

# { gimp }

LIQUID RESCALE TOOL

INTERACTION DESIGN FOR THE REAL  
WORLD - PETER SIKKING

FACHHOCHSCHULE VORARLBERG  
IMB10

ALEXANDRA GENEWEIN  
KATRIN SEIDEL  
NICOLAI PRITZL

## introduction...

GIMP is a free software for high end photo manipulation.

The project's goal was to improve GIMP's plugin „liquid rescale“. The following steps show how a new interface is created regarding the product visions.

By integrating the plugin in the instruments box, work can be done faster and more interactive. Finally the conclusion has to be integrated in the workflow of GIMP.

## functionality...

The plugin „liquid rescale“ enables to resize a picture not only by erasing or inserting pixels in parts of the image.

### ELEMENT MASKS

- new image size | height and width
- preservation mask | parameter: strength
- discard mask | parameter: strength, auto size

### OUTPUT

- output on a new layer
- adapt image to the canvas
- resize auxiliary layers
- show seams
- scale back to the original size
  - mode: fluently rescaling, standard rescaling, width only, height only

### EXPANSION

- seams control | max transversal steps
  - overall rigidity | rigidity mask
- operations control | maximum enlargement per step
  - rescale order: horizontal, vertical

## scenarios...

### SCENARIO 1 - STRETCHING AND SHRINKING

If users only want to change the picture's size or proportions, they can stretch and shrink it in height, width as well as in height and width at the same time.

### SCENARIO 2 - PRESERVING OBJEKTS

For Users it might be helpful to preserve certain parts of the picture from stretching or shrinking to get realistic results. Herefore preservation masks can be used.

### SCENARIO 3 - PRECISION

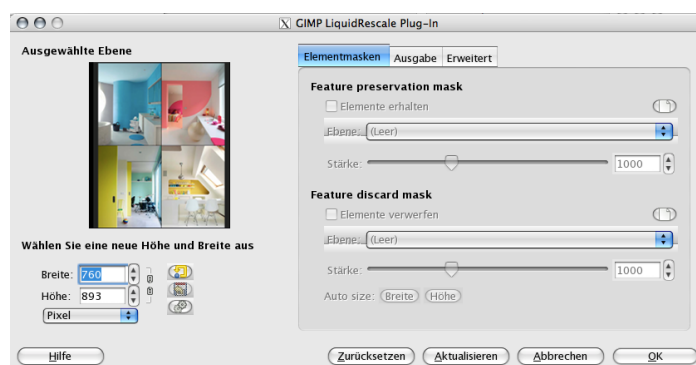
To define the mask's precision various tools in the toolbar can be used.

### SCENARIO 4 - REMOVING OBJECTS

To delete objects in a picture, they can be masked with a discard mask. An auto-size option delivers the right values to have them vanished after shrinking the picture.

### SCENARIO 5 - DOING ART

Creating artistic work can be achieved by mixing different operations and using extreme values.



## brainstorming...

In our period of brainstorming we searched for a solution to transform the liquid rescale plugin into the toolbar. So the defined goal was to make the handling more interactive.

We thought about different solutions, using layers or grids. Also automatically masks came to our mind. But we deleted every unnecessary function and concentrated on the function of working on canvas.



## evaluation...

We did a professional evaluation on gimp's liquid rescale plugin to point out its strengths and weaknesses.

First of all the fact that the functions are arranged in a dialog box doesn't allow the users to work efficient. Switching between the dialog box and the canvas hinders the users workflow. To be able to work productive the users need a clear structured workspace.

In the current version of „liquid rescale“ it's only possible to resize the image by typing an a value. Not before pressing the „OK“ button nothing is changed on the image. A fast interaction with the canvas is not possible.

We also compared the „liquid rescale“ plugin with other programs. We found out that with „liquid rescale“ it's not possible to compare the original picture with the arranged one. For users it's very important to see what is changing and how different settings affect the picture.

The composition of „liquid rescale“ should be maintained because it seems to be logically arranged.

Our focus is on a quick and clear arranged navigation that gives the users the chance to change parameters and see directly the result.

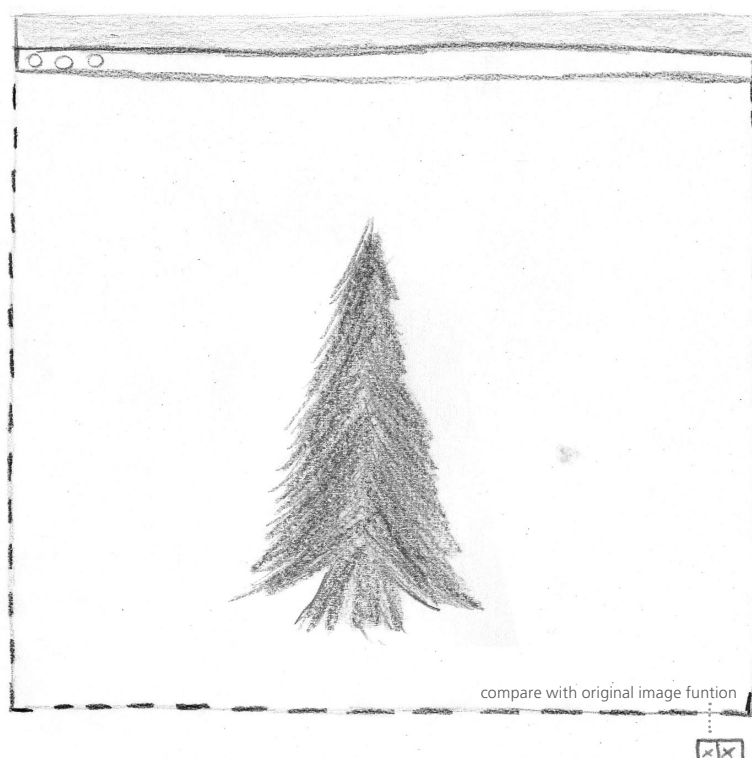
## final design...

### SCALING

Although liquid rescale is transformed into a tool, the dialogues well working functions are kept. Most of them can be found as collapsible menus. The liquid rescale's main task is the scaling itself, so the tool offers the most effective way of scaling a picture like stretching and shrinking with help of the mouse cursor.

When users choose the tool in the instrument box, the liquid rescale function becomes active and the corresponding menu shows up in the option box. A frame appears around the picture, twinkling to attract attention. Now the possibility is given to scale the picture by dragging the frame. If operators drag the selection smaller, the application reacts immediately and shows the scaled result.

To work more precise the ability is still given to enter values in the input fields in the option box, which are called height and width. After users type some parameters inside, the result will be shown in the original image. Certainly a choice of different units is given.

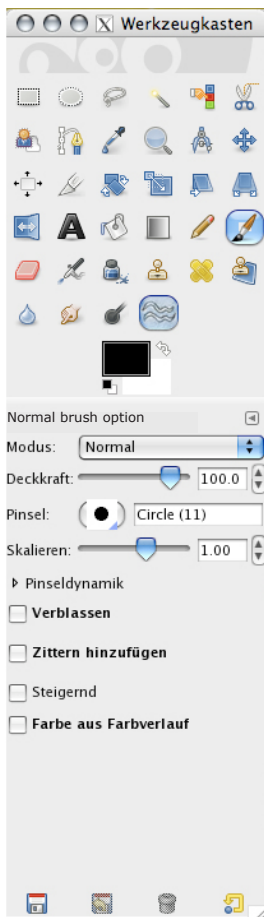


## PRESERVATION MASK

If sections have to be preserved from stretching or shrinking, a preservation mask can be used. Herefore users click on the headline preservation mask of the collapsible menu in the option box and the canvas switches to the mask mode. Now users can paint their mask with the brush tool, but also have the possibility to use every other tool, which is given to create a mask - for example the path tool. For deleting the mask, the eraser tool can be used. A simple click on an arrow (back to liquid rescale) helps to leave the mask-mode and getting back to the liquid rescale tool.

Before being able to work with the mask, a pop-up window appears and asks, if the mask shall be added as a new layer ("safe mask?"). After agreeing or denying, the brush tool is selected automatically and the liquid-rescale tool's option box is replaced by the brush tool's option box.

In the option box the preservation mask's strength can be easily defined with using a slider or a value-box, also the active layer can be chosen. The strength-option can be hidden by clicking the arrow at the collapsible menu.



## DISCARD MASK

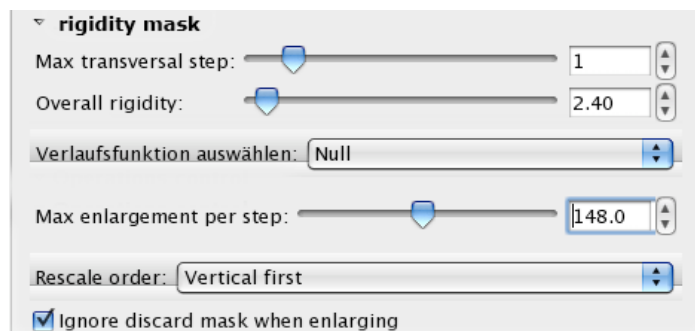
Working with the discard mask works the same way, like working with the preservation mask. The dialogue field features the ability of autosizing values, layerchoice and strength.

If users click at the menu point discard mask they can change the image, after creating a mask, by dragging it in a small size or putting parameters into input fields.

In every function case the operation can be aborted. First option is to switch to the report. Here the users can undo the last steps. Second option is to click on „go back to original“ button, on the bottom of the canvas. Here the original image is saved and can be compared with the current solution. With both opportunities users can go back to the first original version.

## RIGIDITY MASK

To understand, how liquid rescaling works, the tool is able to show the seams, it works with. Sometimes it is helpful for users to know what the tool does, to manipulate operations manually for receiving the results they want. Especially in case of shrinking operations seeing and influencing the seams might be useful. Therefore users find the collapsible menu „rigidity mask“ in the option, in which they can influence the maximum enlargement, the overall rigidity and the maximal enlargement per step.



The screenshot shows a settings panel titled "rigidity mask" with a dropdown arrow on the left. It contains several controls:

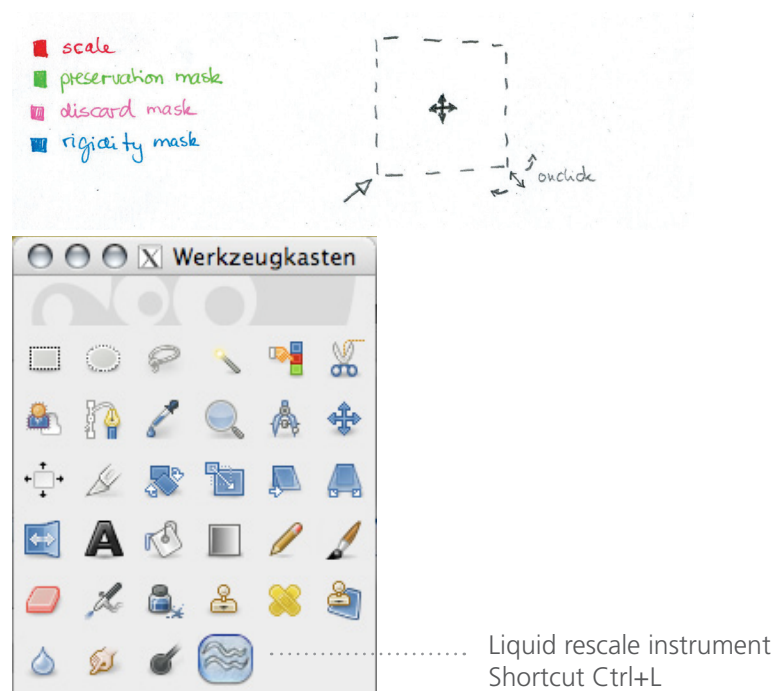
- Max transversal step:** A slider with a blue handle and a numeric input field showing "1".
- Overall rigidity:** A slider with a blue handle and a numeric input field showing "2.40".
- Verlaufsfunction auswählen:** A dropdown menu currently set to "Null".
- Max enlargement per step:** A slider with a blue handle and a numeric input field showing "148.0".
- Rescale order:** A dropdown menu currently set to "Vertical first".
- Ignore discard mask when enlarging:** A checked checkbox.



## OUTPUT

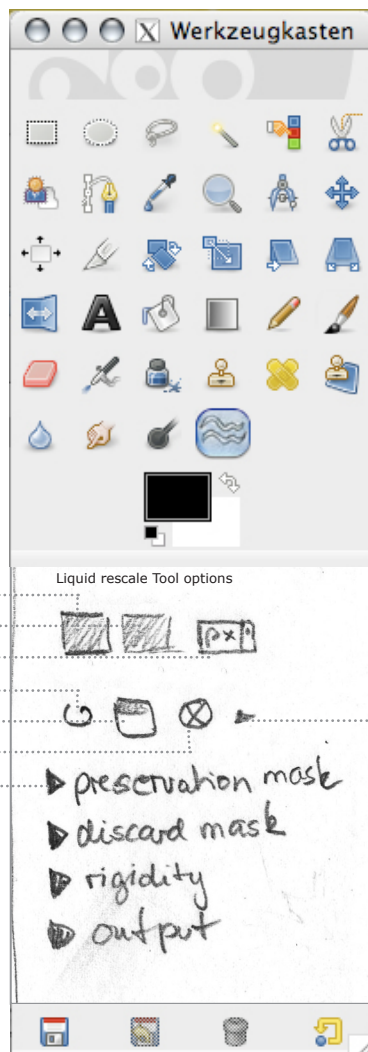
Special output values can be found in the output menu. Here users can define a new layer, choose auxiliary layers and size adjustments by activate checkboxes.

DETAILED LOOK ON THE INTERACTION WITH THE FRAME, MASK COLORS AND INSTRUMENT BOX

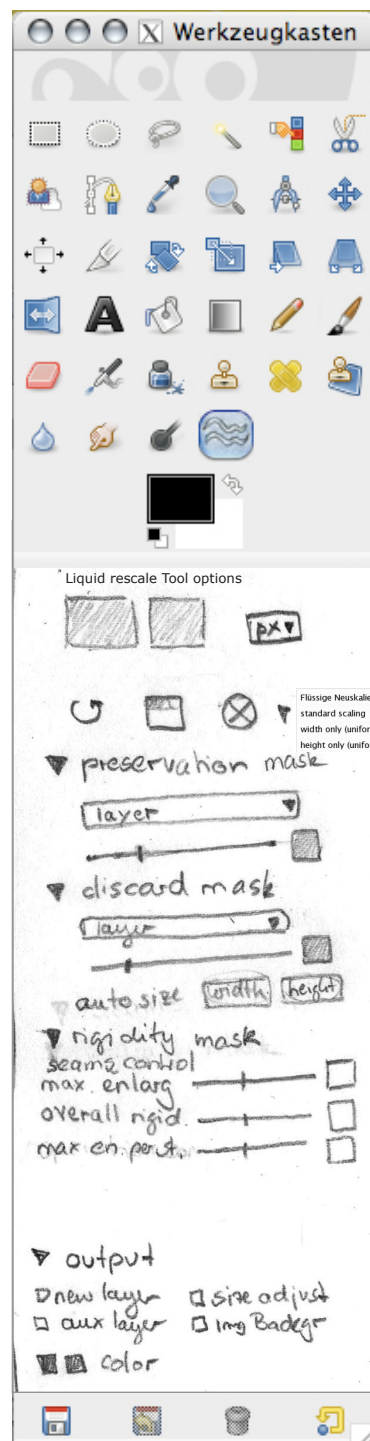


# SMALLEST AND FULLY FOLDED OUT VERSION OF THE OPTION BOX - COLLAPSIBLE MENU

width  
height  
units  
reset  
last value  
original size  
open / close



O.S.  
options



original size  
options