



photo &
video

Lionfish,
the image
to be used
for this
tutorial

Text and photos by Rico Besserdich

In this series of articles on postproduction of underwater images, we have worked a lot on white balance settings, basic and advanced exposure corrections, contrast and curves, advanced techniques of removing colour casts, basic and advanced retouching, final colour boost, cropping and sharpening. Finally, our image is ready! And now, we arrive at the question: What do I do with it? How do I save it for further editing, or how do I create final files for Facebook, websites and printing?

The good news is that if you did your entire image processing in a RAW converter, such as Adobe Camera Raw or Adobe Lightroom, you have



Proper Export

of Underwater Images in Postproduction

nothing to worry about, with regard to keeping your work files. Editing RAW files is non-destructive, and your original photograph is never altered. You can

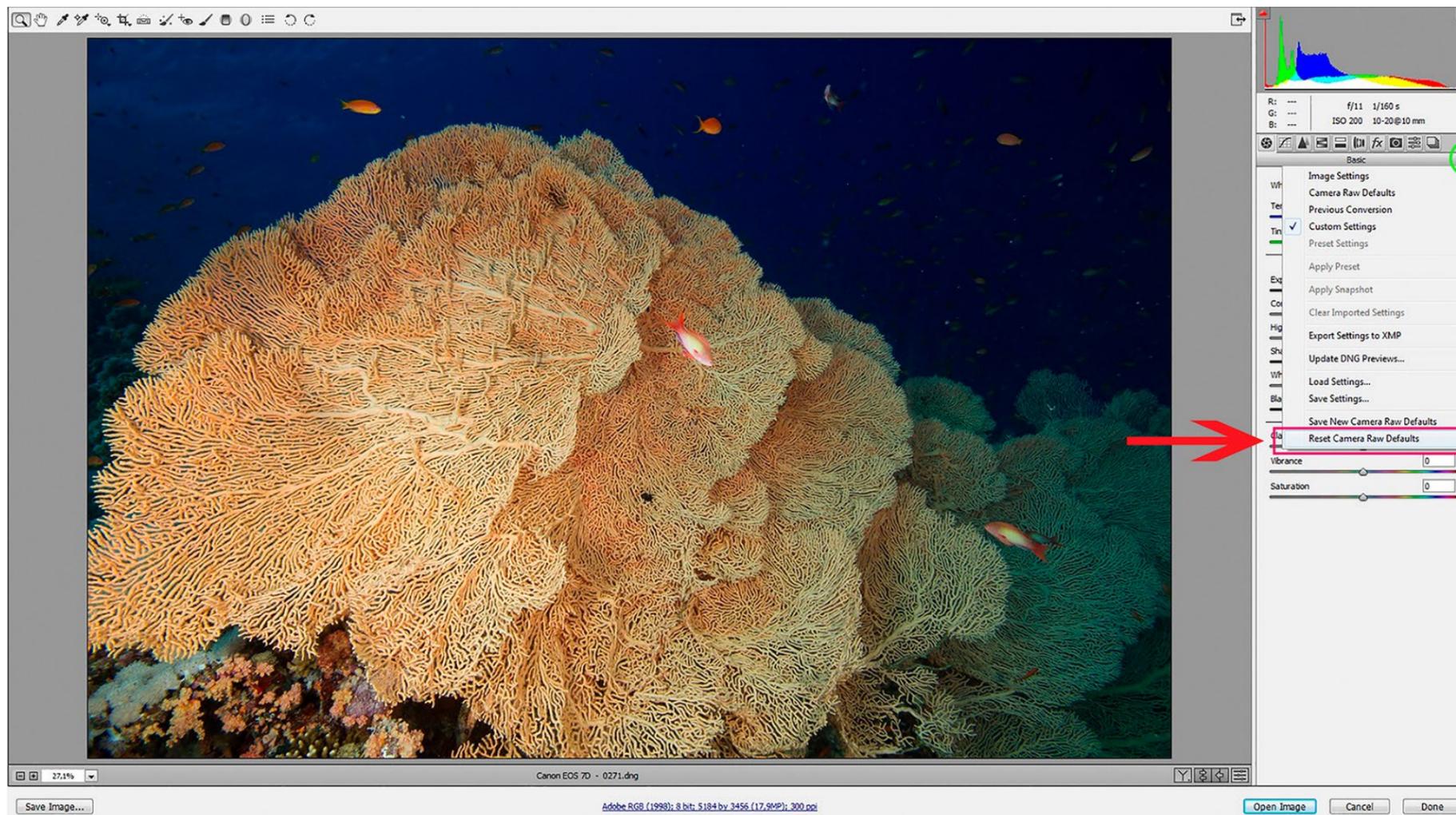
always go back to "zero," improve your postproduction, try something new or start from scratch (without loss of quality).

In Adobe Camera Raw, just open the Options menu at the top right of the "Basics" module (green circle) and select "Reset Camera Raw Defaults."

Your edited RAW file will then reset to its original state. Alternatively, you can manually set altered values of exposure, contrast, etc., back to "0," just in



Screenshot 1. In Adobe Camera Raw, to reset an edited image to its original unedited state, open the options menu at the top right corner of the "Basics" module (green circle) and select "Reset Camera Raw Defaults" (red arrow). Or, in case you do not want to revert completely back to the starting point, you can manually set altered values of exposure, contrast, etc., back to "0."



Screenshot 2. In Adobe Lightroom (below), to reset an edited image to its original unedited state, just right-mouse-click in the image itself (in Lightroom's Development module) to access the submenu. Then, select the "Reset" options in the "Settings" submenu and your RAW image will get set back to "0."

case you do not want to completely revert back to the starting point (See Screenshot 1).

In Adobe Lightroom, you can access a submenu when doing a right-mouse click in the image itself (in Lightroom's development module). Select the "Reset" option in the "Settings" submenu and your RAW image will get set back to "0." (See Screenshot 2)

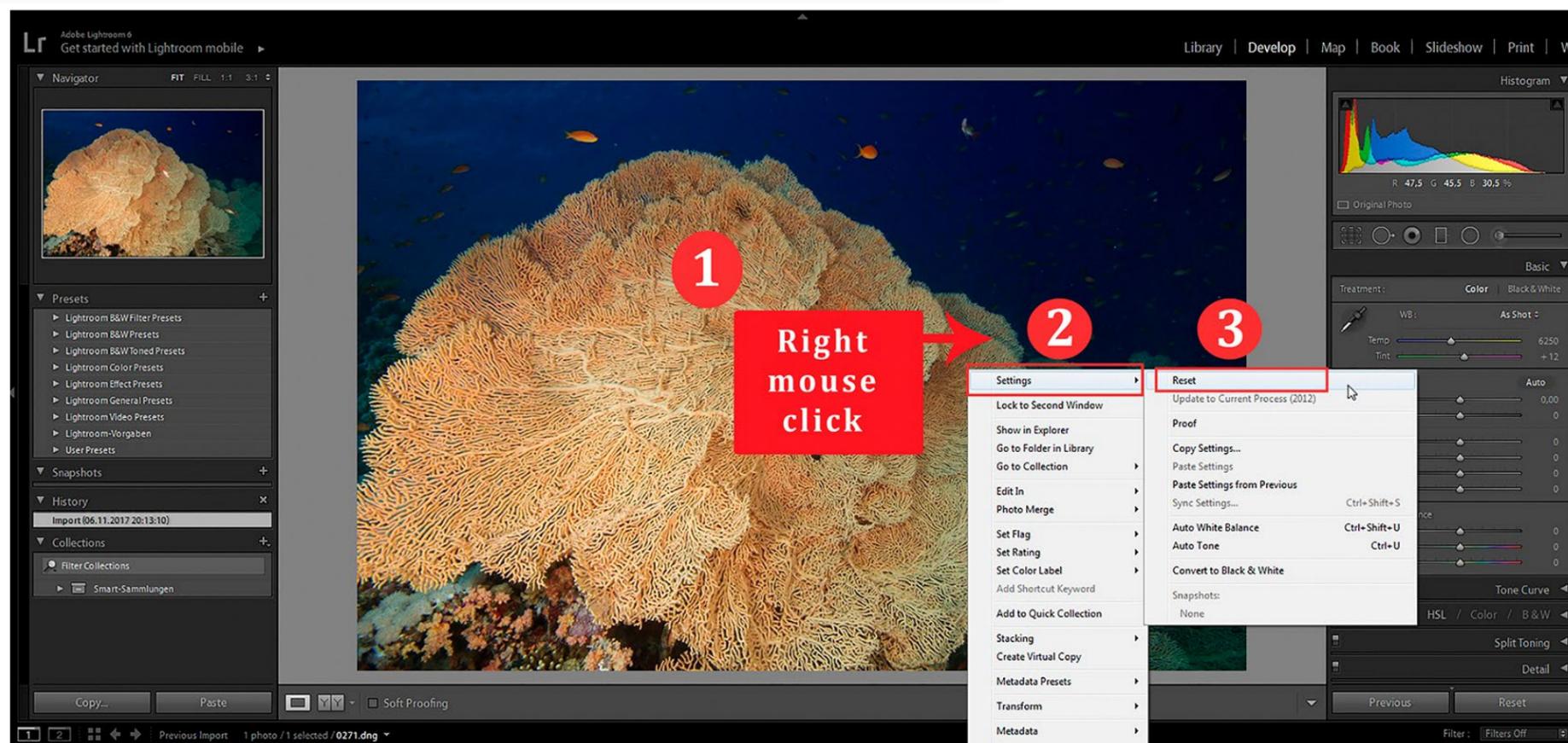
In case you have done more editing in Photoshop and maybe want to return to that work file later, it would be wise to save that file and all layers as Photoshop PSD files. Only this file format provides the opportunity to modify, change or alter your former steps of postproduction in Photoshop.

How to export any ready, edited image pretty much depends on the planned usage.

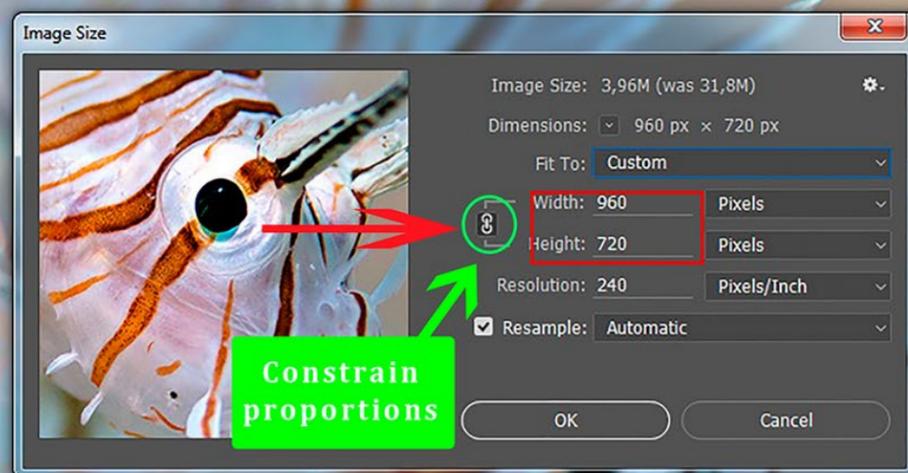
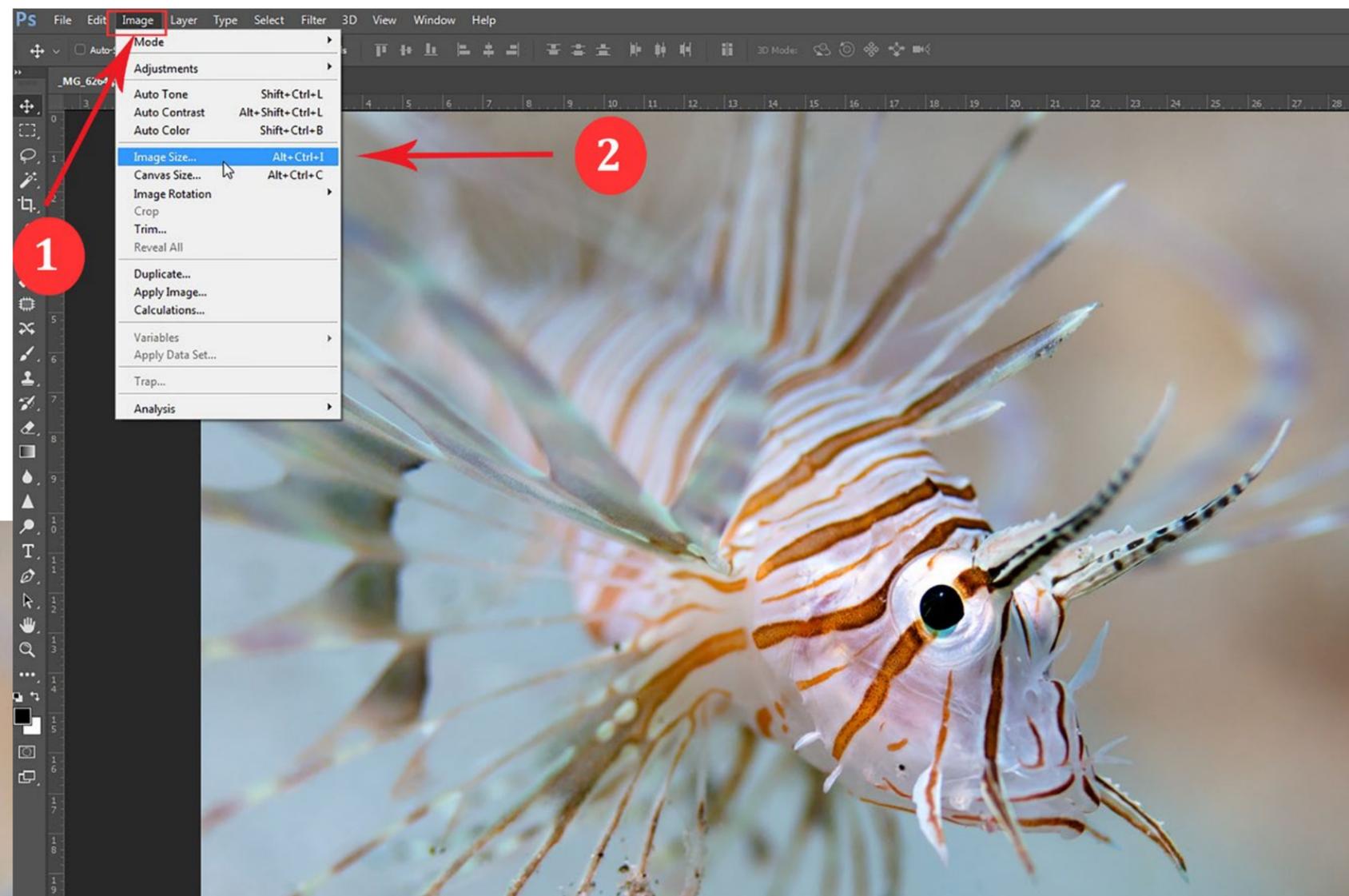
Exporting images for Facebook and webpages

Our original images are way too large for internet usage, and their RGB colour space is not ideal for the majority of internet browsers. For example, only Apple's Safari browser is capable of rendering images in RGB colour space; all other browsers (such as Google Chrome, Microsoft Internet Explorer, Mozilla Firefox and so on) can only display/render images in the sRGB colour space. If such a browser detects an RGB image, it will convert it to sRGB by itself. This then often results in loss of contrast and colours, thus making the images look a bit "flat." They might look perfect on a Mac, but they will not look very good on a PC.

Not every potential client or fan uses Apple products to view your images in the World Wide Web. So, we will need to downsize and optimise images for



Screenshot 3. To downsize and optimise images for web presentation, and make sure they look the same (good) on all devices, go to: "Image" in the top navigation bar and select "Image Size" in the dropdown menu.



web presentation, making sure they look the same (good) on all devices. That's easy to do!

1. Go to "Image" and select "Image Size." (See screenshot 3)
2. Let us consider that we want to export this image for sharing on Facebook. In the upper field, called "Pixel Dimensions" (red area), I have changed the width of the image to 960px. As long as "Constrain Proportions" is checked (it should be), Photoshop alters the length accordingly. I leave all the rest as it is. (See Screenshot 4)

Please bear in mind that it is pointless to upload a full-resolution image (i.e. 6000 x 4000 pix = 24 megapixels) in 300 dpi and RGB to Facebook (or any other social media platform) as these web applications are not designed to display such

large images. The better method is to prepare your images for web use before you upload them. As for Facebook, 960px (on the longest side) usually does a fine job. Bigger is not better, and unnecessary.

There are easier ways to do this, but I am using this one for a special reason: Resizing images always comes with a slight loss of sharpness. But we want our images to look as good as possible, and no minute is ever wasted if you are striving for the best.

3. So, after downsizing the image, I add a little tiny bit of sharpness to it once again, just to equalise the sharpness loss due to resizing. In the "Unsharp Mask" panel, an "Amount" of 25 to 40 with a "Radius" of 0.5 to 0.7 and a "Threshold" of "0" usually does a good job here. (See Screenshot 5 on next page)

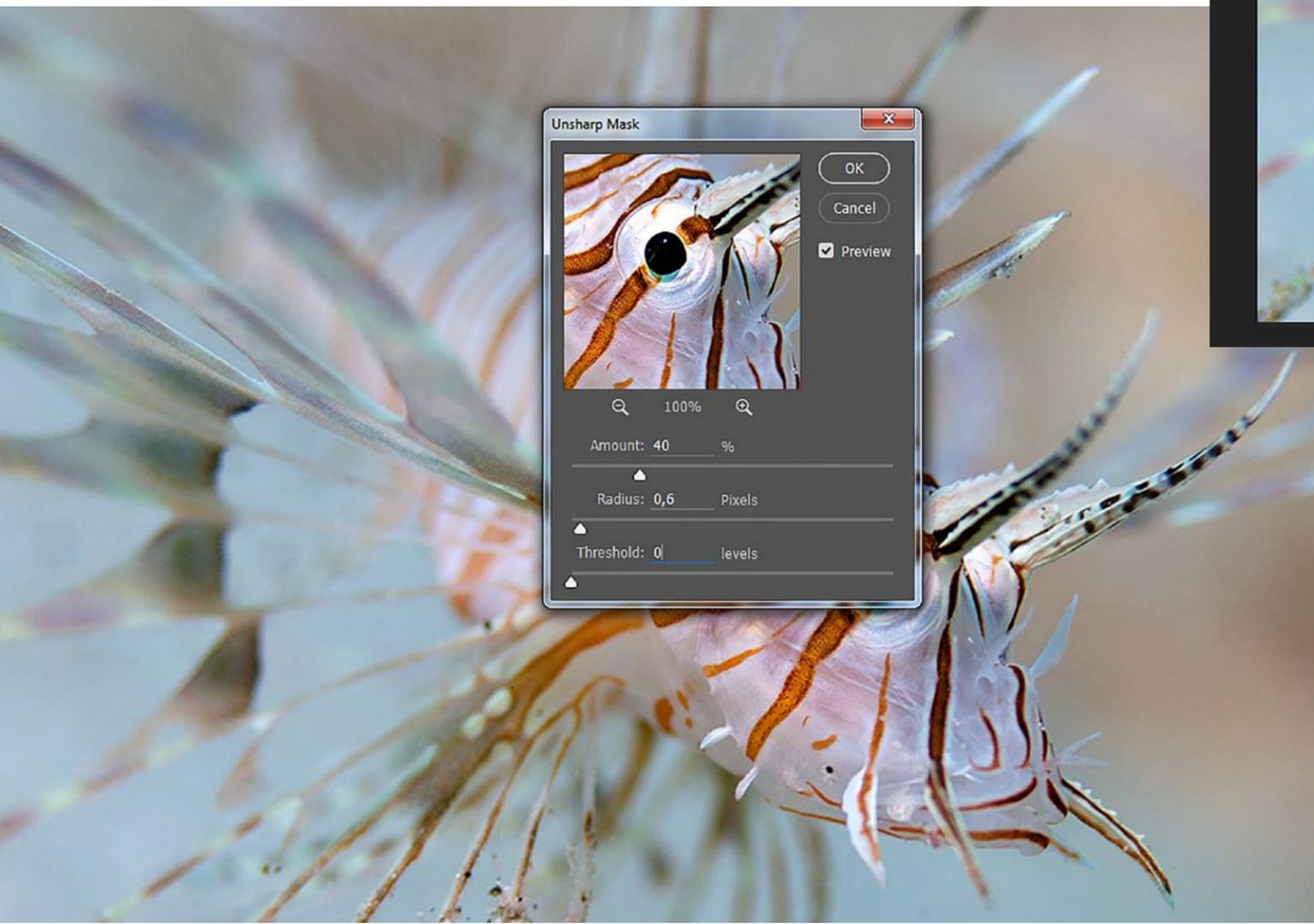
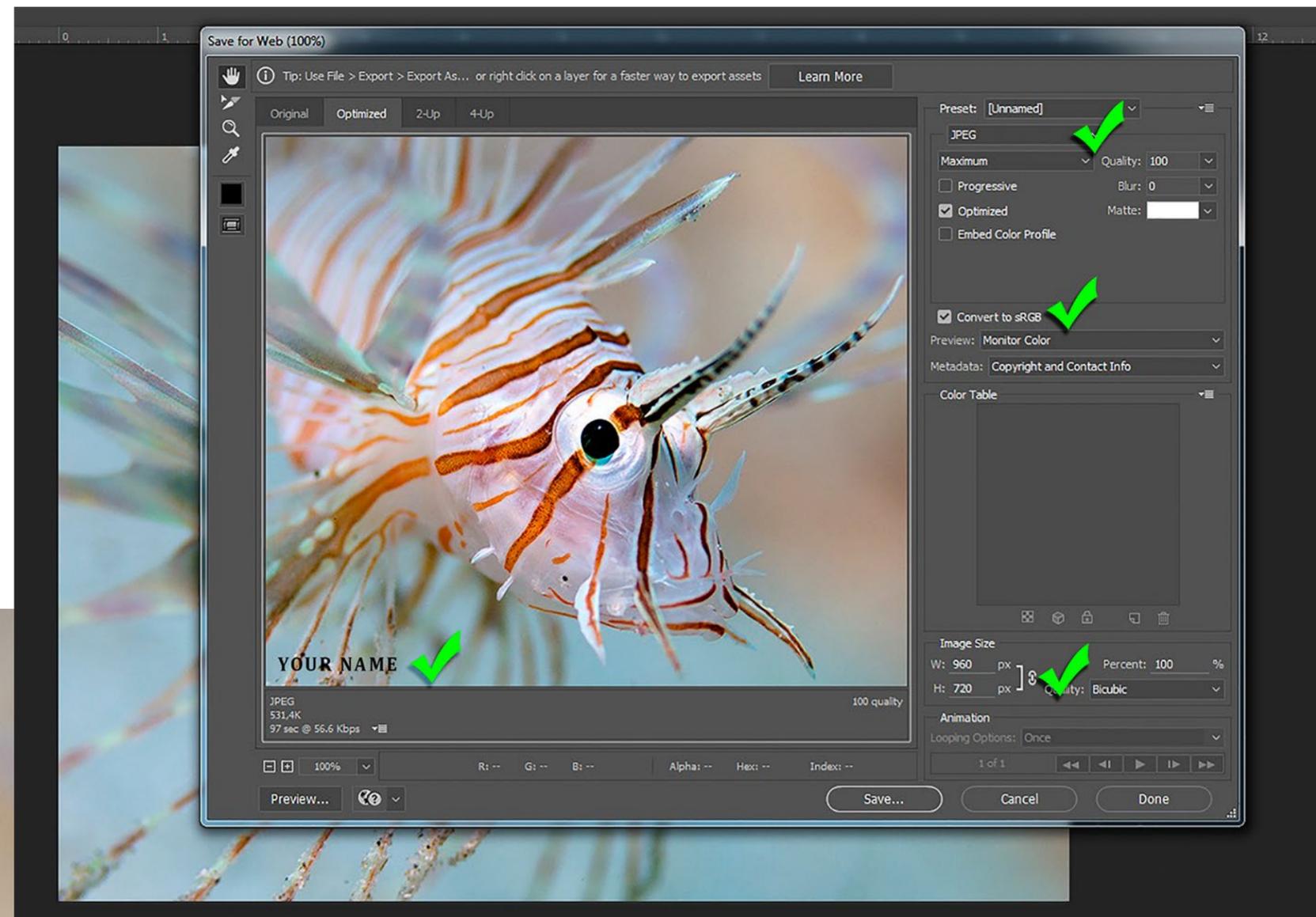
Screenshot 4. Use the "Image Size" panel to adjust pixel dimensions (red box) of image files for posting on social media like Facebook. Remember to check that the "Constrain Proportions" icon is selected (green circle).

Screenshot 6. Important: Use the text tool to add your copyright and name to the image. To save the resized image file, go to: File > Save for Web, and make sure the "Convert to sRGB" box is checked. Remember: When you finally close the PSD file, make sure you click "No" when asked if you want to save the changes, or else you will overwrite your full-size original Photoshop file with the downsized one.

- At this point, it might be a good idea to write your copyright/signature in the image by using Photoshop's text tool. Never forget this step when preparing images for web usage.
- The rest is easy. Just go to: File > Save for Web (or File >

- Export > Save for Web in earlier Photoshop versions, starting with CC 2015) and check that the checkbox "Convert to sRGB" is activated. (See Screenshot 6)
- Finally, close the PSD file, and then when Photoshop asks you, "Do you want to save

the changes?" you select, "NO"! Otherwise, you would overwrite your full-size original Photoshop file with a downsized one.



Screenshot 5. To equalize the sharpness loss due to re-sizing, use the Unsharp Mask panel to slightly adjust the sharpness of the image file. Set the "Amount" between 25 and 40, with a "Radius" of 0.5 to 0.7 and a "Threshold" of "0".

Exporting images for printing

Printing digital images is a bit of a science on its own... and I am not talking about our home printers. First of all, digital cameras produce images in the RGB colour space. Screens of all kinds (including TV screens and beamers) display images in RGB or sRGB, but printers print in the CMYK colour space. There are a few magazine editors out there who may cause a headache for you by requesting weird file formats in the CMYK colour space.

We, of course, could do it too, but we would never be able to fine-tune the colour

management of our image in accordance with the printing devices used by professional printing companies. This final fine-tuning of the image file (called a "proof") should be done by the staff of the printing company where the image will be printed. (Image export for professional prints will be the topic of the next tutorial in this series.)

While low-cost printing services are happy with a JPG with lowest compression (level 12) and in the RGB or sRGB colour space, professional prints require files that come with as much image information as possible. Saving your image as an uncompressed TIFF or uncompressed PDF ensures

that the very best possible file gets sent to the printing company or publisher.

To do so, you just need to go to: File > Save As, and then, in the "Format" section of the menu, select TIFF or Adobe PDF.

One last tip: When finalising images for prints, you always need to slightly oversharpen them, as a slight loss of sharpness is a side effect of the printing process. ■

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Nauticam WWL-1B wet wide converter

The new WWL-1B wide-angle converter by Nauticam features the same optics as the WWL-1, but it now includes an integrated aluminium buoyancy collar to make it nearly neutral underwater. The wet-changeable underwater wide-angle conversion optics supports full-zoom range, allowing flexibility for various underwater shooting situations. It is compatible with various lenses from Sony, Sigma, Nikon, Olympus, Panasonic, Canon and Fujifilm. It is recommended for zoom lenses that start at 28mm focal range (for instance, the Sony 28-60mm). When using a 28mm lens, the maximum field of view is 130 degrees. The wide-angle converter has four optical elements with anti-reflective coating, is made of hard-anodized aluminium alloy, weighs 1.35kg (0.12kg underwater) and is depth-rated to 150m. nauticam.com



Inon SD mount bayonet with locking system for GoPro Hero

The mount bayonet allows the attachment of Inon's UFL-G140 SD underwater semi-fisheye conversion lens or the UCL-G165 SD underwater wide close-up lens to the standard GoPro Hero action camera underwater housings. The adaptor is made of reinforced plastic (FRP) and can be easily attached with a thumbscrew. Furthermore, it allows the attachment of additional accessories such as ball mounts, grips/trays or tripods. The adaptor weighs 40g, and the lenses can be attached or detached underwater. inon.jp



Inon LE600h-S and LE600h-W LED flashlights

Inon's new series of underwater torches for photography offer a higher CRI (CRI 90) to reproduce the natural colour of a subject when shooting still images with the LED flashlight as a primary lighting source. The LE600h series is designed to produce 6500K constant light, providing a beam angle of 30 degrees (for LE600h-S) or 75 degrees (for LE600h-W). inon.jp



Nauticam housing for Sony A7C camera

Nauticam has released a housing for Sony's latest mirrorless full-frame camera, the A7C. The housing comes with Nauticam's patented port locking system and rotary locking latch. A special feature is the HDMI 2.0 support, which allows the connection of external monitors such as the Atomos Ninja V. The NA-AC7

housing is compatible with Nauticam's premium optics such as the WWL-1/WWL-1b wide-angle converter, and the CMC-1/CMC-2 macro diopters. Both optics are known to perform well with the Sony FE 28-60mm f/4-5.6 lens. The housing's dimensions are 307mm x 172mm x 103mm. It weighs 1.78kg topside, and 0.19kg underwater (with camera). The housing is depth-rated to 100m and has a port opening for N100. nauticam.com



Seacam housing for Canon EOS R5

Seacam has announced the production of a new "silver-line" underwater housing for the new Canon EOS R5 full-frame mirrorless camera. According to the announcement, the housing will offer full access to all the camera's controls, including the rear multi-controller. It will accept both Canon R- and EF-mount lenses (by using Canon's adapters), and will include three ports for strobe triggering, vacuum or remote control. Furthermore, an HDMI 2.0 port will be included. Dates for the completion of development and availability are not yet confirmed but expected to be announced within the next two to three months. [facebook.com](https://www.facebook.com/seacam)