

# Workspace

**AKVIS SmartMask** is a plug-in to a photo editor.

To call **AKVIS SmartMask plugin**, select the command Filter -> AKVIS -> SmartMask in **Adobe Photoshop** ; in **Corel (Jasc) Paint Shop Pro** it will be the menu item Effects -> Plugins -> AKVIS -> SmartMask; in **Corel PHOTO-PAINT** call the command Effects -> AKVIS -> SmartMask.

**Attention!** Before you call the plug-in you must copy the image to a separate layer (Duplicate layer).

The workspace of **AKVIS SmartMask** looks like that: (Fig. 1).

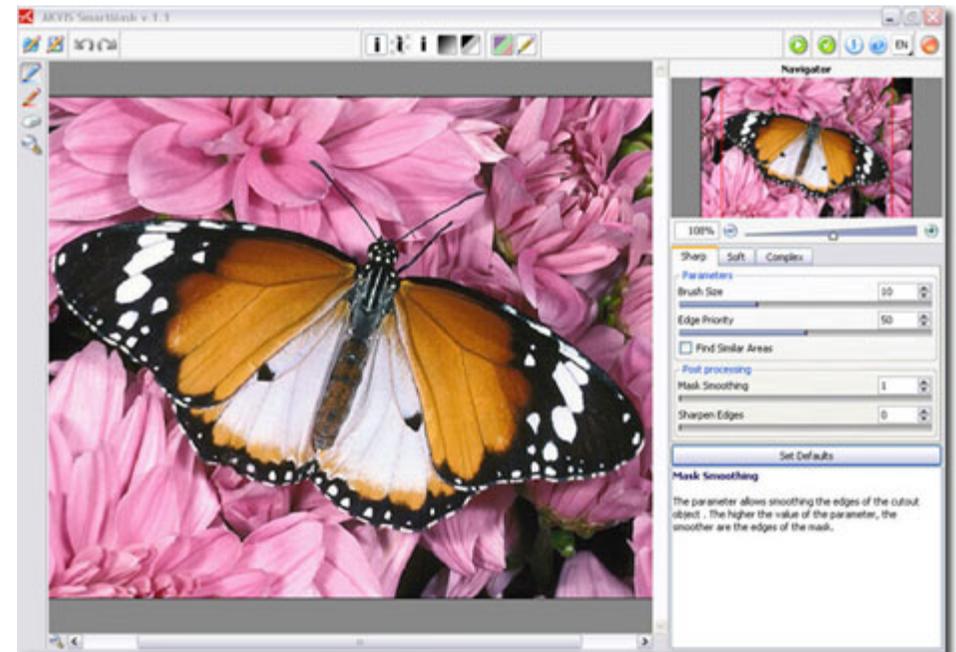


Fig. 1.

### Workspace Elements:

In the upper part of the window there is a **Control Panel** with the following buttons:

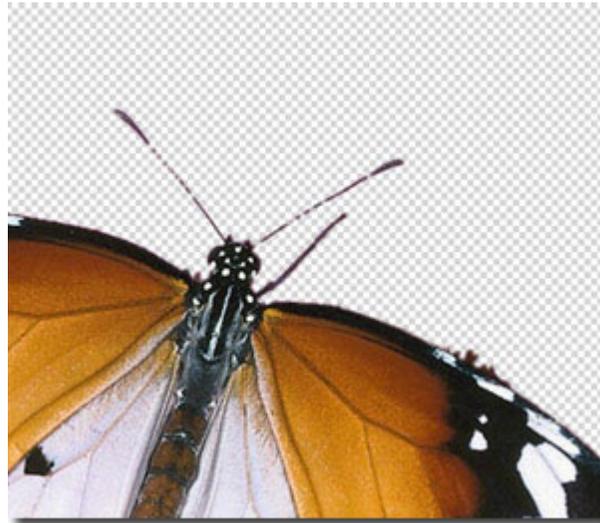
- The button  opens files with the **.Smask** extension. This file type contains information about the saved mask - the drawn strokes, color areas, the settings used.
- The button  saves the resulting mask and all its settings in a separate file with the **.Smask** extension.
- The button **Undo**  cancels the last operation. It is possible to cancel several operations in a row. The hotkey for the command is **Ctrl+Z** (**Command+Z** on Macintosh).
- The button **Redo**  returns the last cancelled operation. It is possible to return several operations in a row. The hotkey for the command is **Ctrl+Y** (**Command+Y** on Macintosh).

- **View Modes:**

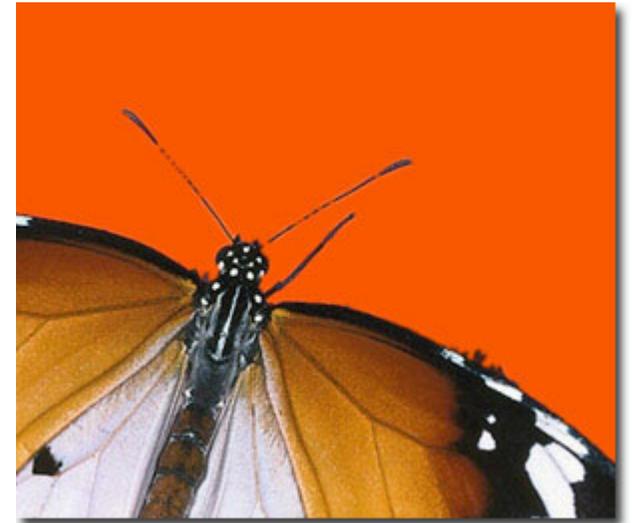
- The view mode  shows the image in its original state. In this way you can compare the result with the original image. (Fig. 2).
- The view mode  shows the result on a transparent background. It is the way you will see the cutout object in the photo editor. (Fig. 3).
- The view mode  shows the cut object on a color background. By default the background is orange, but you can change the color at any time. For this purpose, click on the color plate that appears when you hover with the mouse over the button, and select a color from the **Color Selection Dialog**. (Fig. 4).
- The view mode  shows all pixels with Opacity 100% as black points. White points are the pixels with Opacity 0%. The pixels having Opacity between 0% and 100% are shown as shades of gray. The darker the gray shade, the higher is the transparency of this point. (Fig. 5).
- The view mode  shows all pixels with Opacity = 100% as black points. White points are the pixels with Opacity = 0%. Gray points are all other pixels (0% < Opacity < 100%). This mode is good for finding areas that seem to be deleted, but they are not. (Fig. 6).



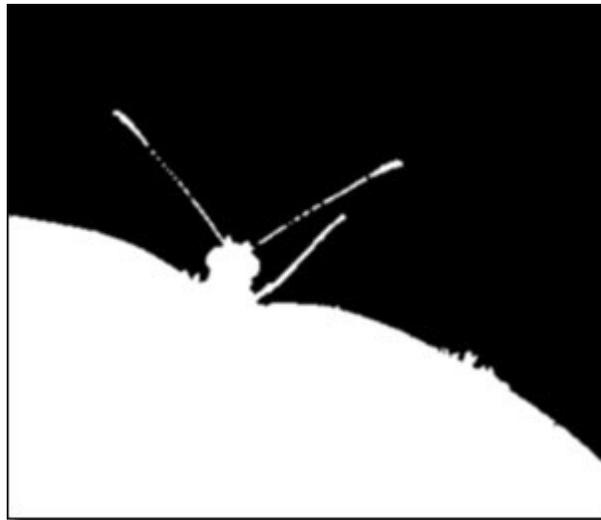
*Fig. 2. Original image*



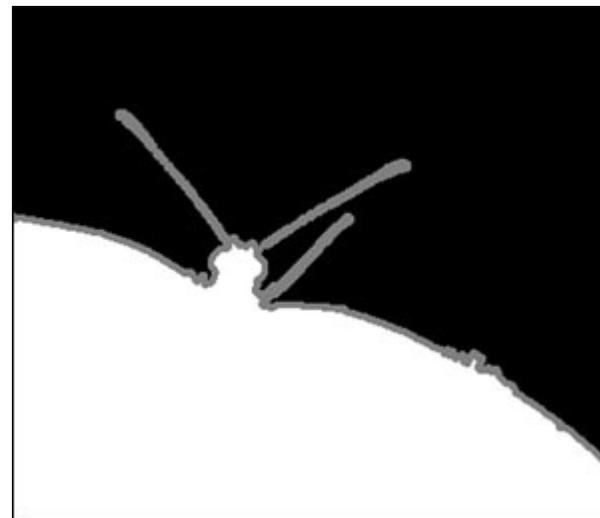
*Fig. 3. On transparent background*



*Fig. 4. Image on a color background*



*Fig. 5. Mask*



*Fig.6. Find unselected areas*

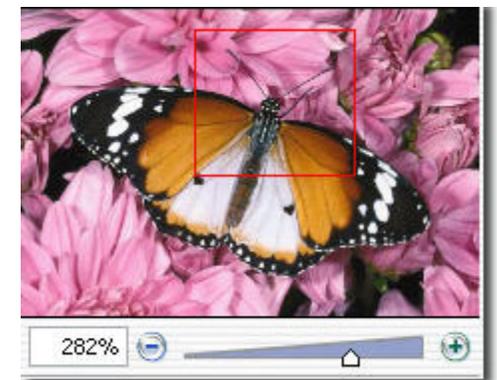
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The image is shown in the **Image Window** according to the chosen view mode.

- The button  turns on/off the drawn strokes.
- The button  turns on/off the defined color areas, as well as adjusts their opacity. Use the pop-up control to adjust the Opacity of the color areas.
- The button  starts image processing.
- The button  applies the result, closes **AKVIS SmartMask's** window and the selected object appears in the workspace of your photo editor.
- The button  calls information about the program.
- The button  calls help files to the program.
- The button  allows selecting the interface language. To change the interface language click on  with the left mouse button, then choose the language from the drop-down menu.
- The button  allows closing the plug-in's window without applying the result.

Navigate and scale the image using the **Navigator Window**. The red frame shows the part of the image that is now visible in the **Image Window**.



## Workspace

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Drag the red frame to view the required part of the image in the Image Window. To move the red frame, put the cursor inside the frame, press the left mouse button, and keeping it pressed, drag the frame.

Besides, you can scroll the image in the **Image Window** by pressing the space bar on the keyboard and by dragging the image with the left mouse button.

Use the buttons  and , as well as the slider to scale the image in the **Image Window**. By clicking on  or by moving the slider to the right, you scale up the image; by clicking on  or by moving the slider to the left, you scale down the image in the Image Window.

It is also possible to enter a new scale coefficient into the appropriate field and press the button **Enter** (**Return** on Macintosh).

Besides, to scale the image you can use hot-keys: **+** and **CTRL++** (**Command++** on Macintosh) to scale up the image, **-** and **CTRL+-** (**Command+-** on Macintosh) to scale down the image.

Under the **Navigator** there is a **Settings Panel** with three tabs: **Sharp**, **Soft** and **Complex**. Every tab contains the settings for the corresponding mode. To select a tool on the **Toolbar** on the left from the **Image Window**, click on the corresponding icon with the left mouse button.

Below the **Settings Panel** there is a **Hint** field: first time you launch the program it shows a short description of **AKVIS SmartMask**; as you work with the program it shows hints to the parameters of the chosen tool or the chosen mode.

## Working with the plugin

Follow this instruction to cut out an object using **SmartMask**:

1. Open an image in your photo editor.
2. Copy the image to a new layer (Duplicate Layer).
3. Call **AKVIS SmartMask plugin**. For this purpose select the command Filter > AKVIS > SmartMask in **Adobe Photoshop** ; in **Corel (Jasc) Paint Shop Pro** it will be the menu item Effects > Plugins -> AKVIS > SmartMask; in **Corel PHOTO-PAINT** call the command Effects > AKVIS > SmartMask. The plugin will open with the image loaded into the workspace. (Fig.1).

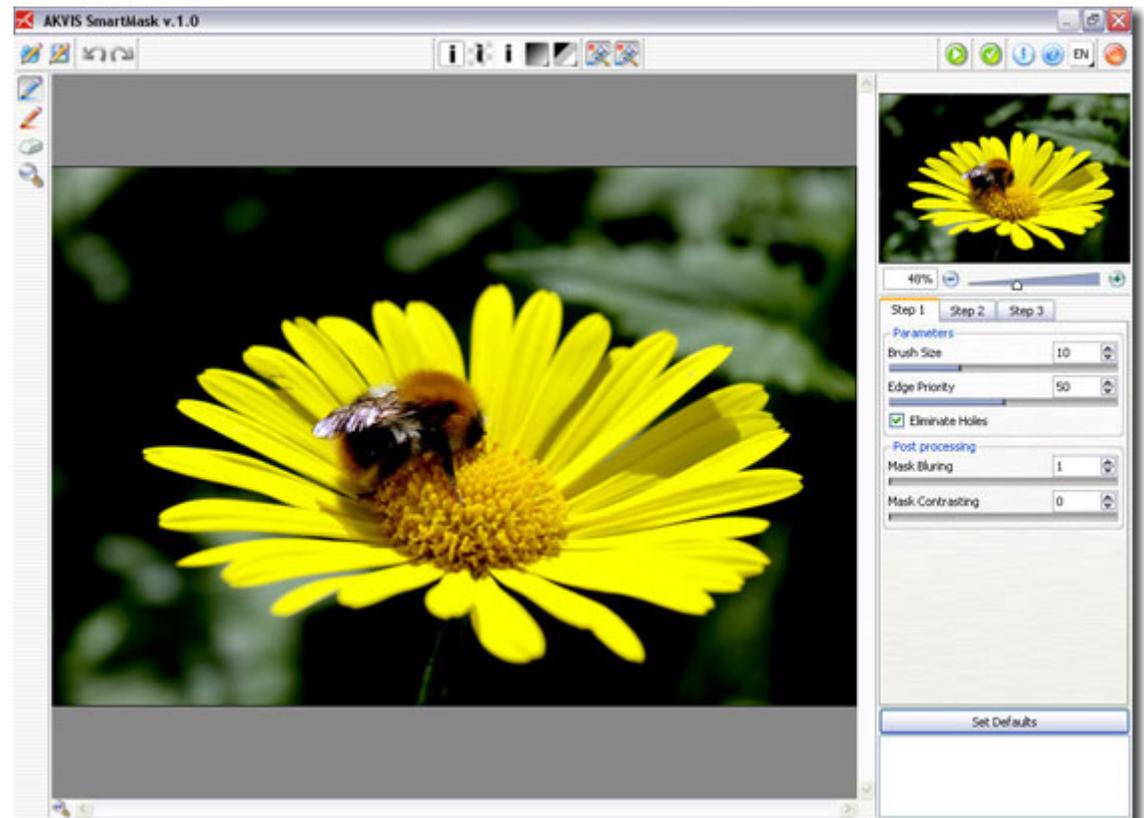


Fig.1.

## Working with the plugin

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4. Depending on the type of the object's edges, you can choose between three processing modes (**Sharp**, **Soft** and **Complex**) by clicking on the corresponding tab in the **Settings** panel. By default the plugin uses the **Sharp mode**.
- **Sharp mode.** This mode suits for images with a good contrast level and for objects with sharp edges (buildings, clothes, machines...).

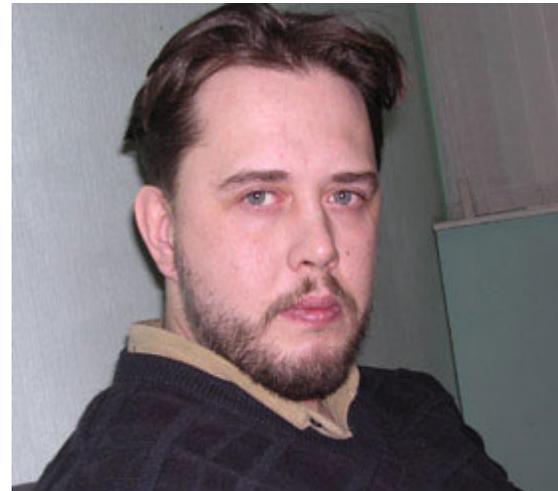


*Original image*



**Sharp mode**

- **Soft mode.** This mode is good for selecting objects with not clearly defined edges (hair, fluff, fur...).

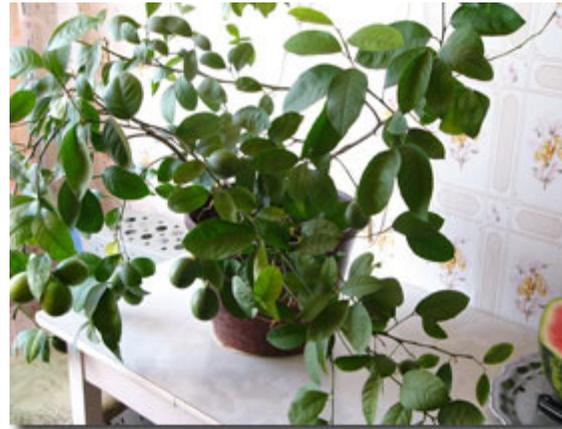


*Original image*



**Soft mode**

- **Complex mode.** This mode is especially good for selecting complex objects - transparent or glass objects, objects that have the same color range as the background (trees, dishware, soap bubble...).



*Original image*



**Complex mode**

**Hint:** For some images it is enough to use only one mode, for others you may need to use all three modes.

**Attention!** You can start working in any of these three modes, but to achieve a good result it is advisable to work consequently (for example, if you start working in the **Complex** mode and then try to switch to one of the preceding tabs, the changes will be cancelled and the image will be processed with the settings of the current tab).

5. Cut out the required object in accordance with the instructions for the chosen mode.
6. Before you apply the result and close the plugin, you can save the mask (the drawn strokes, color areas, and the settings) into a separate file. For this purpose, just click on . In the future you will be able to load the mask from the file (with the button ) and edit it.
7. Click on  to apply the result and close the plugin. The selected object will appear in the workspace of your photo editor.

## Hot keys

Ctrl+Z - this combination cancels the last operation;

Ctrl+Y - this combination returns the last cancelled operation;

V - this combination switches between the current and previous View mode;

+ or Ctrl++ (Cmd++ on Macintosh) - increases the scale;

- or Ctrl+- (Cmd+- on Macintosh)- reduces the scale;

Ctrl+Enter (Cmd+Return on Macintosh) - this combination starts image processing;

### Tools:

B - Pencils and brushes (draw the strokes in the **Sharp** and **Soft** modes and **Magic brush** in the **Complex** mode)

E - Eraser (all modes);

Z - Zoom (all modes);

G - Bucket tool (in the **Soft** mode);

I - Eyedropper (in the **Complex** mode);

Y - Restore brush (in the **Complex** mode);

R - Blur brush (in the **Complex** mode).

## Working with Program: Sharp Mode

The **Sharp** mode suits for images with a good contrast level and for objects with sharp edges (buildings, clothes, machines...). (Fig. 1).

To cut out an object in the **Sharp** mode:

1. Use the following tools to define the areas that must be deleted and the areas that must be kept. (Fig. 2).

- **Keep Area Pencil**  . Use the blue pencil to outline the areas that should be kept.
- **Drop Area Pencil**  . Use the red pencil to outline the parts that should be deleted.  
Use the hot-key B on the keyboard to activate these tools and to switch between them.
- **Eraser**  . Use the tool to erase drawn strokes. Use the hot-key E to activate this tool from the keyboard.
- **Zoom**  ). Use this tool to scale the image. A left-click with the mouse increases the scale, a right-click with the mouse reduces the scale. If you move the cursor keeping the left button of the mouse pressed, a "running ants" frame appears. The fragment in the frame will be scaled to the size of the **Image Window**. Use the hot-key Z to activate this tool from the keyboard.

The **Brush Size** of the Pencils and the Eraser tool can be adjusted on the **Settings Panel**.



Fig.1.



Fig.2.

2. Start processing the image by clicking on . The image will be processed with the default settings. The program will take into consideration the drawn outlines and generate **three zone types**: the areas that will be **deleted** are marked **red** (the points in this area have Transparency = 100%), the areas that will be **kept** are marked **blue** – (the points in his area have Transparency = 0%). Red and blue areas will have a green transition border. The points in the **green** border have different Transparency values (between 0 and 100%), which accounts for the smooth edges of the selected (cutout) object. (Fig. 3).

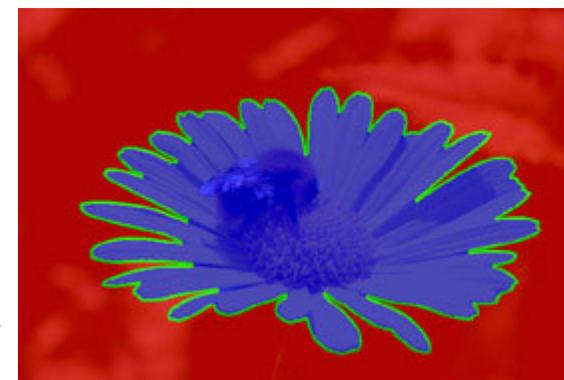


Fig.3.

3. If you are not satisfied with the result (Fig. 4), edit the strokes and adjust the parameters in the **Settings Panel**:
- **Edge Priority**. This parameter defines the way the points between the red and blue outlines are treated (undefined areas) and, thus, specifies the edges of the cut-out object. If you increase the value of the parameter, the edges of the cut-out object are defined as the border between the objects marked with different colors. If you reduce the value, the program will give priority to the color range of the undefined areas. The program will compare the colors of these points with those in the red/blue zones and color them accordingly to define the border. By default the value is set to 50 and the program considers both principles equally.
  - **Find Similar Areas**. By default the check-box is disabled. In this case the points of the image are colored in accordance with the strokes drawn in the nearby areas. When the check-box is enabled, the program will compare the color of the undefined points with the color range of the points in the red and blue zones (on the whole image) and mark them accordingly. It is helpful when you need to cut out inscriptions or a lattice.
  - **Mask Smoothing**. This parameter allows smoothing the edges of the cutout object. The higher the value of the parameter, the smoother are the edges of the object.
  - **Sharpen Edges**. This parameter sharpens the edges of the cutout image. The higher the value of the parameter, the sharper are the edges of the object.

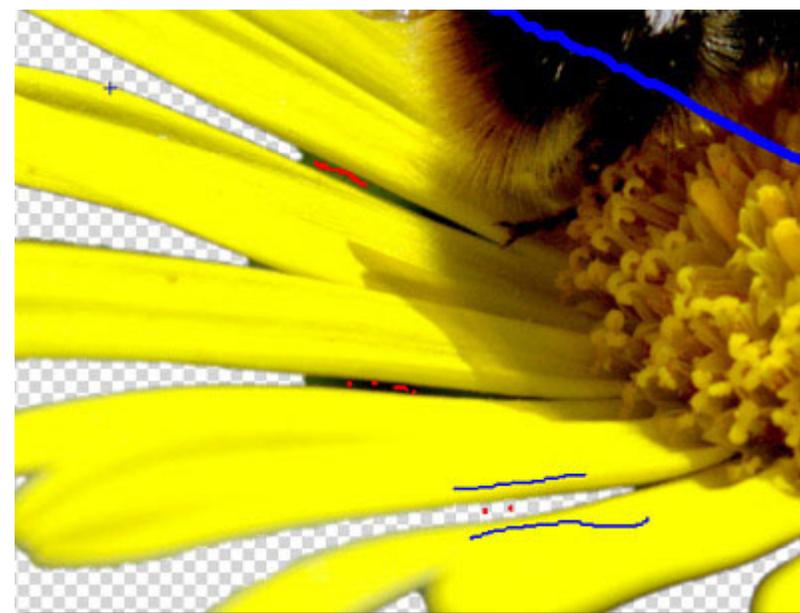


Fig.4.

4. Click on  again to start processing the image (Fig. 5).
5. If you are satisfied with the edges of the cutout object, click on  to apply the result and close the plugin. The cutout image will appear in the workspace of your photo editor.

If the edges are not clearly defined and the result is not achieved, edit the mask in other modes (**Soft** and **Complex** tabs).



*Fig.5.*

## Working with Program: Soft Mode

This mode is good for selecting objects with not clearly defined edges (hair, fluff, fur...). (Fig. 1).

1. First use the **Sharp** mode to define **color zones**: (Fig. 2):

**Blue** zones are the parts of the image that must be **kept**. The points in his area have Transparency = 0%.

**Red** zones are the parts of the image that will be **deleted**. The points in this area have Transparency = 100%.

**Green** zones are a "transition border" between the kept and cutout areas. The points in these zones have different Transparency values (between 0 and 100%).



*Fig.1. Original photo*



*Fig.2.*

2. Use the following tools to edit the color zones :

To edit the blue zones, use  and , for red zones -  and , for green zones -  and .

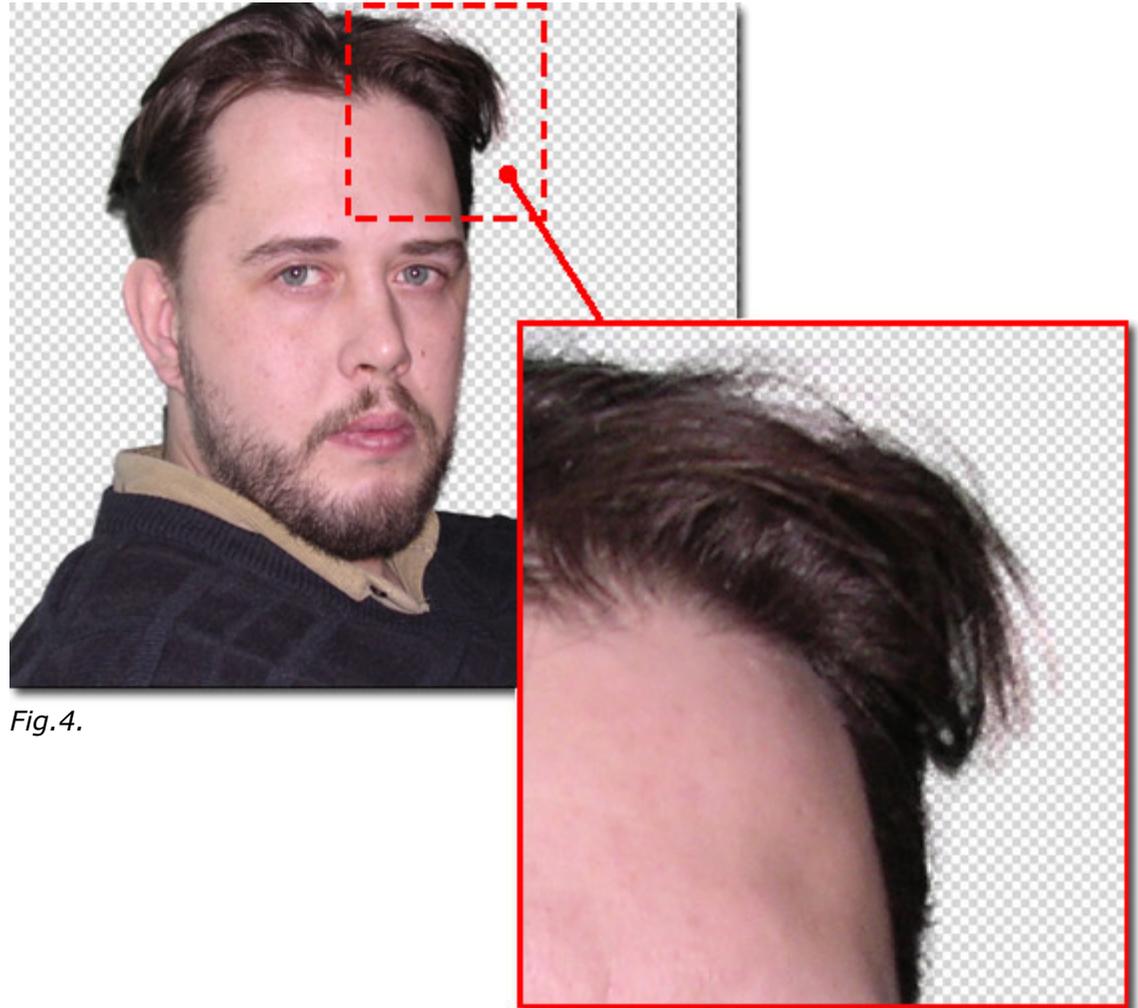
Adjust the stroke width by changing the value of the **Brush Size** parameter on the **Settings** panel.

Use the **Green Zone Width** parameter on the **Settings** panel to change the size of the green zones. The higher the value of the parameter, the wider is the green transition border. This parameter influences only on the automatically generated green zones and changes their size on their full length. To edit the green zones more precisely, use the corresponding pencils from the **Toolbar**. (Fig. 3).



*Fig.3.*

3. If needed, adjust the **Sensitivity** parameter on the **Settings** panel. This parameter influences on the amount of details revealed in difficult areas (Fig. 3). The higher the value of the parameter, the more semitransparent details are visible.
4. Start image processing by clicking on  .



*Fig.4.*

5. If you are satisfied with the result obtained in the **Soft** mode, click on  to apply the changes and return to the photo editor. If the result needs some improvement, go to the **Complex** tab; in this mode you can touch up the selection.



*Fig.5. Result*

**Hint:** The result of the **Soft** mode often leaves much to be desired; it is rather a preliminary mode before manual processing in the **Complex** mode. Despite these drawbacks, the **Soft** mode saves you much time and minimizes manual work.

## Working with Program: Complex Mode

The **Complex** mode is especially good for selecting complex objects - transparent or glass objects, objects that have the same color range as the background (trees, dishware, soap bubble...) (Fig. 1).

**Attention!** It's a manual mode, therefore the button Run  is disabled.

1. Use the check-box **Only in green zone** to define the operation mode. When the check-box is enabled, only the areas within the earlier drawn green zone will be edited. When the check-box is disabled, the changes will influence on all points of the image.
2. Edit the image manually using the following tools (Fig. 2):

- **Drop Colors** (). The colors chosen with this tool are listed in the **Drop Colors** field. To select a color, click on the corresponding image point with the left-button of the mouse.
- **Keep Colors** (). The colors chosen with this eyedropper are listed in the **Keep Colors** field. To select a color, click on the corresponding image point with the left-button of the mouse.

Use the hot-key **I** on the keyboard to activate these tools and to switch between them.

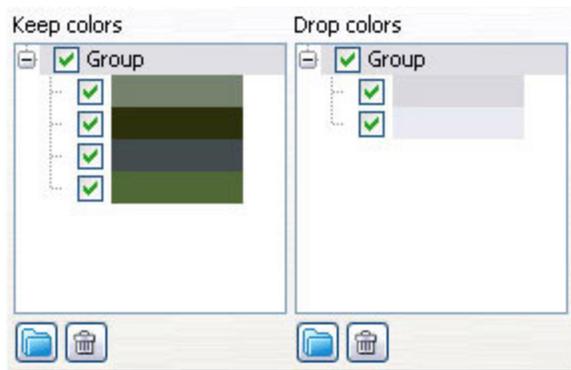


Fig. 2.

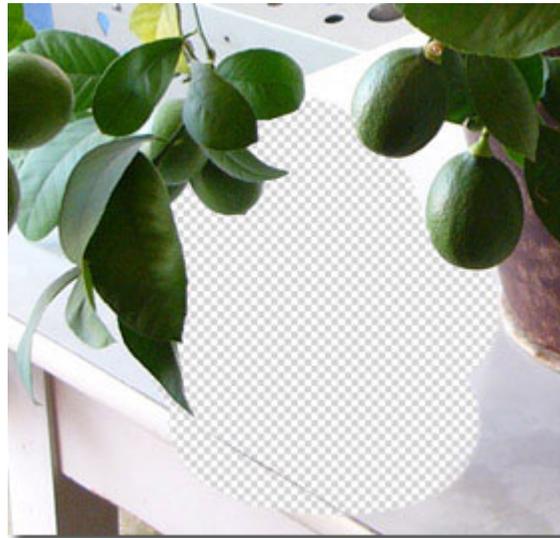


Fig. 1.

The **Drop Colors** and **Keep Colors** fields are found on the **Settings** panel. They contain color sets chosen by the user. Add colors using the above-mentioned tools. It is possible to group colors. To create a new group, click on the button . To delete a color from the list, select this color with a left-click of the mouse and press the button . The green check mark defines the colors/groups of colors that will be taken into consideration when calculating the result.

3. Process the image using the **Magic Brush** tool ().

The **Magic Brush** keeps the points having the colors listed in the **Keep Colors** field and deletes the points having the colors listed in the **Drop Colors** field. Other colors are kept or deleted according to their closeness to one or another color set. (Fig. 4).



*Fig.3. on transparent background*



*Fig.4. on color background*

**Magic Brush** has the following parameters:

There are three check-boxes that define the operation mode of **Magic Brush**:

**Calculate.** When the check-box is enabled, the brush **removes** the points having the same colors as those listed in the **Drop Colors** field and colors close to them, and it **restores** the points having the same colors as those listed in the **Keep Colors** field and colors close to them.

**Repair.** In this mode the Magic Brush restores only the points having the same colors as listed in the **Keep Colors** field.

**Clean.** In this mode the Magic Brush deletes only the points having the same colors as listed in the **Drop Colors** field.



*Before application of the tool*



*Check-box **Calculate** enabled*



*Check-box **Repair** enabled*



*Check-box **Clean** enabled*

Parameters that set the zone of effect application:

**Brush.** This parameter sets the inner diameter of the brush, that is the zone where the chosen effect is applied to the full.

**Edge.** This parameter sets the outer diameter of the brush, that is the zone where the chosen effect is applied partially.

Check-box **Foreground Recovery.** In most cases the objects on a photo are not evenly lighted, therefore the cutout object can have shades and colors reflected from the nearby objects. Such color shades can be absolutely inappropriate on a new background: for example, hair having a blue cast from the sky or a green shade from the trees, shadows of objects on the clothes... The check-box **Foreground Recovery** helps to get rid of the unwanted color shades. Just select a color with a click on the color plate (use the **Standard Color Selection Dialog** or use the eyedropper tool to pick a color from the image); or set Opacity (with a right click) - in this way you select a color from the **Keep Colors** list. Process the image with the **Magic Brush** - the colors will get the chosen shade. The **Strength** parameter defines the influence of the applied color. The higher the value of the parameter, the more the colors are subject to change.



*Check-box **Foreground Recovery** is disabled*



*Check-box **Foreground Recovery** is enabled  
green color selected*

**Sensitivity** parameters:

**Brush.** The parameter influences on the amount of details recovered in difficult zones. The higher the value of the parameter, the more semitransparent details are visible.

Sensitivity to **Keep Colors.** The higher the value of the parameter, the wider is the range of the colors kept on the image.

Sensitivity to **Drop Colors.** The higher the value of the parameter, the wider is the range of the deleted colors.

- Repeat steps 2 and 3 changing color sets till the whole image is processed.
- Touch up the result using the following tools :

- **Restore Brush** . This tool restores the area to its original state. Use the hot-key **Y** to activate this tool from the keyboard.

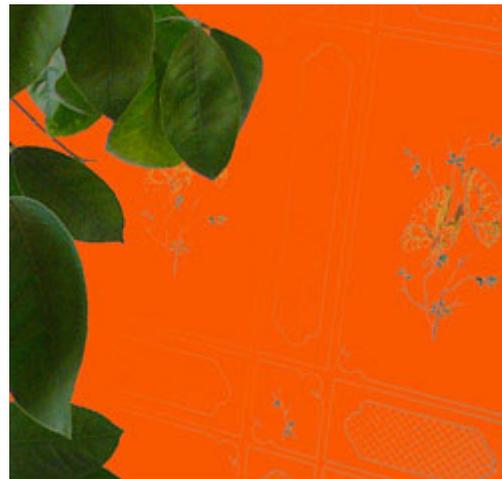


*Before application of the tool*



*After application of the tool*

- **Eraser** . This tool erases the areas to which it is applied. Use the hot-key **E** to activate this tool from the keyboard.



*Before application of the tool*



*After application of the tool*

- **Blur** . This tool creates a blur effect by reducing the color contrast between the adjacent pixels. The tool is characterized by the **Blurring** parameter. The higher the value of the parameter, the stronger is the effect. At Blurring= 1 there is no blurring at all. Use the hot-key **R** to activate this tool from the keyboard.

For all these three tools you can adjust the **Brush** and **Edge** parameters.

6. Click on  to apply the changes and quit the plugin.



*Result*