

## Annotations Tutorial

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In this tutorial, you will use ENVI® to display a QuickBird multispectral image on which you will create new annotation layers.

### Files Used in This Tutorial

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Tutorial files are available from the Exelis VIS website or on the ENVI Resource DVD in the `feature_extraction` directory.

File	Description
<code>qb_colorado.dat</code>	QuickBird multispectral image, Boulder, CO, USA, captured July 4, 2005
<code>qb_colorado.hdr</code>	Header file for above

QuickBird files are courtesy of DigitalGlobe and may not be reproduced without explicit permission from DigitalGlobe.


### Starting ENVI

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- Windows Start menu: Select **Programs > ENVI x.x > ENVI**.
- UNIX: Type `envi` at the UNIX command line.

### Opening and Displaying an Image

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1. Click the **Open** button  on the toolbar. The Open dialog appears.
2. Navigate to `feature_extraction` and open `qb_colorado.dat`.

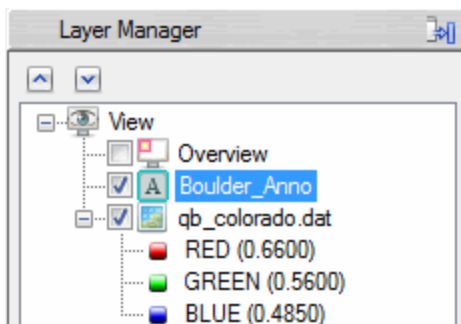
### Creating an Annotation Layer

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In the steps below, you will create one annotation layer. Annotation layers and vector layers are different in that you can have multiple annotation item types within an annotation layer. A single annotation layer may contain a combination of text,

polygon, symbol, and other annotation items.

1. From the menu bar, select **File > New > Annotation Layer**. The Create New Annotation Layer dialog appears.
2. Enter **Boulder\_Anno** as the Layer Name.
3. Select **qb\_colorado.dat** as the source file that defines the new layer's extents and map projection.
4. Click **OK**. ENVI adds the new annotation layer to the Layer Manager.

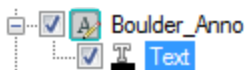


## Adding and Saving Annotation Items


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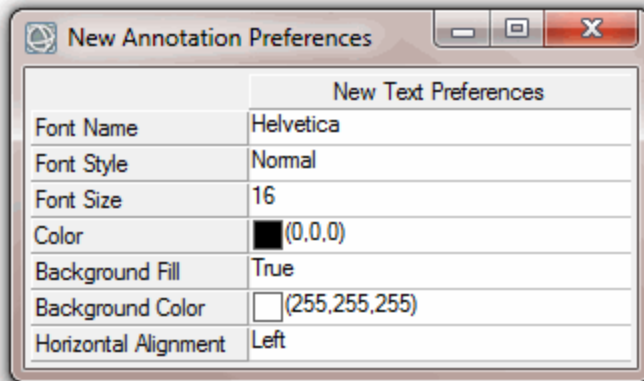
In the steps below, you will add several types of annotation items. When you created the annotation layer, the **Text Annotation** tool was automatically enabled.

1. In the Image window view, find a park area in the scene to label, and click in it. The cursor turns into a vertical line, ready for you to enter text.
2. Type **Central Park** and press **Enter**. The annotation item is added to the Layer Manager under the annotation layer tree.



Next you will change the preferences for subsequent annotations that you add.

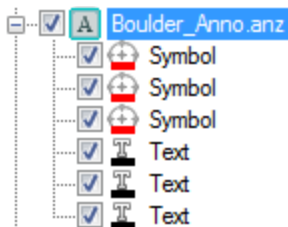
3. Use the **Pan** tool  to find a different park in the scene.
4. Click the **Annotations** drop-down on the toolbar and select **Text Annotation**.
5. Click inside the park to mark where the annotation will go, then right-click and select **Preferences**. The New Annotation Preferences dialog appears.



6. Change the **Font Name** to **Times New Roman** and the **Font Size** to **14**, then close the dialog.
7. Using the new preference settings, click in the image and label two more items as text annotations.
8. Save the annotation layer before you continue. Right-click on `Boulder_Anno` in the Layer Manager and select **Save As**. The Save As dialog appears with `Boulder_Anno` in the **File name** field.
9. Click **Save**.

Next, you will add symbol annotations to the scene.

1. Click the **Annotations** drop-down on the toolbar and select **Symbol Annotation**.
2. In the Image window view, click in several locations where you want to add a symbol. The annotation items are added to the Layer Manager under the annotation layer tree.



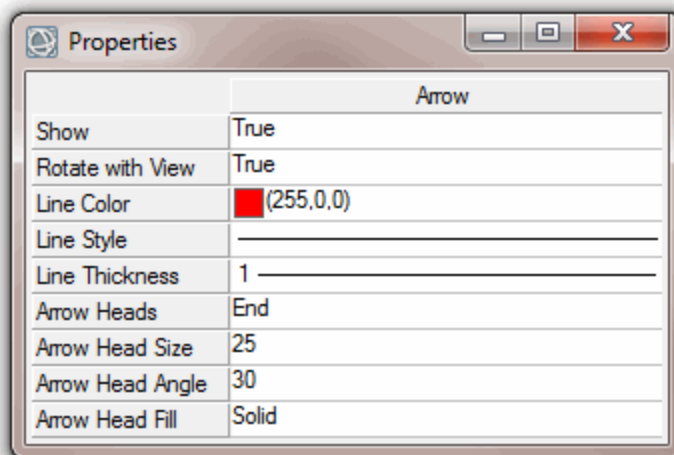
3. With the annotation you just added still selected, click and drag it to a new

location.

4. Save the layer. Right-click in the Image window and select **Save**.

Now add some arrow annotations.

1. Click the **Annotations** drop-down on the toolbar and select **Arrow Annotation**.
2. In the Image window, add two arrows by clicking and dragging the cursor. The annotation items are added to the Layer Manager under the annotation layer tree.
3. Change the appearance of the last arrow only. With the last arrow item still selected, right click and select **Properties**. The Properties dialog appears.



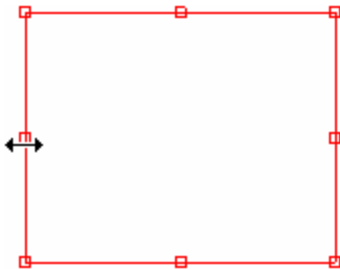
4. Change the **Line Color** to yellow, the **Line Thickness** to 2, and the **Arrow Head Size** to 15. Press **Enter** to accept the change to the arrow head size, then close the dialog.
5. Save the layer. Right-click in the Image window and select **Save**.

Next, add rectangles and resize them.

1. Click the **Annotations** drop-down on the toolbar and select **Rectangle Annotation**.
2. Earlier, you learned how to change annotation preferences by right-clicking inside the Image window view and selecting **Preferences**. Another way to


change annotation preferences is through the Preferences dialog. From the menu bar, select **File > Preferences**. The Preferences dialog appears.

3. In the tree view, select **Polygon** under the Annotation folder.
4. Set the **Fill Interior** to `solid`, then close the dialog.
5. In the Image window, add two new rectangles. The annotation items are added to the Layer Manager under the annotation layer tree.
6. Resize any of the rectangles you drew by clicking and dragging on the selection handles.



7. Save the layer. Right-click in the Image window and select **Save**.

In the final steps for annotations, you will rotate the image and the annotation items.

1. Click the **Rotate** button , then click and drag the cursor in a clockwise or counter-clockwise direction to rotate the image. The **Rotate To** drop-down list on the toolbar interactively reports the current degree of rotation.
2. By default, polygon, polyline, rectangle, ellipse, and arrow annotations rotate with the underlying image. Text, picture, and symbol items do not rotate with the image.



3. To change this setting, right-click on the text annotation item in the Layer Manger and select **Properties**. The Properties dialog appears. Change the **Rotate with View** value as needed for any annotation type. The following image shows an example of changing the **Rotate With View** property to **True** for a text annotation item.



4. Save the layer. Select **File > Save**.
5. Remove the layer from the Image window. Right-click on `Boulder_Anno` in the Layer Manager and select **Remove**.
6. In the **Rotate To** drop-down list, select 0 degrees.

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