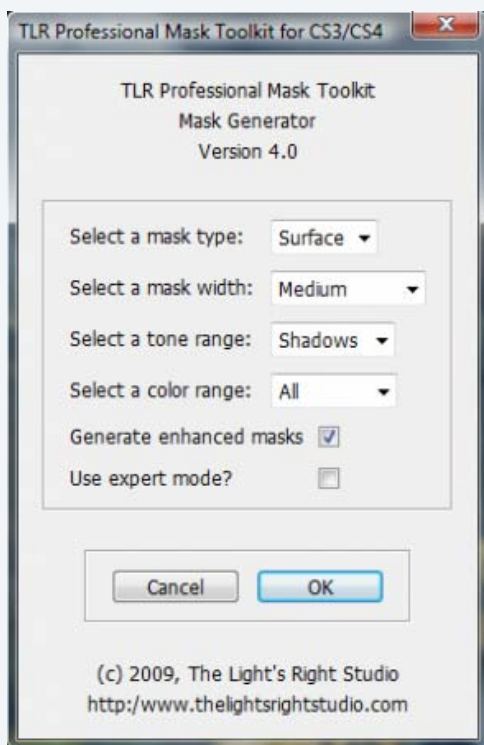


Pinpoint Control Over Noise Reduction



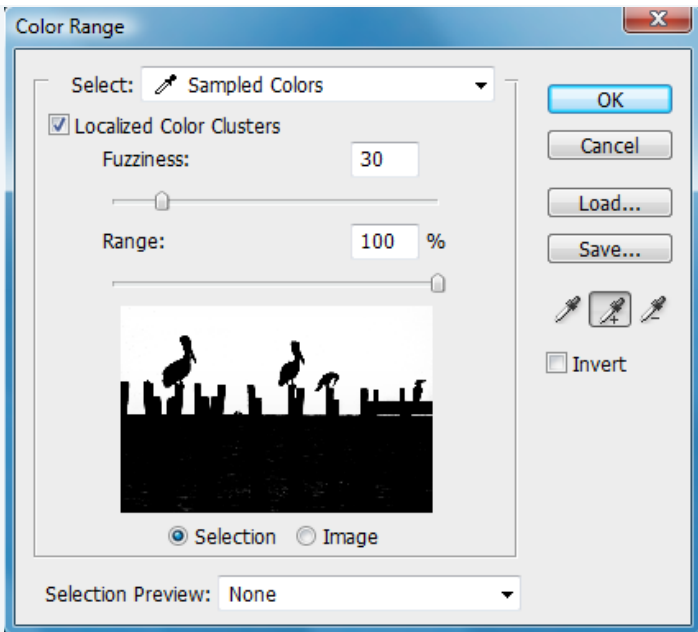
Most digital photographers apply noise reduction to the entire photograph using automatic settings. Tools like Nik Dfine, Neat Image, Noise Ninja, and Noiseware can do a better job than the built-in functionality for noise reduction in Photoshop. Applying noise reduction globally to the photograph invites a softer photo.

I've written a lot about using a surface mask with noise reduction. A surface mask can keep noise reduction away from the edges in a photograph and that can keep fine details sharper. You'll find free Photoshop scripts and action sets on this site for generating surface masks.

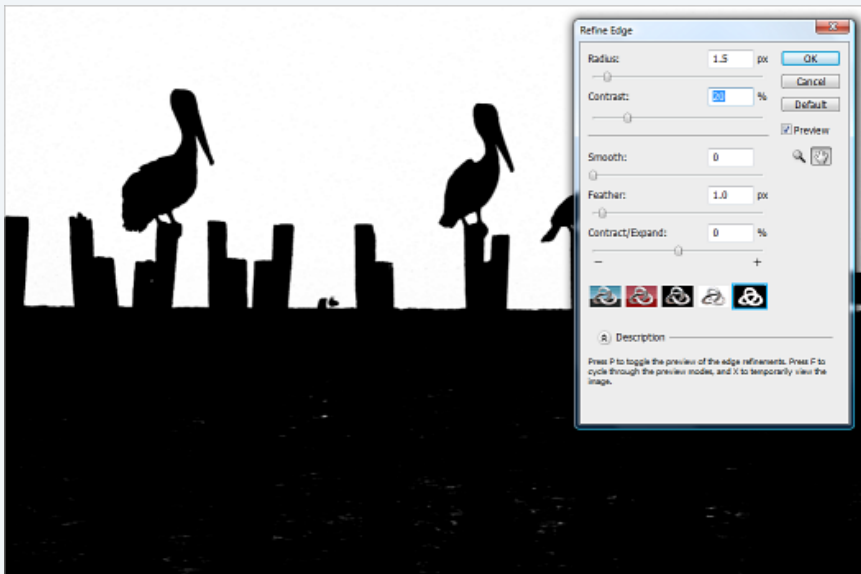
A surface mask is less global than applying noise reduction to the entire photograph, but you can still end up softening detail with a generic surface mask that could be protected with a narrower selection.

Noise is often most obvious in shadows and in sky gradients. If noise is limited to the sky or the shadows, why not restrict noise reduction to those photographic features?

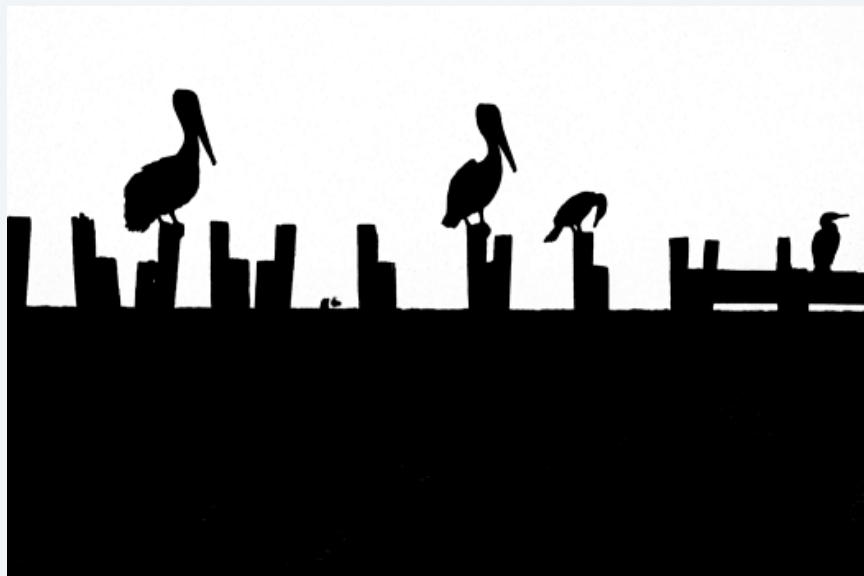
Sky is relatively easy to mask. You can usually use the Color Range command in Photoshop. You use Sampled Colors as the selection. A few clicks will usually make an adequate selection if the Fuzziness setting is moderately high.



If you use Color Range to make a mask of the sky, you'll likely need to clean it up a bit. You'll want to soften the selection. I used Refine Edge with Photoshop CS4 for this example. With earlier versions of Photoshop, you can feather the selection or apply Gaussian Blur to the mask.



In the example here, the ocean also gets some selection. Once you save the selection as an alpha channel, you can grab the brush, set it to Black at 100%, and touch up the mask with just a few quick strokes.



The mask here will keep the noise reduction limited to just the sky. This will completely protect the important details for the pier and for the birds.

The sample below is a 200% zoom of the original photo (*i.e.*, before noise reduction was applied). A small amount of noise is present in the sky gradient.



Here's the result after noise reduction was applied with Neat Image Pro+. The noise is reduced and the fine detail in the pelican is not softened. The mask did its job well.



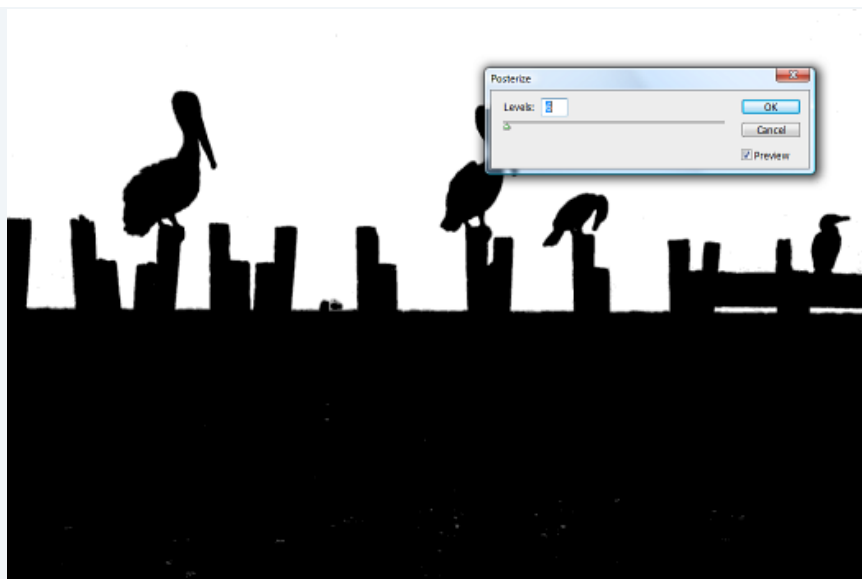
When you use a surface mask that's more carefully targeted, you can use stronger noise reduction settings. This can mean a substantially better result with high ISO photos, where noise tends to be a more severe problem.

Carefully examine the pelican in both crops. You'll see that no detail whatsoever was lost for the pelican. The photo is ready for capture sharpening.

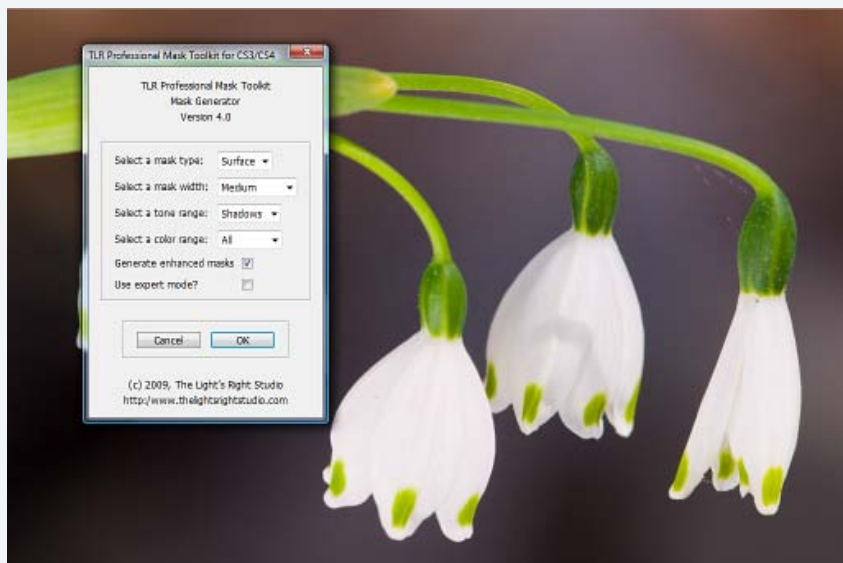
The TLR Professional Mask Toolkit script makes it easy to generate targeted surface masks for noise reduction. Not only can you choose to make a surface mask, you can make a surface mask that's restricted to sky colors or to the shadows. In this case, I chose to make a surface mask for midtone colors.



The mask is easily cleaned up with the Photoshop Posterize command. You could also use something like Levels (*e.g.*, see the example below). A few selected areas in the water with midtone sky colors were easily cleaned up with the Brush tool set to Black. You could even use this mask without further refinement and get nearly identical results.



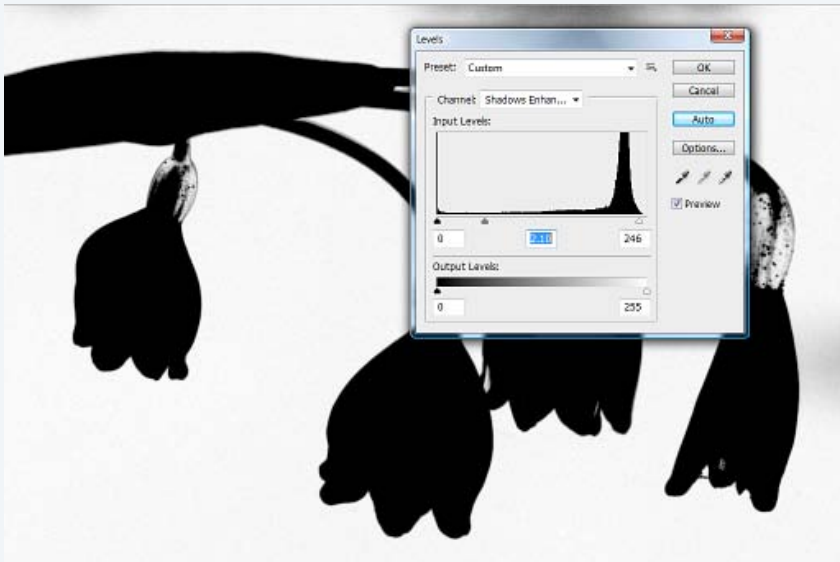
Shadows are another major photographic feature where noise tends to be more predominant. The TLR Professional Mask Toolkit script can quickly generate a surface mask that's restricted to the shadows.



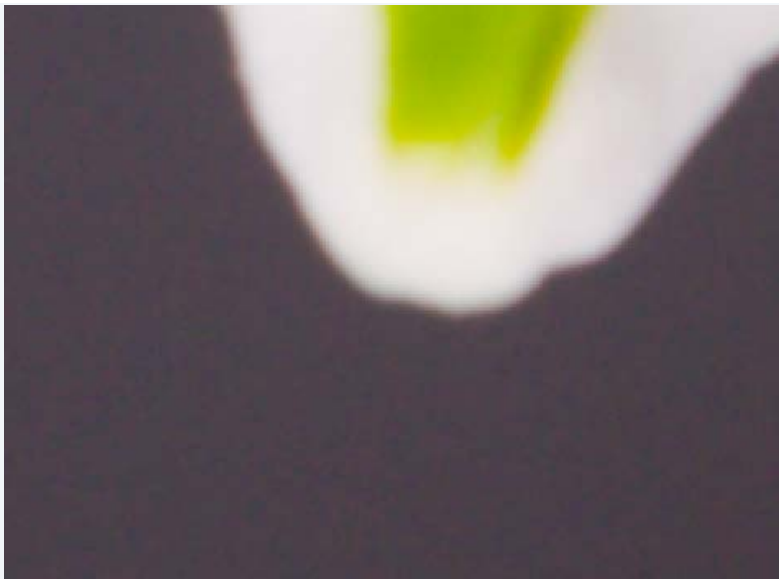
Here's the result . . .



You could use this mask "as is" and get good results. I cleaned it up with a simple Levels adjustment to the Gamma slider.



Again, here's a 200% zoom of the original photo. I typically shoot at 100 ISO. I'll do gymnastics to shoot anything but 100% ISO. There is noise evident in the shadows with this Canon D60 shot, however. Predominantly chromatic noise. Keeping chromatic noise reduction away from photographic detail is critical, since it tends to soften photos more than luminosity noise reduction.



For a small print, say 6" x 4", I'd leave the photo alone. For an enlargement, I'd apply some noise reduction. With the ability to target the noise reduction to the shadows and away from the important photographic detail, why not go ahead and apply noise reduction?



Applying pinpoint control to noise reduction is not especially difficult. The TLR Professional Mask Toolkit script makes the task easier. If you are not familiar with applying a mask to a layer, you should watch Using TLR Mask Tools. The only other skill you need is basic familiarity with adjusting masks and selections.

Noise reduction is antagonistic to sharp photographic details. With high ISO images, you typically need to trade-off some residual noise or loss of fine detail. A targeted surface mask can save critical details in your photograph and allow you to be more aggressive with your noise reduction.


I hope you find this technique helpful with your digital photography. *Cheers!*

Author information

Author Bio:

Glenn Mitchell is an avid digital photographer, technical writer, and university administrator. He is an author with a long list of publications in trade magazines, peer-reviewed academic journals, and co-authored books. He is creative force behind The Light's Right. His photography can be seen at his gallery site: www.thelightsrightstudio.com.

Author: Glenn E. Mitchell II, Ph.D.

 Technorati Tags: photoshop photoshop elements noise reduction

Digg

submit

Rating:



Average:

