EFX Keying/Alpha plugins for After Effects

Here you'll find description of the plugins developed to help select pixels based on many criteria. Also after selection, there are often things you want to do with the new alpha channel, like cleaning up or blurring.
Some of them are real full blown keying plugins, and some just simple little tricks that help you in everyday tasks.

Hope you'll enjoy them
Filip Kaczorek

Installation

Alpha Math

Alpha S'n'P

Alpha select

Alpha streaks

Color select

Color Select HSL

Despill

Despill advanced

Despill brute

Edge Bleed

Edge blur

Keyer

Keyer HSL

Luma select

Spill alpha

Installation.

The plugins are written in PixelBender.

To install:
- find your After Effects plugins directory, ie.:
c:/program files/adobe/adobe after effects cs5/Support Files/plugins

- copy the efx plugins to any subdirectory.

It doesn't matter exactly what subdirectory the plugin files are in, as long as they are within the After Effects' main plugins directory.

In After Effects you'll find the plugins in Effects under **EFX keying/alpha group**.

Caution:
the suite contains some plugins that are also available for free. If you downloaded and installed them before, you might get a conflict of double plugin files.
Just delete the previous free versions - or don't install the ones from the suite.

Alpha Math

Allows you to take an alpha channel of another layer and perform mathematical operations with it and the alpha channel of the current layer.

Input 2 - pick the second layer.

Action blend - blends between the alpha after this effect and the original alpha from before.

Operation - pick an operation to perform:

- **none** - does nothing,
- **replace with B** - replaces the current layer's alpha with the alpha of the second layer,
- **A+B** - adds the alphas together - you'll see opacities of both layers,
- **A*B** - multiplies alphas together - you'll see transparencies of both layers,
- **A-B** - subtract second alpha from the current alpha,
- **B-A** - subtract current alpha from the second alpha,
- **average** - adds the alphas together and divides by 2,
- **clear alpha** - sets all pixels' alpha channel value to 0,
- **fill alpha** - sets all pixels' alpha channel value to 1
- **fill alpha (color)** - same as **fill alpha** but since very often pixels that are completely transparent carry false color data it additionally let's you fill these pixels with a chosen color. You pick the color with the **color** swatch below and with the **threshold** value you set an alpha value below which the color filling is performed.

Threshold - a threshold value for operations that require it.

Color - a color swatch for operations that require a color.

Multiply - multiplies the resulting alpha value by the number set here.

Invert - invert the final alpha.

Mode - output format of the filter:

- **normal alpha** - just a regular result of the operations with all transparencies,
- **full alpha** - the result with all opacities larger than 0 turned into full opacities,
- **luma** - like normal alpha but the result is stored as luminosity data instead of alpha,
- **full luma** - like full alpha but the result is stored as luminosity data instead of alpha.

Alpha S'n'P

BEFORE

AFTER

Removes single pixel noise from the alpha channel (islands or holes). Useful for cleaning up after difference matte. The Alpha S'n'P x5 applies the same effect 5 times.

Similar neighbours - how many similar pixels (opacity wise) around itself can a pixel have to still be removed.

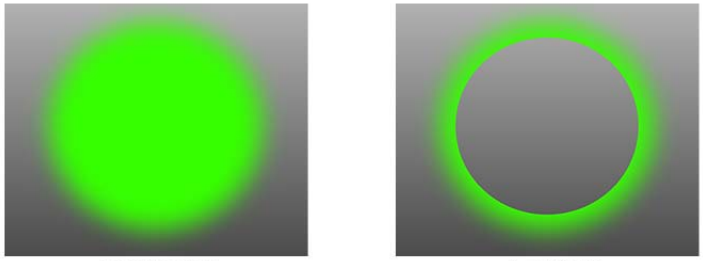
By default (sim. neighb.=0) the pixel will be removed only if it is unique in its surroundings. It has no similar neighbours. This is very strict and so will not remove a lot of noise. You can set how many similar pixels the pixel can touch and still be considered unique, ie. if you have an island of two pixels next to each other - it's obviously something you want to get rid of. But each pixel is a similar neighbour to the other pixel so to remove this two pixel island you have to increase this parameter to 1.
What defines a similar pixel?
It's a pixel whose alpha value differs from the current pixel's alpha by no more than:

Difference threshold - maximum difference in alpha values of two pixels to still be considered similar.

Take original color if alpha lower than - a trust threshold for the color data in a pixel that is being removed - more precisely "filled", since this applies only to holes.

If a hole is a pixel fully transparent (alpha=0) than it does not have color information and it will be recreated from the neighbouring pixels. As soon as the alpha is higher than 0, the pixel has some color information stored as well - so it's better to use it - after all it's the true color of this pixel. Unfortunately, very often, when the alpha value of a pixel is very low, the color data is false - it looks OK when very transparent, but looks strange when turned fully opaque.
If a pixel's alpha is greater than this value, then the pixel's color data will be used to fill the whole. If the alpha was lower - then the color of the pixel will be recreated from neighbouring pixels.

Alpha select



BEFORE AFTER

Lets you select pixels based on their alpha value.

Min alpha - minimum alpha threshold, if alpha lower than this - the pixel will be removed.

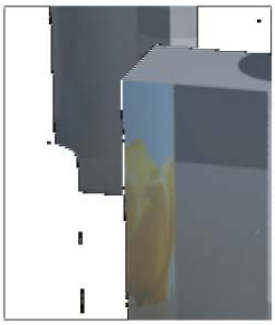
Max alpha - maximum alpha threshold, if alpha higher than this - the pixel will be removed.

Invert - invert selection.

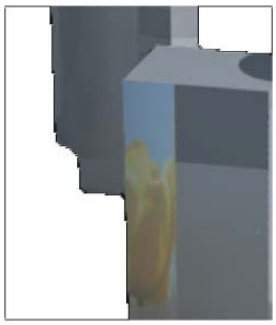
Mode - output format of the filter:

- **normal alpha** - just a regular result of the operation with all transparencies,
- **full alpha** - the result with all opacities larger than 0 turned into full opacities,
- **luma** - like normal alpha but the result is stored as luminosity data instead of alpha,
- **full luma** - like full alpha but the result is stored as luminosity data instead of alpha.

Alpha streaks



BEFORE



AFTER

Removes holes and islands from the alpha channel that form streaks (lines).

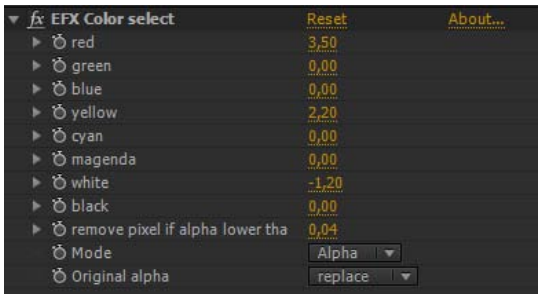
mode - select the pixel width of the streaks to remove.

Remove threshold - if the original pixel had an alpha value lower than this threshold, then the pixel will be removed even if it is not part of a streak.

Color select

BEFORE AFTER

Lets you select colors in a very intuitive way. Just add colors you want and subtract the ones you don't. This plugin treats colors the way you see them. Very simple yet amazingly effective.



Red, Green... Magenda - increase value if you want the color to be in selection, decrease value if you want to remove the color from selection.

White, Black - these are also colors you can play with.

remove pixel if alpha lower than - if original alpha of the pixel was lower than this value it will not get selected even if it meets the color criteria.

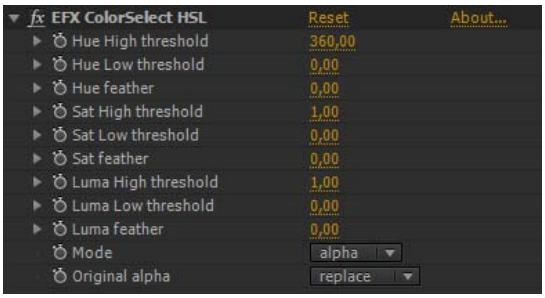
Mode - set how you want to output the selection: Luminosity or Alpha.

Original alpha - the plugin creates a new alpha channel based on color selection. This option lets you decide what to do with the original alpha channel.

Color select HSL

BEFORE AFTER

Lets you select colors based on HSL color model. Could also be used as an image analysis tool, ie. check where are the brights in the image, or the most saturated colors.



Hue High/Low - select the Hues you want to keep.

Hue feather - softening for the Hues selection.

Saturation High/Low - select the Saturations you want to keep.

Saturation feather - softening for the Saturations selection.

Luma High/Low - select the Luminosities you want to keep.

Luma feather - softening for the Luminosities selection.

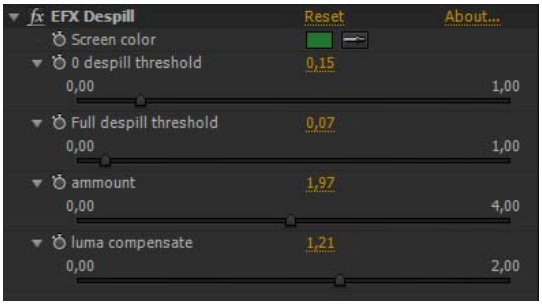
Mode - set how you want to output the selection: Luminosity or Alpha.

Original alpha - the plugin creates a new alpha channel based on color selection. This option lets you decide what to do with the original alpha channel.

Despill

BEFORE AFTER

Lets you remove a color spill after keying operations.



Screen color - the color whose spill you want to remove.

0 despill threshold - pixels whose color differs from the screen color by more than this value will not be despilled at all.

Full despill threshold - pixels whose color differs from the screen color by less than this value will be fully despilled.

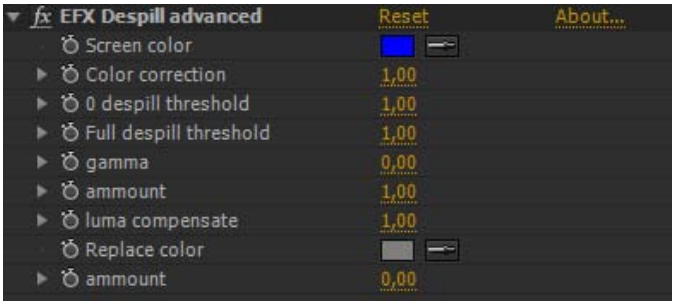
All remaining pixels will be despilled partially.

amount - set the strength of despilling.

luma compensate - lighten or darken despilled pixels.

Despill Advanced

Lets you remove a color spill after keying operations. Similar to Despill but with some additional options.



Screen color - the color whose spill you want to remove.

Color correction - lets you influence the color of the despilling.

0 despill threshold - pixels whose color differs from the screen color by more than this value will not be despilled at all.

Full despill threshold - pixels whose color differs from the screen color by less than this value will be fully despilled.

All remaining pixels will be despilled partially.

gamma - adjust the falloff between 0 despill and Full despill thresholds.

amount - set the strength of despilling.

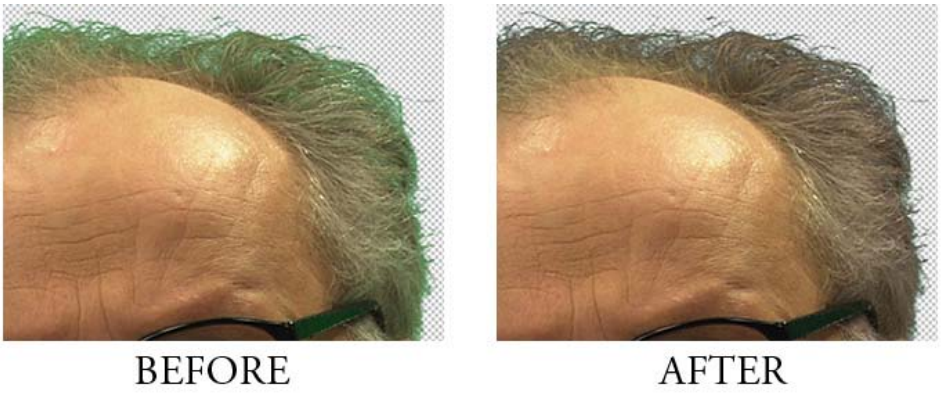
luma compensate - lighten or darken despilled pixels.

Sometimes despilling doesn't quite work , and the target background is of uniform color. In these cases it's just easier to replace the spilled pixels with the background color instead of despilling:

Replace color - select the color you want to replace the spilled pixels with instead of despilling.

amount - the amount of color replacement instead of despilling.

Despill Brute



Lets you remove a color spill after keying operations.
It's the simplest algorithm possible but sometimes the only one working. Basically it disregards completely the green channel of all the pixels that show a sign of being green (or blue for the bluescreen).

Mode - pick what kind of screen you have.

Blend - adjust strength of the despill.

Edge Bleed

BEFORE AFTER

A very subtle effect, that makes a huge difference. It removes a 1pixel or 2 pixel edge of the keyed footage to get rid of dark silhouettes left by sharpening algorithms in cameras. Unlike choke filters, it does it NOT by removing the edge pixels but by changing their color to match the pixels deeper inside the matte.

Edge min/max alpha - these values say what defines an edge pixel. You might not want to change pixels that are fully opaque - because you trust them to have a proper color. In that case you lower the Edge max alpha value below 1.0 so that only pixels with alpha lower than 1 are considered to be edge pixels and thus qualify for edge bleeding.

That said, in most cases you should leave these at their defaults.

Edge pixel color mix amount -basically a mixing value between the new pixel color and the original.

Edge pixel alpha -lets you reduce the alpha of edge pixels. It works ONLY on pixels with alpha lower than 1.0.

Mode - where does the filter look for a proper color to replace the edge pixel's color:

- **1x hv** - 1 pixel radius horizontally or vertically only,
- **1x all** - 1 pixel radius in all directions,
- **2x hv** - 2 pixel radius horizontally or vertically only,
- **2x all** - 2 pixel radius in all directions.

Caution! It's hard to distinguish between an edge of a map and just a hole inside the map. Please try to have as final matte as possible with solid white inside before you apply this effect or else you might see some blocky artifacts showing inside the matte.

Edge Blur

BEFORE AFTER

A subtle effect that softens the edge of a layer (just the alpha). Similar to other effects that do this, but it also allows you to soften the edge outwards. For this it recreates pixels around the edges, and makes them transparent.

Mode - how you want the edge softening to be performed:

- **1 in** - edge pixels will have their opacity reduced,
- **1 out** - one row of additional edge pixels will be created with reduced opacity,
- **2 in out** - both of the above effects at once,
- **2 in** - two rows of edge pixels will have their opacity reduced,
- **2 out** - two rows of additional edge pixels will be created with reduced opacity,
- **4 in out** - both of the above effects at once.

amount - the strength of the effect. Values higher than 1.0 create artifacts in "2 in out" and "4 in out".

Keyer

A simple keying plugin.

Mode - select if you want to key out the selected color or keep it.

Screen color - the color you want to key out.

Full key threshold - pixels whose color differs from the screen color by less than this value will be keyed out completely.

0 key threshold - pixels whose color differs from the screen color by more than this value will not be keyed out at all.

All remaining pixels will be partly keyed out.

Original alpha - the plugin creates a new alpha channel based on color selection. This option lets you decide what to do with the original alpha channel.

Keyer HSL

A keyer based on the HSL color model.

Mode - select if you want to key out the selected color or keep it.

Screen color - the color you want to key out.

Hue full key threshold - pixels whose color hue differs from the screen color by less than this value will be keyed out completely.

Hue 0 key threshold - pixels whose color hue differs from the screen color by more than this value will not be keyed out at all.

All remaining pixels will be partly keyed out.

It is advised to key out more than you need with the Hue settings as all the other settings let you restore previously keyed out pixels.

Sat full restore threshold - pixels whose color saturation differs from the screen color by more than this value will be restored completely.

Sat 0 restore threshold - pixels whose color saturation differs from the screen color by less than this value will not be restored at all.

All remaining pixels will be restored partly.

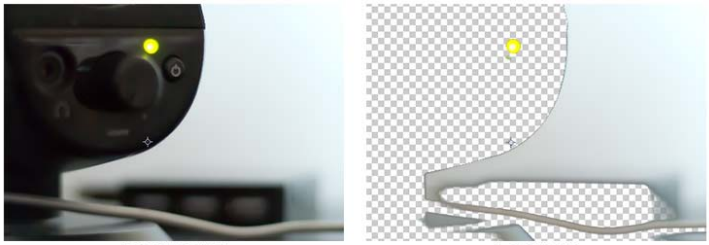
Lum full restore threshold - pixels whose color luminance differs from the screen color by more than this value will be restored completely.

Lum 0 restore threshold - pixels whose color luminance differs from the screen color by less than this value will not be restored at all.

All remaining pixels will be restored partly.

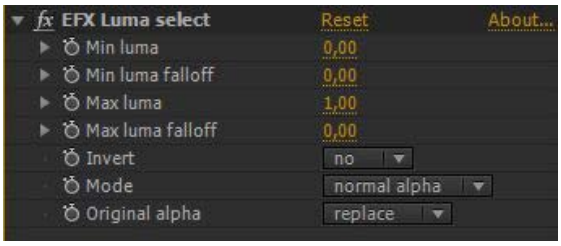
Original alpha - the plugin creates a new alpha channel based on color selection. This option lets you decide what to do with the original alpha channel.

Luma select



BEFORE AFTER

Lets you create a selection based on the luminosity of the image.



Min luma - pixels with luminosity lower than this value will be keyed out.

Min luma falloff - soft selection for Min luma threshold.

Max luma - pixels with luminosity higher than this value will be keyed out.

Max luma falloff - soft selection for Max luma threshold.

Invert - inverts the selection.

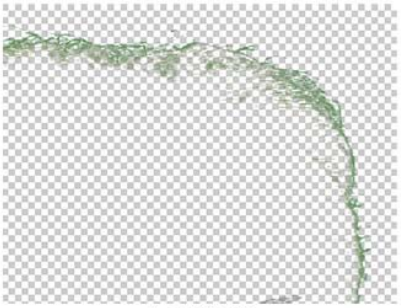
Mode - output format of the filter:

- **normal alpha** - just a regular result of the operations with all transparencies,
- **full alpha** - the result with all opacities larger than 0 turned into full opacities,
- **luma** - like normal alpha but the result is stored as luminosity data instead of alpha,
- **full luma** - like full alpha but the result is stored as luminosity data instead of alpha.

Original alpha - the plugin creates a new alpha channel based on luma selection. This option lets you decide what to do with the original alpha channel.

Spill alpha

BEFORE



AFTER

If none of the despilling filters work for you, you can isolate the spilled areas with "Spill alpha" first and then do whatever you want with all the effects available in AE to remove the spill.

Screen color - the color of the spill you want to isolate.

0 spill threshold - pixels whose color differs from the screen color by more than this value will not be selected.

Full spill threshold - pixels whose color differs from the screen color by less than this value will be fully selected.

All remaining pixels will get selected with an alpha proportional to their spill amount.

Original alpha - the plugin creates a new alpha channel based on color selection. This option lets you decide what to do with the original alpha channel.

*If the footage was keyed earlier don't be surprised to see the screen again. After all it has a 100% color spill on it. To get rid of it you have to combine the new alpha with the original so set Original alpha to A*B.*