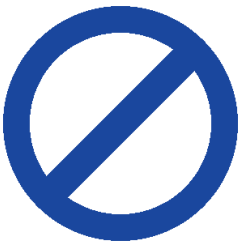
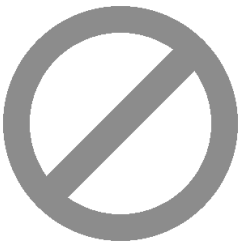
A picture as a stencil, and a picture as a mask

The same 300 x 300 pixel file four times below. It carries one bit per sample and is embedded with -stencil 1, so it has no colour of its own: each placement paints the fill colour that stands in the graphics state through the bits of the file. The fourth is the same file with -invert 1, which reverses which of the two bits is the ink.

style -fill red



style -fill blue

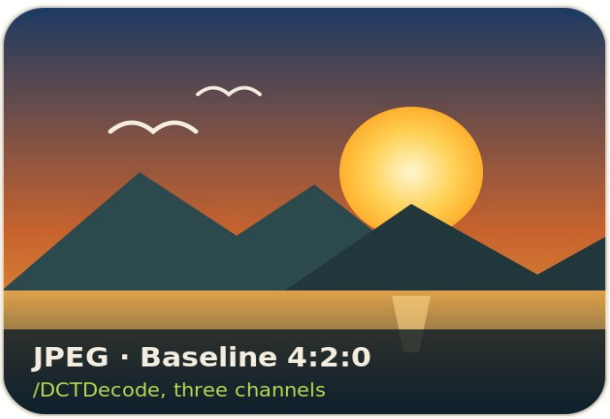


style -fill grey

-invert 1

A mask the caller names

The photograph on the right is embedded with -mask fade, naming a second embedded picture - a 640 x 480 greyscale PNG that is white in the middle and black at the rim. It reaches the file as the /SMask of the photograph, and the coloured band shows through wherever the mask is dark. The one on the left is the same JPEG without it.



the JPEG as it is

-mask fade -interpolate 1

alias	stencil	mask	interpolate	transparency
stamp	1	-	0	stencil
cutout	1	-	0	stencil
fade	0	-	0	none
faded	0	fade	1	-

-interpolate 1 is a hint and Table 87 gives it the default false, so it is written only where it is asked for; 8.9.5.3 says outright that a processor may ignore it. Where it is honoured on a stencil the effect is to smooth the edges of the MASK rather than the colour it lets through (8.9.6.2). What can be checked is the file, and that is what the commands below do.

```
qpdf --qdf --object-streams=disable 03.07-image-masks.pdf - | grep -n ImageMask
pdftoppm -r 150 -png 03.07-image-masks.pdf page
verapdf -f 3b 03.07-image-masks-pdfa.pdf
```