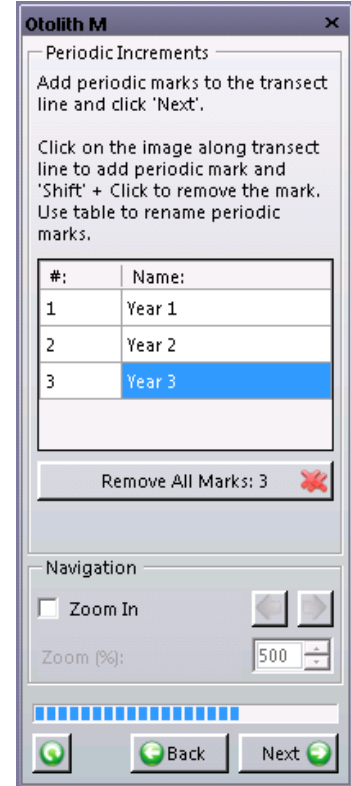


### Step 4 – Periodic Increments

This step provides options and tools to add and remove periodic marks. Use a mouse to click along the transect line where you want to add periodic marks on the image. The list of all periodic marks added to the image is displayed in the table. Optionally, you can change the name of the mark by typing new name in the 'Name' column.


-  Use this tool to remove periodic marks.
- **Zoom In:** Check this box to enable the zoom feature. When enabled, you can use the zoom controls to zoom in and out on the transect line at the locations you want to add major marks.

Click **Next** to proceed to the next page of the Wizard.

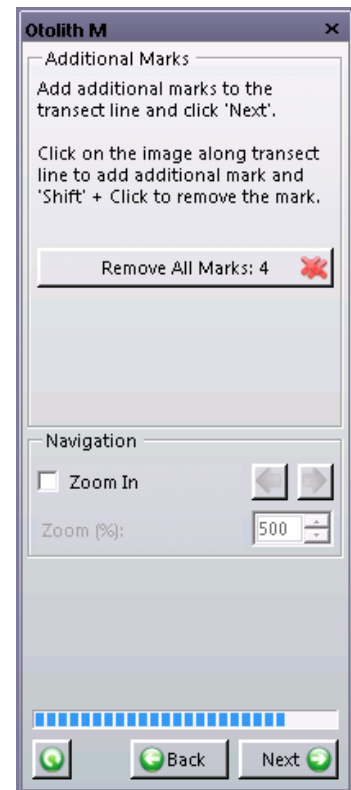


### Step 5 – Additional Marks

This step provides options and tools to add/remove additional marks. Use a mouse to click along the transect line where you want to add additional marks on the image.





-  Use this tool to remove additional marks.
- **Zoom In:** Check this box to enable the zoom feature. When enabled, you can use the zoom controls to zoom in and out on the transect line at the locations you want to add additional marks.

Click **Next** to proceed to the next page of the Wizard.



## Step 6 – Result

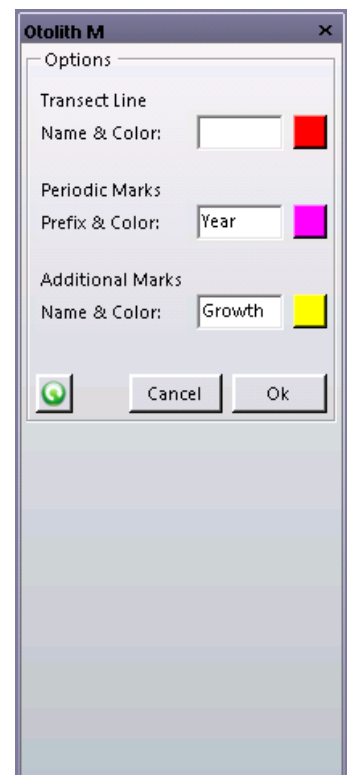
This step provides options and tools to save/export/share the results.

-  Use this tool to save the otolith measurement data to a file.
-  Click this tool to export the measurement data into an Excel spreadsheet.
-  Click this tool to export the luminance data into an Excel spreadsheet.
-  Click this tool to snap an image capture of the current view with the current zoom and all measurements and annotations. The current view is captured into a new image.



## Step 7 – Options

The Options page define the name and color to be applied to the transect line, periodic marks, and additional marks.



## Example of the exported data:

Otolith M

Image Name: 20110404\_5589334674.jpg

Periodic #:	Position (px):	Location X (px):	Location Y (px):	Intensity (lum):	Distance (px):	Label:
1	39.735	575.756	397.891	223.74	39.735	Year 1
2	169.817	504.381	293.603	171.324	130.083	Year 2
3	285.074	469.934	184.17	147.323	115.257	Year 3
Additional #:	Position (px):	Location X (px):	Location Y (px):	Intensity (lum):	Distance (px):	Periodic:
1	54.411	564.275	389.918	197.66	54.411	Year 2
2	116.698	524.939	342.137	150.114	62.288	Year 2
3	177.288	501.958	287.047	167.243	60.589	Year 3
4	248.137	479.873	219.727	163.934	70.849	Year 3

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