Post-processing Techniques for Macro Focus Stacking

Wade Sheldon
www.sheldonphoto.net
The Basics

- “Focus Stacking” or “Focus Blending” is a technique for digitally combining multiple images of the same scene taken at different focus distances.
- Similar to HDR except the sharpest portions of the images used rather than best exposed.
- Commonly used for macro and photomicrography, but also useful for telephoto landscapes.

[Additional content and images related to focus stacking are shown here.]
The Basics

- Many Benefits
  - Practically unlimited DOF (100’s of images can be combined)
  - Can shoot at optimal f-stop of lens for max. sharpness
  - Can achieve sharp focus on subject with highly blurred background (good bokeh)

- Also Many Costs
  - Time-consuming to shoot and to post-process (hours?)
  - Lots of storage required for images (20+ per scene)
  - Lots of computing power required (RAM + CPU)
  - Requires high end photo editing software (PS CS4+) or specialty software (Zerene Stacker, Helicon Focus, ...)
  - Requires motionless subject and good technique (tripod, rails)
Photoshop Technique (CS4+)

1. Load photos as layers
   - From PS: Use “File” > “Automate” > “Photomerge” (auto layout and uncheck all blend/vignette options)
   - From Bridge: select files then use "Load Files into Photoshop Layers"
   - From Lightroom: select files then use “Edit In” > “Open in Photoshop as Layers”

2. Align the layers
   - Select all layers then use “Edit” > “Auto-Align Layers”
   - Use “auto” setting

3. Blend the layers
   - Use “Edit” > “Auto-Blend Layers”
   - Use “Stack Images”, “Seamless Tones and Colors” settings

4. Edit layer masks to fine-tune blending (optional)

5. User “Layer” > “ Flatten Image” to create a unified image
Photoshop Technique (CS4+)
Zerene Stacker

- Dedicated software for photo stacking
- Preferred by many nature photographers (best for bristles, fine details, Stackshot automation)
- Much faster and lower RAM required than Photoshop
- Excellent, intuitive editing compared to layer masks
- Can save “Project”, export TIFF/JPEG image
- Prosumer and Pro versions include LR plugin
- Multiple versions: $39 student - $289 pro (30 day trial)
- Website: [http://zerenesystems.com/cms/](http://zerenesystems.com/cms/)
Zerene Stacker - Lightroom Plugin
Zerene Stacker
Hints

- Do bulk adjustments before (color temp, exposure, ...)
- Do fine editing on final image (dust, litter, ...)
- Make sure you nail focus on the foreground point!
- For macro move the camera (rails, Stackshot) rather than adjust focus to prevent perspective shift/zoom
- Spend extra time on composition to avoid regrets
Examples
Examples
Examples
Examples
Online Resources

- **General Overviews:**
  - [http://www.cambridgeincolour.com/tutorials/focus-stacking.htm](http://www.cambridgeincolour.com/tutorials/focus-stacking.htm)
  - [https://en.wikipedia.org/?title=Focus_stacking](https://en.wikipedia.org/?title=Focus_stacking)

- **Photoshop Tutorials:**
  - [https://photographylife.com/how-to-focus-stack-images](https://photographylife.com/how-to-focus-stack-images)

- **Software:**