# Diffusion Curves Tutorial

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Drawing

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	Draw a curve in free hand style
	A curve has a different color on each side. Colors of the pen are chosen by clicking on the Left color and Right color buttons.
	A curve has a blur value. Blur of the pen can be chosen before drawing with the spline blur slider.
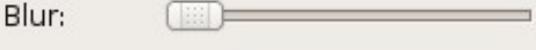
Editing

	Select a curve and modify its geometry.

A curve is a spline with control points (blue) and tangents at each control point (yellow).
Click Left on these points to modify them.
Click Left outside the curve to move it.
Click right on the curve to add or delete control points; or to split the curve.
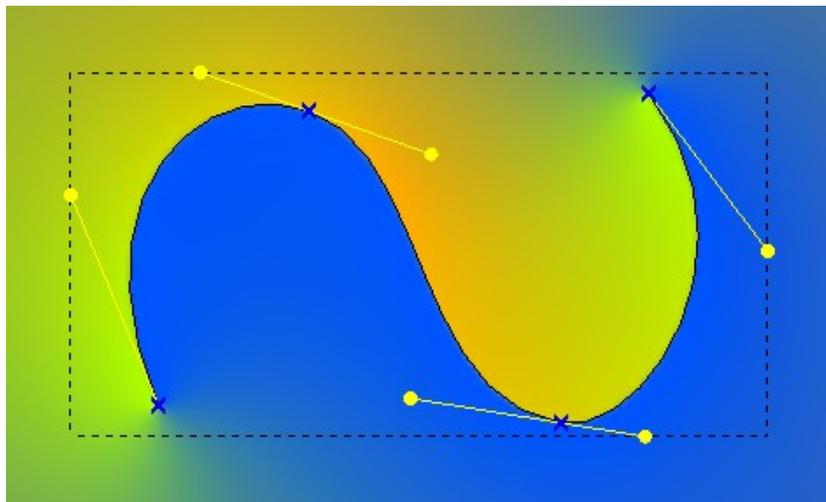
	Select a curve and show its color and blur .

A curve has two colors (colored dots) and a blur (gray dot) values vectorized along itself.
Click Left on these points to modify them.
Click right on the curve to add or delete colors or blur points .
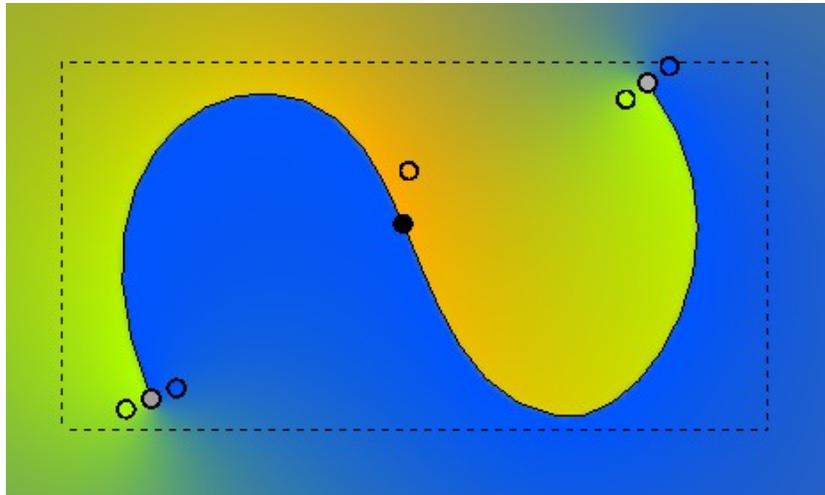
	Switch colors of the selected curve (Left < - > Right)
	Pick a color in the drawing
	Paste the color bucket color on color points

Multi-selection and copy/paste

	Shift click left to select multiple curves . Ctrl click left to scribble (every curve touched by the scribble is selected) .

Delete: delete a spline or a set of splines
Ctrl+C: Copy a spline or a set of splines
Ctrl+V: Paste a spline or a set of splines
Ctrl+D: Copy the mean blur of a spline or a set of splines
Ctrl+F: Paste a blur on a spline or a set of splines

Interface

Lifetime:	Show/hide unimportant lines (only for vectorized photographs).
	Zoom forward.
	Zoom backward.
	Pan .
✓ Show Splines	Toggle splines display.
☐ ActivateBlur	Toggle blur computation to save computation time .
Iteration	Modify the number of iteration to compute the final solution. This Allow to compromise between rapidity and precision.

Global control over multi-selected curves

☉⁺ ☉⁻	Contrast modification
💧 〰️	Shape smoothing or sharpening

Right click on a set of curves: increase or decrease blur globally.

Tracing from a bitmap

Load a bitmap using the File/Load Bitmap menu.

☐ Show Bitmap	Toggle bitmap display.
✎	Draw a curve over the bitmap.
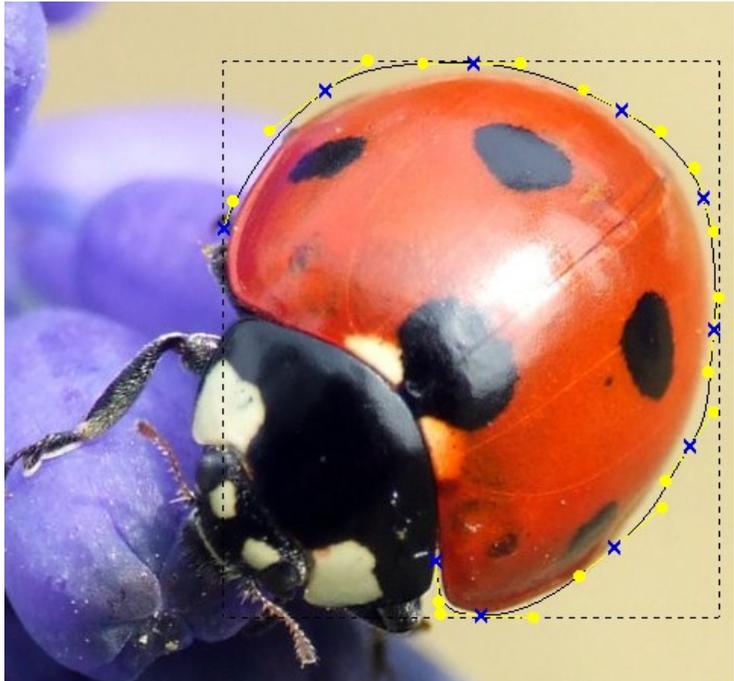
	Snap the curve to the bitmap contours.
	Read colors in the bitmap and transfer to the curve.
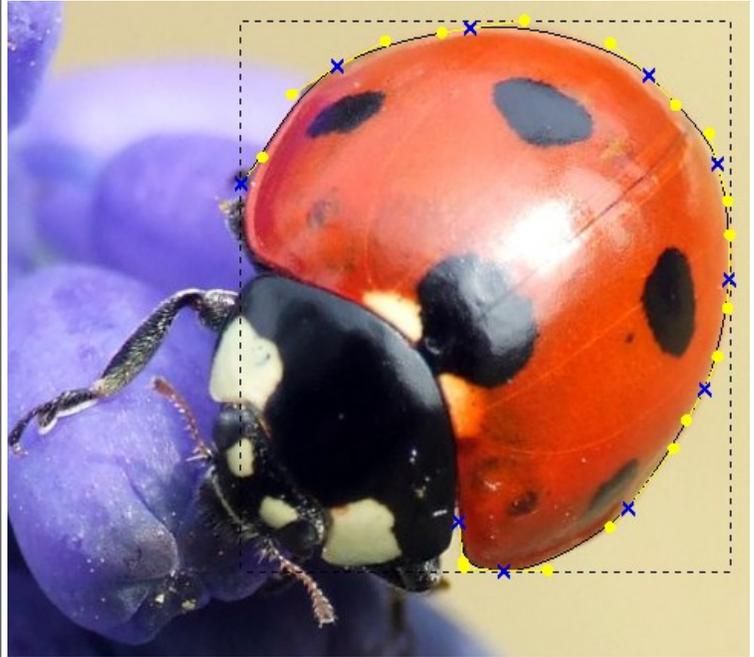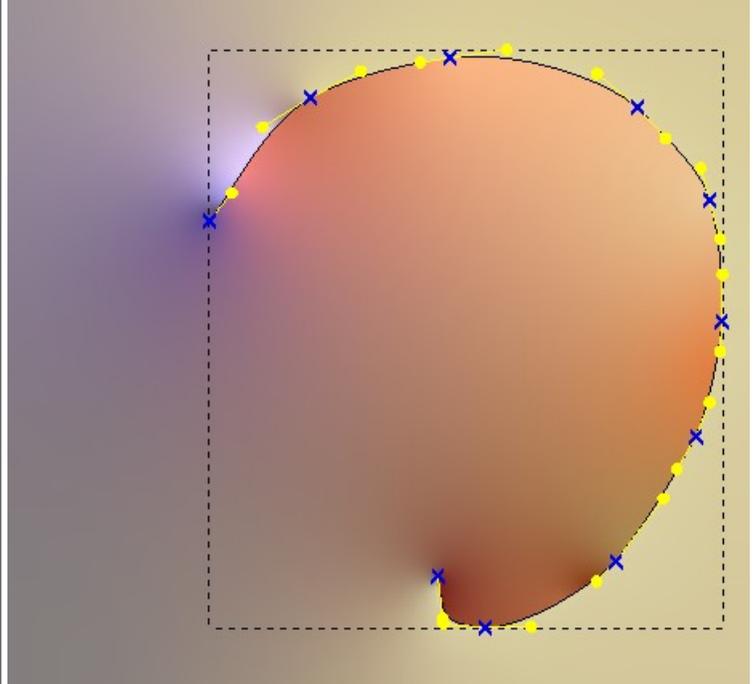
Saving

A diffusion curve drawing can be saved as a .xml file (File/save as xml), or the resulting image can be saved as a .png file (File/save as png). The saved .xml can be reloaded (File/load xml). When several keyframes have been created, an animation can be generated using File/keyframing to load the files: the animation will be saved in the output folder.