ON1 Photo RAW

From A to Z

Version 2022

The Official ON1 Photo RAW User Guidebook

Photo by Hudson Henry

Contents

Stitching Panoramas

Blending HDR Images

Focus Stacking

Time-Lapse

Part 5: Output and Sharing

ON1 Resize

Export

PART 1: ON1 PHOTO RAW 2022 OVERVIEW

ON1 Photo RAW 2022 is a complete photo editor, built around a modern photo organizer and a sophisticated raw processing engine. Photo RAW lets you apply quick, non-destructive edits and stylized effects to your photos and perform expert portrait retouching using AI-based machine learning algorithms. Nearly all of your edits can be made globally or locally, and Photo RAW's advanced masking tools let you create and refine complex selections with a few clicks, and the stunning new Sky Swap AI feature makes the process of replacing boring skies a breeze.

For more complex projects, Photo RAW includes a layers functionality for compositing and blending images quickly and easily—while still preserving complete re-editability. You can also combine a series of photos into beautiful panoramas, stunning HDR images, and perfectly focus-stacked photos with the click of a button, or use the time-lapse feature to create flicker-free movies from hundreds of still images. You can even use many of the image-processing plugins created for Adobe Photoshop in your ON1 Photo RAW 2022 workflow.

Photo RAW incorporates a state-of-the-art raw processor, which lets you work in a fully non-destructive workflow: you can quickly import, sort and view raw photos in Browse, and finish them in the Edit module without having to worry about saving your edits. The next time you open your photo, all of your settings will be remembered, and you can easily change settings, add new ones, or start over from scratch, all without having to save additional versions of your photo. Photo RAW 2022 is even non-destructive when working with such non-raw formats as JPEG, Photoshop (PSD), PNG and TIFF.

When you're done editing, you can perform industry-standard image enlargement on your photos—with full printing capabilities—and can easily share your images with friends and on social media. And, when Photo RAW is used in conjunction with the optional ON1 Cloud Sync service, you can capture, view and edit your photos across multiple computers and mobile devices without having to worry about their location. You can even share presets, and extras like backgrounds and textures, between two computers.

Getting Help

You can find an extensive collection of video tutorials and help documents in the Help section of the ON1 website (on1help.zendesk.com). This is the best and quickest way to dig into the entire ON1 workflow and discover new techniques that will help you with your photo editing and organizing. There, you can search our Knowledge Base for frequently asked questions, common issues and more.

Inside ON1 Photo RAW 2022, you can use the Learning Hub to directly display videos for getting started with the app, search the ON1 online help system—including with and online chat assistant—and the ON1 Shop, where you can purchase add-ons and courses for Photo RAW. If you're a member of the ON1 Plus community, you'll also find access to Plus content and loyalty reward downloads.

The Learning Hub is available directly from within ON1 Photo RAW 2022, and includes links to videos (which can be played directly in the Hub window), ON1's online help system, and the ON1 store.

The Learning Hub is accessible via the Help menu or from the Help icon at the bottom of the left bumper panel.

System Requirements

	MINIMUM	RECOMMENDED
OPERATING SYSTEM	macOS 10.14, 10.15, 11 Windows 10 current maintenance releases, 64 bit only	macOS 10.15, 11 Windows 10 current maintenance releases, 64 bit only
PROCESSOR	Intel Core i5, Xeon or better processor; Apple Silicon processor	4-core Intel Core i5, Xeon or better processor; Apple Silicon processor
RAM	8 GB	16 GB or more
HARD DRIVE	1.5 GB for installation	1.5 GB for installation SSD drive
DISPLAY	OpenGL 3.3 compatible video card with 512 MB VRAM, 1280x800 resolution (at 100% scale factor)	OpenGL 4.2 compatible video card with 2GB+ of dedicated VRAM, 1920x1080 resolution (at 100% scale factor)
MOBILE APPS	Apple iPhone or iPad with iOS 12.3 or higher; Android phone or tablet with Android 7 (Nougat) or higher. *current maintenance releases, 64 bit only*	Apple iPhone/iPad with iOS 13 or higher; Android phone or tablet with 64-bit Android 9 (Pie) or higher. *current maintenance releases, 64 bit only*
INTERNET	A high-speed internet connection and active account for ON1 Cloud Sync, activation, auto-update checking, content downloads, and tutorials.	
SUPPORTED OPTIONS	Supports pressure-sensitive tablets for controlling brush size and/or opacity, and external control devices (such as those from LoupeDeck and El Gato). Supports ICC/ICM profiles for camera input, display, soft-proofing, and printing. Hardware display calibration tool is recommended. In addition, Photo RAW 2022 also supports many plugin apps designed for use with Adobe Photoshop.	
LANGUAGES SUPPORTED	English, German, Spanish, French, Japanese, Korean, Simplified Chinese, Russian, Portuguese, Italian, Dutch	

Installation

To install ON1 Photo RAW 2022, double-click the Installer icon and allow it to guide you. Before installing or updating, close any previous versions of ON1 products that might be open.

> **NOTE:** If you have Adobe Lightroom Classic CC installed on your Windows or Mac system, the Installer will add a Lightroom plugin for migrating your Lightroom catalog to Photo RAW. See for information on this process.

MACOS

The application is installed in the ON1 Photo RAW 2022 folder in the Applications folder.

If a previous version of ON1's Photo RAW, Perfect Photo 10 or Perfect Photo Suite is found, it will be maintained or replaced based on your preference during installation.

Support files are installed into /Library/Application Support/ and ~/Library/Application Support/ folders.

WINDOWS

The application is installed in the ON1 Photo RAW 2022 folder in the \Program Files\ON1\ directory. If a previous version of ON1's Photo RAW, Perfect Photo 10 or Perfect Photo Suite is found, it will be maintained or replaced based on your preference during installation.

Support files are installed into \ProgramData\ON1\.

UPGRADING FROM PREVIOUS VERSIONS

If you have earlier versions of ON1 Photo RAW on your computer, the installation process will move over any cataloged folders, albums, and metadata presets.

BACKING UP YOUR PHOTO RAW CONFIGURATION

ON1 Photo RAW 2022 includes a back-up and restore function for most of the app's settings, presets, extras, all edits, made to any image and much more (your photos are not backed up, however). To learn more about this feature, see "Backing up Your Work in Photo RAW" on page 253.

Launching ON1 Photo RAW 2022

To launch Photo RAW 2022, with access to all modules, follow these steps:

MACOS

1. Open your Finder.
2. Navigate to the Applications folder.
3. Navigate to the ON1 Photo RAW 2022 folder.
4. Double-click on the ON1 Photo RAW 2022 application icon.

You can add ON1 Photo RAW 2022 to your dock for easy access by clicking and holding the icon in the dock and selecting the Keep In Dock option. If you use Launchpad it can be found there as well.

WINDOWS 10

1. Open the Start screen by pressing the Window key.
2. Select ON1 Photo RAW 2022.

If you selected the "Add Icon to Desktop" option during installation you can also access ON1 Photo RAW 2022 from there.

Licensing and Registration

When you first launch Photo RAW, Buy Now and Sign-In buttons will be visible at the top left.

IF YOU HAVE PURCHASED ON1 PHOTO RAW 2022:

Click on the "Sign-in" button and fill in your ON1 account information (email and password) to register the app with us. (You should have set up an account when you purchased the software.) If the computer you are signing in with does not have access to the internet, you can manually register your software by clicking on the "No Internet connection" link in the license dialog.

Your license lets you install Photo RAW on two computers. When you enter your ON1 account info, Photo RAW communicates with the ON1 activation server and registers your software for that computer.

When you first launch ON1 Photo RAW, sign in with your ON1 User ID (which you set up when you purchased the software) If you downloaded the app to try out, you can see how many days are left in your free trial.

If you wish to move your copy of Photo RAW from one registered computer to a new one, and you are not going to be using the older machine, it is best to sign out of the old computer first. Open Photo RAW and select Sign Out from the Help menu. This will deactivate Photo RAW 2022 on the current machine, and you can install and sign in on another machine.

You can log into your ON1 user account area (https://www.on1.com/login/) at any time to download the software, see the number of computers you have registered, and make basic changes to your account information, including your email address, password, and notifications.

If you have issues related to installing or activating Photo RAW, please contact ON1 customer support, which can be reached by clicking on the ON1 website's Support tab (https://on1help.zendesk.com).

TRIAL VERSION

ON1 Photo RAW 2022 can also operate as a fully featured trial version for 14 days from when you first launch it. This gives you time to evaluate the product and see if it fits your needs. Each time you launch Photo RAW during the trial period, the Buy Now button will tell you how many days remain in the trial.

You can purchase ON1 Photo RAW 2022 at any time by clicking on the Buy Now button. Once you do that, click the Sign-In button the next time you launch the product and enter your ON1 account information. If your trial period has ended, Photo RAW will present you with an activation window when you launch the app. There, you can enter your ON1 account info to activate the app.

PRODUCT IMPROVEMENT PROGRAM

We believe that the best products are made by listening to our customers. We use many methods to gather your ideas and feedback including: emails, surveys, direct conversations, market analysis and the Product Improvement Program. The Product Improvement Program is built into our software and gathers information about how our software is used. It is the most accurate way for us learn what features are important to you and how our products fit into your workflow.

You can choose to participate in the Product Improvement Program the first time you launch ON1 Photo RAW 2022. You can change your participation later, just click the Help menu, then Help Improve ON1 Products.

To learn more about the Product Improvement Program, go to the Support area of the ON1.com website.

Uninstalling ON1 Photo RAW 2022

To uninstall ON1 Photo RAW 2022, first deactivate your product: open ON1 Photo RAW 2022 and select Sign Out... from the Help menu. (This will allow you to transfer your license to another computer.)

MACOS

Go to the Applications/ON1 Photo RAW 2022/Documentation folder, and double-click on the Remove ON1 Photo RAW 2022 application.

WINDOWS

Go to Control Panels, and under Programs select Uninstall a program. In the list that comes up select ON1 Photo RAW 2022 and then click on the Uninstall button.

Working with Files

ON1 Photo RAW 2022 can view and open the following file types, in RGB color mode, at either 8 or 16 bits per pixel:

- Raw files from most major camera manufacturers (file extension varies by manufacturer)
- Digital Negative (DNG)
- Photoshop (PSD)
- Photoshop Large Document (PSB)
- Tagged Image File Format (TIFF)
- Joint Photographic Experts Group (JPEG)
- Portable Network Graphic (PNG)
- High Efficiency Image Format (HEIC)
- ON1 Photo format (ONPHOTO)

Photo RAW can export files in PSD, PSB, TIFF, JPEG, DNG and PNG format.

ON1 Photo RAW 2022 uses your camera manufacturer's raw format as the default format when editing your photos. Photo RAW's non-destructive editing capabilities let you view your raw files—or any other supported file type from the list above—in Browse, and work on them in the Edit module without having to create any intermediary files. There are no multiple versions of images cluttering up your directory; Photo RAW remembers the edits you've made to your photos and applies them non-destructively to your original.

This means is that there is no need to "open" the files to edit them; you just work with them as desired, and ON1 Photo RAW 2022 will remember your edits as you travel across the modules, even when you are

working with a layered photo. You'll only need to save them in a different form when you wish to export or share them in non-raw formats, or when you wish to work with the Resize module.

> **NOTE:** ON1 Photo RAW 2022 can also view and catalog most standard video formats inside the Browse module. While you cannot play or edit video from within Photo RAW, you can perform file management tasks and edit metadata. Double-clicking on a video file in Photo RAW will launch the default video player for your computer.

ON1 Photo RAW 2022 Modules

ON1 Photo RAW 2022 has three modules: Browse, Edit, and Resize. Each module focuses on one task, giving you access to just what you need to get that task done. Browse handles file-management operations, Edit performs non-destructive pixel editing—in a layered workflow, if you choose—and Resize is used to enlarge images, primarily for printing to large-format printers.

Browse is the default module. It is used to navigate through your drives and cloud services to find images, as well as to import photos and perform specialized image-combination tasks: assembling panoramas, creating high-dynamic range (HDR) images, creating focus-stacked images, and building time-lapse movies from a sequence of photos.

When you take an image from Browse to the Edit module, Photo RAW 2022 works in a non-destructive manner, preserving your edits as you work. When you return to Browse, you'll see your edits applied in all of the various views.

Within the Edit module are five tabs, Develop, Effects, Sky Swap AI, Portrait AI and Local Adjustments. Each tab has a specific area of functionality: Develop for basic editing, Effects for stylization, Sky Swap for replacing skies in an image, Portrait for retouching portraits, and Local Adjustments for targeted editing of specific areas in your images.

Opening an image in Resize is destructive. Because the end result is a new, scaled file, usually intended for printing, Resize creates a copy of the image (generally saved in the .PSD format) and saves that to the same directory as your original image.

THE MODULE SELECTOR

The Module Selector is on the right side of the screen, visible at all times. At the top of the selector are icons for Browse and Edit. Clicking on one of those icons will take you to that module.

When you are working in Browse, the selector will have five icons in the center that are intended for use when combining photos: Layers (which takes you into the Edit module), Pano, HDR, Focus and Time, for time-lapse. (For more on these functions, see "Combining Photos with Photo RAW" on page 172.)

At the bottom of the selector is the Resize icon, and icons for printing, sharing or exporting an image or group. (see "Output and Sharing" on page 191)
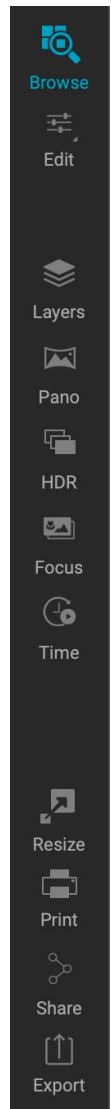
Using Photoshop Plugins with Photo RAW

ON1 Photo RAW 2022 has the capability to run many plugins created for use with Adobe Photoshop, even if you don't have Photoshop installed on your system. When you process an image in the Edit module, and want to run it through a plugin, you are creating a new layer in your image document.

To set up Photo RAW to use Photoshop plugins, you open Photo RAW's Preferences and click on the Plug-ins tab. There, you can open Photo RAW's default folder for Photoshop plugins and copy the plugins to that location, or you can select a secondary folder that contains plugin files, by clicking the Choose button. You'll have to restart Photo RAW for the plugins to become available; once active, you can open a photo in the plugin by choosing Filters from the Layers menu in the Edit module. Photo RAW will launch the plugin; once you're done, and the plugin returns the edited photo to Photo RAW, it will appear as a new layer, where you can apply any of the Edit module's functions.

To learn about working with the Layers feature in Photo RAW, see page 173.

WHICH PHOTOSHOP PLUGINS WORK WITH PHOTO RAW?

When checking to see if a Photoshop plugin is suitable for use in Photo RAW, note the following exceptions:

- Photo RAW does not support Photoshop automation plugins. That includes plugins that create layers or change the canvas size such as interpolation applications.
- It also does not support Photoshop panels.

Even without those exceptions, we cannot guarantee that all Photoshop plugins will work properly with ON1 Photo RAW. You should test each added plugin to make sure that it functions as intended. A current list of supported plugins can be found in the Help section of the ON1 website (https://on1help.zendesk.com).

Extras

ON1 Photo RAW 2022 supports a number of additional file types that can be used in various modules. These files are called Extras, and the file types include:

- Presets for use within the Edit module.
- Paper presets (type and size) for use within Resize.
- Backgrounds that can be imported and used with Photo RAW's Layers feature.
- Borders than can be imported and used in Layers and Effects.
- Textures that can be imported and used in Layers and Effects.
- Look-up tables (LUTs) for use with Effects' LUTs filter.
- Custom brush shapes, which are generally saved as black-and-white TIF files. Photo RAW can also import brush shapes saved in the Adobe Brush Preset format (.abr).
- Sun flares, which can be imported and used with Effects' Sun Flare filter.
- Watermarks, image files (transparent PNGs) that can be used with Export and Print.
- Skies, replacement skies for use with Photo RAW's Sky Swap AI feature in the Edit module.

ON1 includes a number of extras in the product when you install Photo RAW, and you can create your own, or add extras downloaded from the ON1 website. You can use the Extras Manager to import and manage your own extras, creating categories for each type, and deleting extras that you no longer want.

HOW TO IMPORT EXTRAS
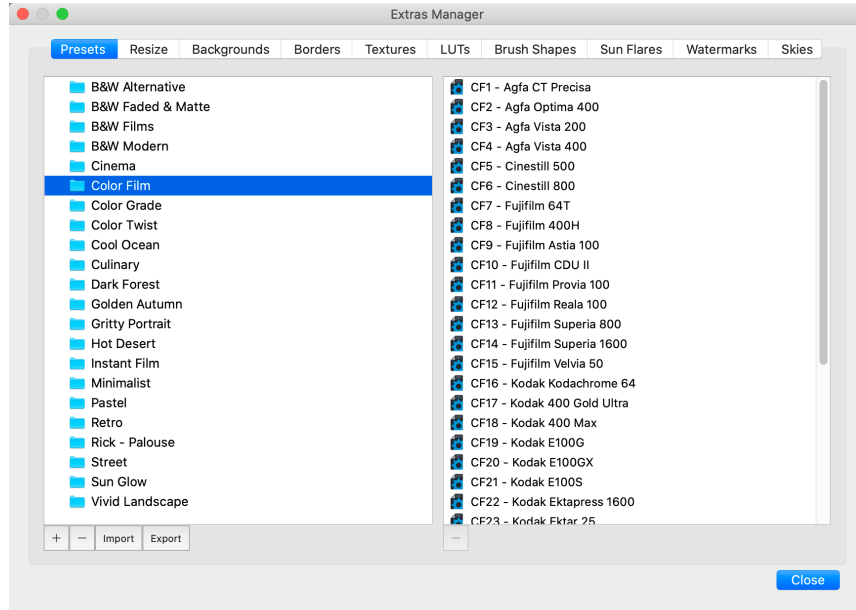
The Extras Manager is used to import (and remove) everything from presets to replacement skies, watermark files and more.

To import extras, choose Manage Extras from the File menu in Browse and Edit, then follow these steps:

1. Select the type of extras you wish to import from the list of tabs at the top. You can only import extras of one type at a time.

2. Click on the Import button in the footer of the left column. A dialog box will open; select the files to import. If you want to import an entire folder, open the folder, select the first file, then shift-click on the last file. Click Import when your selection is complete.

3. Select a category for your extras to live in. This is where you will be able to find it inside ON1 Photo RAW 2022. When importing presets, you can select from a preexisting category or create a new one (which will show up in the Presets list). For other extra types, the first time you import, you'll need to create a new category; after that, any time you import that type, you can choose that original category, or you can create another one.

When your extras have been imported, they will be displayed in the a appropriate Extras Manager category.

> **NOTE:** Most extra types mentioned here will have a corresponding Import button in their respective panes or windows. (For example, watermarks in the Export panel, or skies in the Sky Swap AI pane, and so on.) Clicking the Import button in these instances will open the Extras Manager. To import backgrounds and custom brushes, choose Manage Extras from the File menu.

Organizing presets

The Presets tab of the Extras Manager gives you additional options for working with large groups of presets inside Develop and Effects. When you are using the Presets tab, you'll see '+' and '-' buttons, which let you add or delete categories to the list of your presets.

You can also add subfolders to any of the Presets categories, which can help organize and manage large collections of presets. You can use drag-and-drop to move existing categories into another, or you can add a category subfolder to an existing category by clicking on the category and then clicking on the '+' button in the Extras Manager window. (When you are importing presets, Photo RAW gives you the opportunity to add presets to any category folder or subfolder.)

The Presets section of the Extras Manager will also let you export presets, for sharing with other users, or to save seldom used presets for archiving purposes. To export a complete category, click on the category in the list on the left side of the window and click on the Export button. This will export a folder that contains a single .ONpreset file, which includes all of the presets from that category. If you would like to export a single preset, click on the preset from the list on the right side of the window and click Export.

What type of images can I import as Extras?

Here is a breakdown of the different file types that can be used with the various extras categories:

- Backgrounds and textures may be JPEG, TIFF, or Photoshop files.
- Border files must have a large central area that is transparent, so only files that support transparency, such as PNG, can be imported as borders.
- LUTs can be in either .3DL or .CUBE format.
- For custom brushes, Photo RAW can import Photoshop-compatible brushes saved as black-and-white TIF files, or files saved in Photoshop's .abr file format.
- Sun flare files are usually JPEG files with a black background.

- Since most watermarks are overlays on top of an image, those files are usually PNGs with areas of transparency, although JPGs can also be used.
- Sky-replacement images may be any image file that Photo RAW can open, including JPEG, TIFF, or Photoshop files, although the most common types are JPG or TIFF. (See "Replacing Skies with Sky Swap AI" on page 155.)

> **NOTE:** If you download an .ONPreset or .ONP file (for use with Develop or Effects), you can simply double-click on it to install it. For more information, see the Presets section of this guide, starting on page 107.

USING EXTRAS WITH LAYERS IN THE EDIT MODULE

You can view and add extras to any open document in the Edit module by adding a new layer. Just click Layer > Add Layer from the File menu to open up a file browser window on-screen, where you can choose installed extras or any file from your computer. For more on this, see "Working with Layers" on page 173.

USING EXTRAS IN EFFECTS

You can access your imported borders, textures, LUTs and sun flares in Effects, as you would any of the default extras installed with Photo RAW. To use them follow these steps:

1. Open an image in Effects.
2. In the Filter Options pane, add the filter type you wish to work with from the Add Filter button (Borders, Textures, LUTs, or Sun Flare).
3. From the Category pop-up, select a category you have imported. User-added extras categories will appear at the bottom of the category list.
4. Choose an extra from the imported category.

> **NOTE:** Each filter will have a different method for choosing its extras. Ppecific information on the different filters can be found in the Effects section of this guide: page 141 (Borders), page 148 (LUTs), page 152 (Textures), and page 151 (Sun Flare). For information on working with custom brush shapes, see "Using Custom Brushes to Add Overlays To Photos" on page 170.

USING OTHER EXTRAS: WATERMARKS AND SKIES

Imported watermark files will be displayed in three locations: in the Logo section of the Watermark panes in Photo RAW's Export (see page 208) and Print (see page 222) functions, as well as in the My Extras tab when you add a new layer to a document in the Edit module (see page 173).

When you add replacement skies to the Extras Manager, each category that you added will be added to the Sky category list at the top of the Sky Swap AI pane. All skies in that category will be listed in the Skies pop-up menu under the Sky category menu.

HOW TO DELETE EXTRAS

You can remove imported extras using the Extras Manager. Follow these steps:

1. Open the Extras Manager in any module (File > Manage Extras).
2. Click on the extras type that contains the content you wish to remove. This will display categories within that type.
3. To delete an entire category, select in the left column and click on the Delete button in the footer of the left column.
4. To delete individual extras, select them in the right column and click on the Delete ('—' in the Presets tab) button in the footer of the right column.

Deleting extras is permanent and cannot be undone.

> **NOTE:** If you are using Photo RAW as a subscription, the Cloud Sync option will sync all of your imported extras between your licensed computers. See "Using ON1 Cloud Sync with Photo RAW" on page 63 for more about this service.

Customizing Photo RAW's Keyboard Shortcuts

You can customize ON1 Photo RAW 2022's hotkeys via the Keyboard Shortcuts window. This window lets you view and change the shortcuts for any tool, tool option, module, or menu item inside Photo RAW. You can assign shortcuts to menu items that don't yet have a shortcut, build multiple sets of shortcuts as preset styles, and create a summary of your shortcuts that can be viewed in any web browser.

To view or change Photo RAW's hotkeys, choose Keyboard Shortcuts from the Edit menu in any module. By default, Photo RAW's shortcuts will be displayed, organized hierarchically by the following groups:

- **Modules**, commands for switching between Photo RAW's different modules.

The Keyboard Shortcuts window displays a list of modifiable commands and operations in five distinct groups.

- **Develop**, for applying tone and color adjustments directly from the keyboard while you are working in the Edit module. (See "Adjusting Tone & Color settings via hotkeys" on page 71 for details on working with this feature.)

- **Tools**, for the 18 tools available in the Edit module.

- **Tool Options**, for the brush and mask viewing options available in any masking tool's Options Bar.

- **Menu**, which includes all of Photo RAW's menu items in each module.

You open each group by clicking on the triangle to the left of the group name, or you can use the search field at the top of the Keyboard Shortcuts window to search for a command in any of the groups (right).

Each command that has an assigned key will display that key in the Shortcut column. The Shortcut field will be empty for any command that doesn't have an assigned key, and any field with a grayed-out shortcut means that you cannot modify that command's keys.
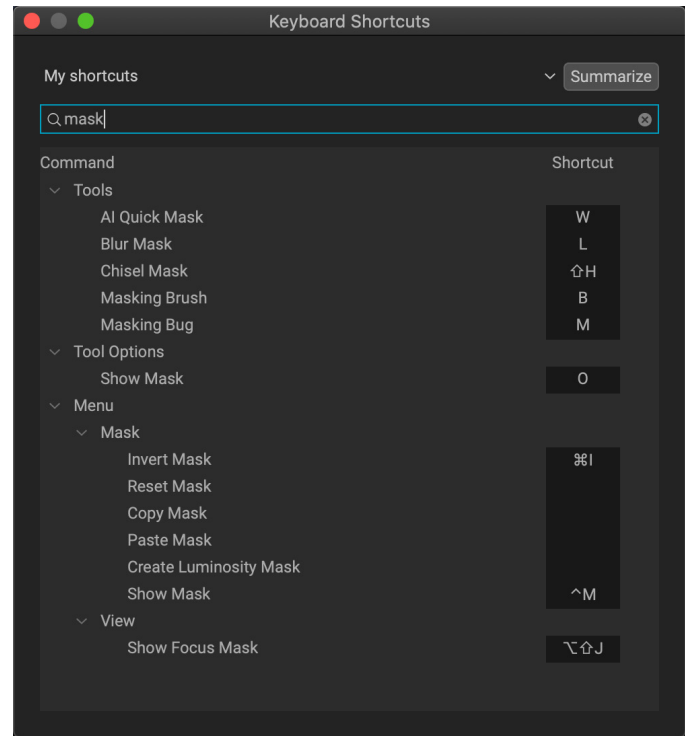
The search field at the top of the window lets you quickly find commands based on keywords.

> **NOTE:** Some keyboard shortcuts cannot be changed. These include menu commands used by the operating system (Cut, Copy, Paste), and the Browse module shortcut (G). Also, you can't use the Escape, Return/Enter, or Delete keys as a shortcut.

MODIFYING HOTKEYS

The Default preset style's hotkeys cannot be modified, but you can create your own set of shortcuts by double-clicking on any command you wish to add or change. You'll be asked if you want to create a new preset. Clicking Yes will let you name the new preset style, and Photo RAW will make a duplicate of the Default set.

At this point, you can change any existing hotkeys, or add your own to commands that don't have them, by double-clicking in the Shortcut field for that command. The field will be highlighted, and you can press the key or key combination you wish to use. If that key is used by another command, a dialog will inform you of that, and giving you the option of either keeping the existing hotkey/command combination, or changing it to the new command.
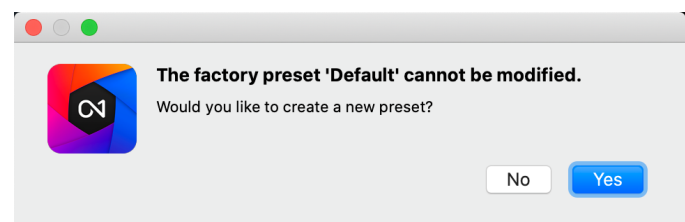
When you add or change a hotkey the first time, Photo RAW will prompt you to create a new preset style, which makes a duplicate of the Default preset. You can switch between preset styles—including back to Photo RAW's Default set—by using the pop-up menu at the top of the Keyboard Shortcuts window.
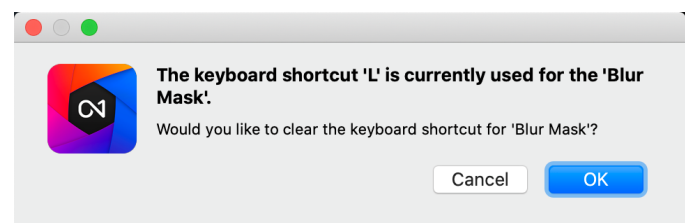
If you try to add a shortcut key combination that is already in use, Photo RAW will let you know, and give you the option of keeping (Cancel) or removing (OK) the other command/shortcut.

When you change a default shortcut to a new key combination—even for commands and options that didn't initially have a shortcut—a Reset arrow will appear to the right of the Shortcut field. Clicking the icon will reset the command to its original state, from the Default preset style.

To delete a shortcut, double-click in the Shortcut field and press the Delete key.

The Summarize button at the top of the Keyboard Shortcuts window will create an HTML table of the current set of hotkeys. You'll be asked where to save the file, and double-clicking on it will open that table in your default web browser, where you can view or print the list.

You can return to the original Photo RAW shortcuts by clicking on the pop-up menu at the top of the Keyboard Shortcuts window, and choosing Default from the list of preset styles. That menu can also be used to create a new preset or to delete an existing one that you created. The Default preset cannot be removed, however.

PART 2: ORGANIZING WITH BROWSE

ON1 Photo RAW 2022's Browse module is a powerful and incredibly fast photo browser and manager. It gives you one place to find, view and manage your images, no matter where they are located.

Browse is an ideal environment for performing quick sorts and edits after a shoot: You can import, then view, your photos immediately without having to wait for a long cataloging or preview-creation process. You can rate, add keywords and flags, create albums, and even remove photos, all from within Browse.

Browse also has a sophisticated indexing system, designed to let you get access to your favorite folders of images quickly; just add a folder to the My Catalogs pane, and it will index your photos in the background, giving you increased search capabilities and even faster access to your most important photos.

When using the ON1 Cloud Sync service (see for more), you can easily share a cataloged folder or album with other computers of yours (a laptop, for example) and any of your mobile devices.

Browse also lets you apply any editing presets from the Edit module directly to an image or group of images. You can copy edits made on one photo and paste them onto another, or even a group of photos. Some of Browse's key features:

- Find your photos fast, wherever they are: local or network drives and cloud-based services.
- Manage duplicates or similar photos (and more) quickly with the Smart Organize feature.
- Import your photos from your camera, memory card or other device.
- Add any metadata—from creator to keywords and GPS—quickly to a group of photos, and use metadata templates to apply often-used metadata information during the import process.
- Catalog important folders of photos, to get the fastest access to your most important photos across multiple sources, while still preserving your folder hierarchies and locations.
- View and cull photos from a shoot in the way that works best for you, in four different views: Grid, Filmstrip, Detail and Compare views. Use the Map view to see where you shot your photos, or add location information to photos without GPS metadata.
- Dual-display capability that lets you work more efficiently. See Grid view on one display, and Detail view on another, or use this mode to present photos on a TV or projector.
- Apply editing presets from the Edit module to a single image or a group of images, or sync existing edits from one image to a group.
- Build panoramas and high dynamic range (HDR) images directly from within Browse, and blend multiple photos at different focus distances to increase depth-of-field.
- Create flicker-free time-lapse videos from sequences of raw images.
- Connect your Nikon or Canon camera and capture photos directly, with full manual camera support, using tethered-shooting mode.
- Quickly find photos based on their creation date, or any combination of metadata information, including time of day, camera/lens type, file type and more.
- Create albums from a selection of photos, or use advanced searching methods to create "smart" albums that dynamically update based on metadata.
- Copy, move, delete and rename files.
- Sort, flag, rate or color code your images.
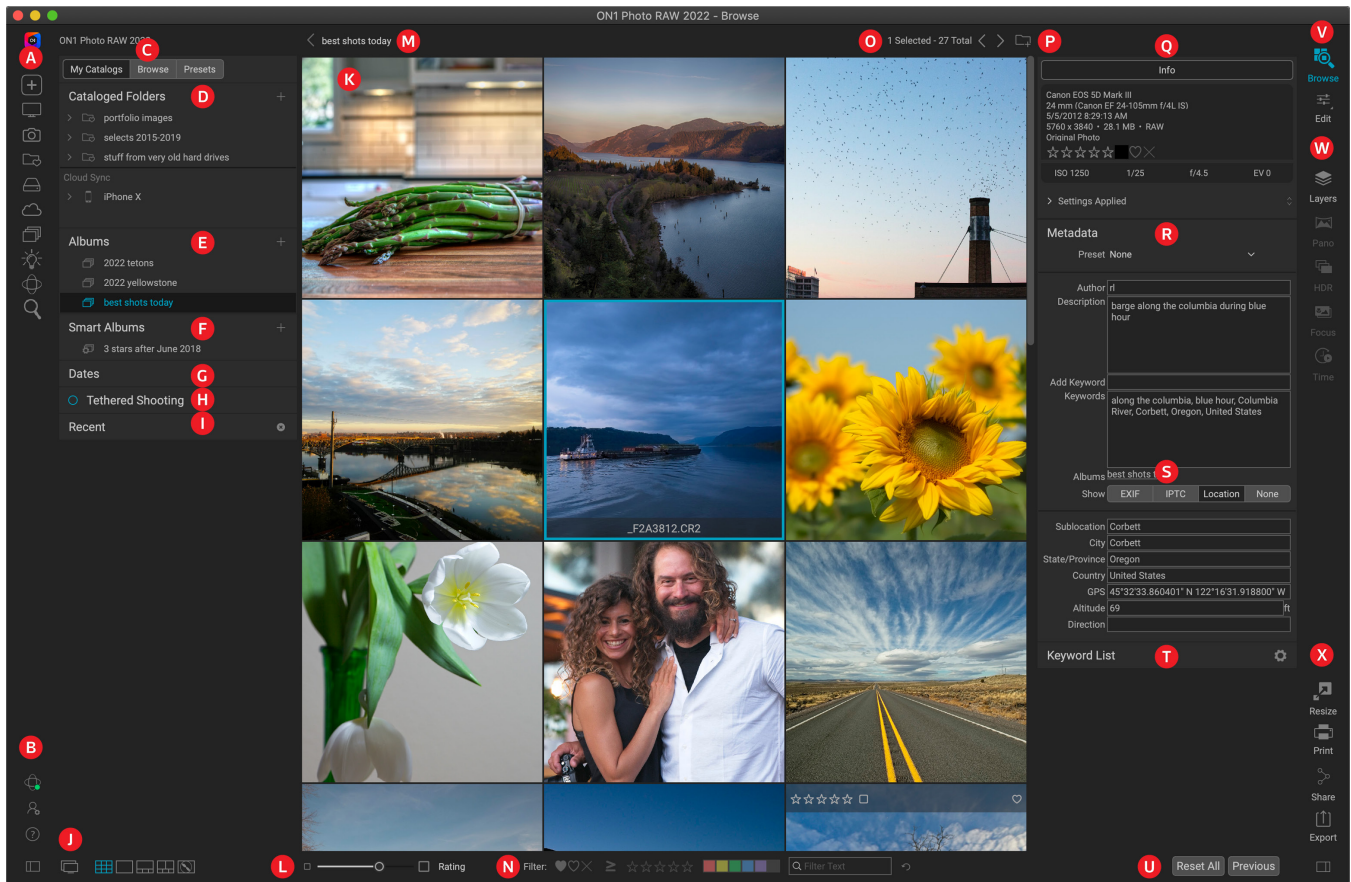
ON1 Browse Main Screen Overview

The Browse module has three main sections: the Catalogs/Browse/Presets panel on the left side of the screen, the Preview window in the center, and the Photo Info panel on the right side.

The main components of Browse module include:

A. **Shortcuts**: This palette contains shortcuts to the Getting Started, Smart Organize and Advanced Search windows, as well as to your most common photo storage locations. (See "Using Shortcuts" on page 32.)

B. **ON1 Cloud Sync/Preferences/Help/Panel icons**: Accesses the ON1 Cloud Sync status window (when available), the ON1 Learning Hub or Photo RAW's Preferences window. The icon at the bottom opens and closes the left panel. (See "Using ON1 Cloud Sync with Photo RAW" on page 63 for more on the syncing service.)

C. **My Catalogs/Browse/Presets Panels**: Switch between the cataloged folders panel, local drives and cloud sources, and Edit module presets by clicking on the tabs.

D. **Cataloged Folders/Local Drives Panes**: Displays your cataloged folders (shown) or local disks, favorite folders and cloud sources, depending upon which tab has been selected.

E. **Albums Pane**: This pane is for creating albums, also known as collections of images. Albums can be grouped into subfolders for easy organization.

F. **Smart Albums Pane**: This pane includes collections of dynamically built albums based on criteria set in the Advanced Search window.

G. **Dates Pane:** Search for photos based on the capture date.

H. **Tethered Shooting Pane:** This lets you connect your Nikon or Canon camera to your computer; you can capture images directly from the camera to ON1 Photo RAW.

I. **Recent Pane**: This keeps track of recently opened files and folders.

J. **View Selector**: (Icons from left) Open/close the Browse/Presets panel; toggle Dual Display Mode on and off; switch between Grid, Detail, Filmstrip, Compare and Map views.

K. **Preview**: The window where you can view your images in thumbnail or detail view.

L. **Thumbnail Size/Sort Options**: The slider adjusts the thumbnail size, while the Sort By pop-up adjusts sort order based on standard selection criteria, such as file name, date captured and more. (You can also create your own custom sort order.)

M. **Breadcrumbs**: This shows the path of the selected image or folder in the Preview area, displaying the number of files and folders you are viewing.

N. **Filter Panel:** Lets you filter the current Browse view based on likes, star ratings, color labels or any text associated with the images.

O. **Selection Information:** Lists the number of selected images out of the total number in the current view.

P. **Copy to My Catalogs:** Clicking this button lets you add the currently selected photos to any of your existing cataloged folders.

Q. **Info Pane**: This section will give you detailed metadata about your image when available. (Also displays Navigator and Histogram panes when in Filmstrip, Detail and Compare modes.)

R. **Metadata Pane**: This pane will show your metadata for the selected image.

S. **EXIF/IPTC/Location Info**: Displays additional detailed information about the selected file.

T. **Keyword List**: All keywords found in your image catalog.

U. **Reset All/Previous/Sync**: These buttons let you synchronize the edit settings of one image on another (or group). Reset All removes all edit adjustments made in Edit from the selected image or group of images. Previous will past the Edit module settings from the last edited photo onto the currently selected photo. When you have multiple photos selected, the Sync button will be visible; clicking this will synchronize the edits from the photo selected first, and onto the other photos in the selection.

V. **Module Selector**: Use this to switch to other modules inside ON1 Photo RAW 2022.

W. **Layers/Panorama/HDR/Focus/Time**: When multiple images are selected in Browse, use these buttons to open the images as separate layers in the Edit module, or to create panoramas, high dynamic range (HDR) or focus-stacked images. The Time button will build a time-lapse video from the selected images. (See "Combining Photos with Photo RAW" on page 172 for information on using these features.)

X. **Export/Print/Share**: Shortcuts for exporting (Resize), printing and sharing selected photos. The bottom icon will open and close the Info pane.

WORKFLOW BASICS IN BROWSE

ON1 Photo RAW 2022 provides a great deal of flexibility in how you wish to work with your photos. You can browse for existing photos in folders that are connected to your computer (including cloud services like Dropbox, Google Drive and Microsoft OneDrive). You can also import photos directly from your camera or other device. And, once you've found a photo (or photos) you wish to work on, moving to the Edit module is a single click away.

If you store your photo library in a specific location on an internal or external hard drive (or multiple drives), you can have Photo RAW index those folders. This process 'catalogs' the photos, reading their metadata and building previews, letting you navigate and access your photo library much more quickly than if you were to simply look at a random folder of images. Cataloging a folder doesn't move or change your photos; it just makes it easier for you to find and work with them inside Photo RAW.

Getting Started window

The first time you launch Photo RAW, Browse displays a Getting Started window, designed to help you get working quickly. This window has three options:
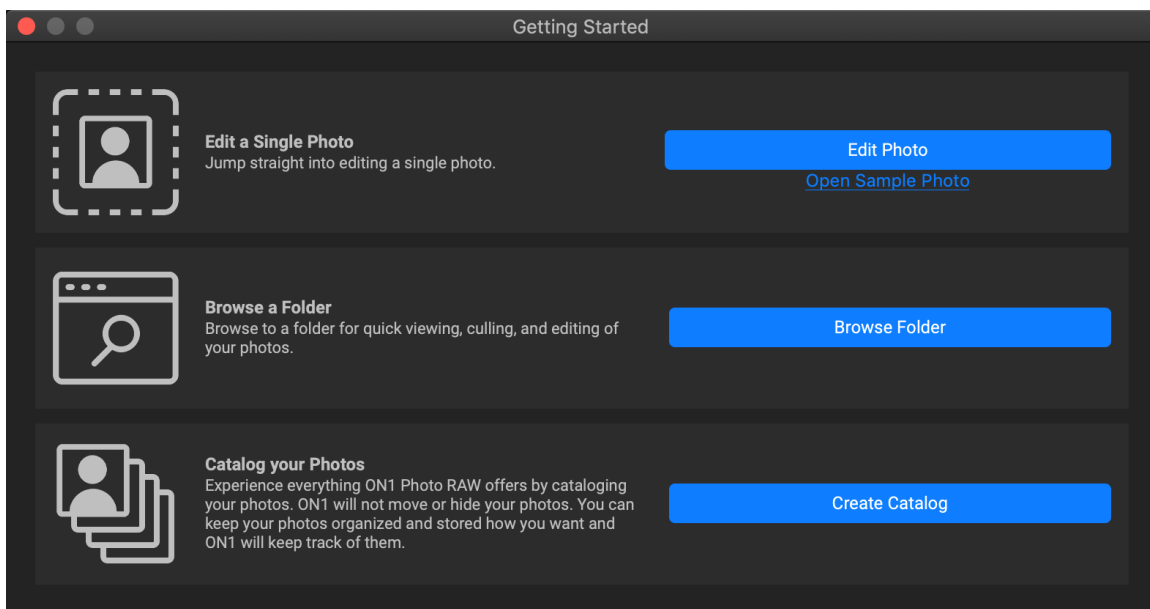
The Getting Started window is designed to help you get working quickly with ON1 Photo RAW 2022.

- **Edit a Single Photo:** clicking this button will give you the MacOS or Windows file-selection dialog, where you can navigate to a specific photo. Once you've chosen an image, Photo RAW will open that photo directly within the Edit module (starting with the Develop tab). You have access to all the editing tools, and when you're done editing, you'll be asked to save a copy of the edited version of your photo. (See "Working in the Edit Module" on page 70 for information on editing photos.)

- **Browse a Folder:** this button will open the file-selection dialog for your computer. There, you can navigate to a specific folder of photos. Clicking the Open button in that dialog will display that folder's photos in the Browse Preview area.

- **Catalog Your Photos:** clicking this button will let you choose a folder to be cataloged by Photo RAW. This folder (and any subfolders of photos within it) will be added to the My Catalogs pane. (See "Cataloged Folders" on page 30 for info on creating cataloged folders.)

The Getting Started window can be accessed at any time by clicking the '+' button in the Shortcuts section on the left side of the Browse window (see "Using Shortcuts" on page 32), or via the Help menu.

> **NOTE:** If you wish to use the full non-destructive editing capabilities of Photo RAW when working on your photos, do not use the Edit a Single Photo option. Instead, inside Browse, find the photo you wish to edit, select it, and click on the Edit module selector on the right side of the main window. (See "Using Photo RAW as a Raw Editor" on page 72 for more about non-destructive editing and why it might be important to your workflow.)

Working in the Preview Area

The Preview window is the largest part of the Browse workspace. Here, you can view folders of images (including all images synced via ON1 Cloud Sync) in either thumbnail or detail view, based on the folders, albums or filters you have chosen via the Browse panel. There are five main views in the Preview window:

- **Grid**, which displays a grid of thumbnails of your images. This view also displays folders, letting you go up and down a folder hierarchy quickly. You can also change the information displayed in each cell in the grid. *Shortcut key: G*
- **Photo (also known as Detail)**, which you get by double-clicking on a thumbnail. You can view this image in either 'fit to window' view, or can zoom in to see more detail. *Shortcut key: E*
- **Filmstrip**, which displays a strip of images from a folder or album at the bottom of the screen. The currently selected image displays in the preview area above the strip; use the arrow keys to move through the folder, or click on an image in the filmstrip to view it in the preview area. Similar to Detail view, the Filmstrip mode lets you view the current image in 'fit to window' and zoom views. *Shortcut key: F*
- **Compare**, which lets you view a group of photos in separate panes inside the preview area. You can zoom in on one or all of the selection, and lock the panning so that, as you move around one photo, the others move with it. Using Compare, you can quickly find the best images in a sequence, whether it be for composition, sharpness, facial expressions or more. *Shortcut key: C*
- **Map,** which can be used to display locations for photos that have GPS-based location data, or to search for locations that can then be applied to a photo or group of photos. *Shortcut key: M*

You can change the viewing mode between the different views by clicking on the view selector at the bottom of the window, or by using the shortcut keys listed above.

ALTERNATIVE VIEW MODES

In all of Browse's preview modes you have three options for viewing the contents of the current window:

- Photo RAW's default is a resizable, movable window.
- **Full Screen Mode**, which can be found in the Window menu, will expand the main window to fit the contents of the current display. The menu bar is hidden, but it can be viewed by

moving the mouse cursor to the top of the screen. This mode can be toggled on and off by pressing Option-Control-F (Windows) or Command-Control-F (MacOS).

- **Full Screen Preview**, also found in the Window menu, will display the currently selected photo full-screen, without any of the other interface elements. You can use the arrow keys on the keyboard to move from photo to photo. This option is helpful when you wish to view a selection of photos as large as possible without any distractions. (This mode can also be turned on by pressing Shift-F (MacOS only).)

Using Photo RAW to display slideshows

You can create on-the-fly, full-screen slideshows to display groups of photos inside Browse. Select a group of photos in the preview area, and choose Quick Slideshow from the Window menu. The slideshow will loop until you stop, by pressing the Esc key.

The Quick Slideshow submenu has options for the amount of time between slides and whether to display a fade transitions between slides or have no transition at all.
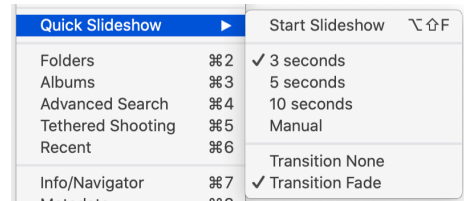
FAST PREVIEW MODE

Sometimes, when you get back to your computer after a shoot, you want to be able to go through a large number of photos quickly, looking for your best shots. ON1 Photo RAW's Fast Preview mode lets you do just that. Select Fast from the View menu's Preview Quality option, and you can jump from photo to photo quickly with minimal lag between shots.

If you are more concerned about color accuracy than speedy previews, select Accurate from the Preview Quality option in the View menu. ON1 Photo RAW will generate a full-resolution preview of your photo, using the photo's embedded color profile. This will take a few seconds, depending upon the size of the raw file you're working with, but you will get a better sense of the actual color in the photo.

Persistent Thumbnail Cache

When you go through a folder of photos, Browse caches thumbnails and preview images as well as extracted metadata. This will make it faster the second time a user browses a folder. It also stores user-added or adjusted metadata such as ratings, labels, keywords, captions, rotation and GPS data, among others. You can adjust the size of the cache and the storage location of the cache in the System tab in Photo RAW's Preferences window (see).

FOCUS AND CLIPPING VIEWS

When you're viewing photos with an eye toward selecting the best images in a group for editing, you generally want to look at issues with both exposure and sharpness. To help you with this, Photo RAW offers two viewing aids that are available in both the Browse and Edit modules: Clipping and Focus Mask overlays. In the Browse module, you can display these overlays in Detail, Filmstrip and Compare modes; in the Edit module, the overlays can be displayed in any of the tabs.

Clipping view displays pure white pixels with a bright red overlay, and pure black pixels with a bright blue overlay.

Clipping

Clipping occurs when the shadow and highlight tones in an image are suddenly cut off to completely white or black, rather than fading smoothly. (Large expanses of white pixels in a photo are often referred as 'blown' highlights, and can be distracting.) One of the benefits of shooting in raw format is that, while many photos will have areas of pure white or black when originally viewed on-screen, there is still recoverable data in the raw image. The Clipping overlay can help determine how big a problem you might have with a photo, and how easy (or difficult) it will be to fix.

To display the Clipping overlay temporarily, press the J key; to turn it on permanently, choose View > Show Clipping, or press Alt (Windows) or Option (Mac) J on your keyboard.

The Clipping view overlay displays areas that have either pure white or pure black in them. Areas with a blue overlay indicate pure black pixels, while the areas with a red overlay indicate pure white pixels.

Focus Mask

It can often be difficult to view the sharpness in a photo without zooming in to 100% or more, and if you have a lot of photos from a shoot, it can be a bit tedious to check focus at that level. Photo RAW's Focus Mask overlay can help winnow your shots down to the sharpest ones.

To turn on Focus Mask, choose View > Show Focus Mask, or press Shift-Alt/Option J. The sharpest areas in your image will be represented by a bright green overlay. As you move from photo to photo in a folder, you'll be able to tell whether you have an acceptable level of sharpness where you need it by the strength of the overlay. The mask will continue to be displayed even as you zoom in on a photo.

The Focus Mask option displays areas of sharpness with a bright green overlay.

WORKING IN GRID VIEW
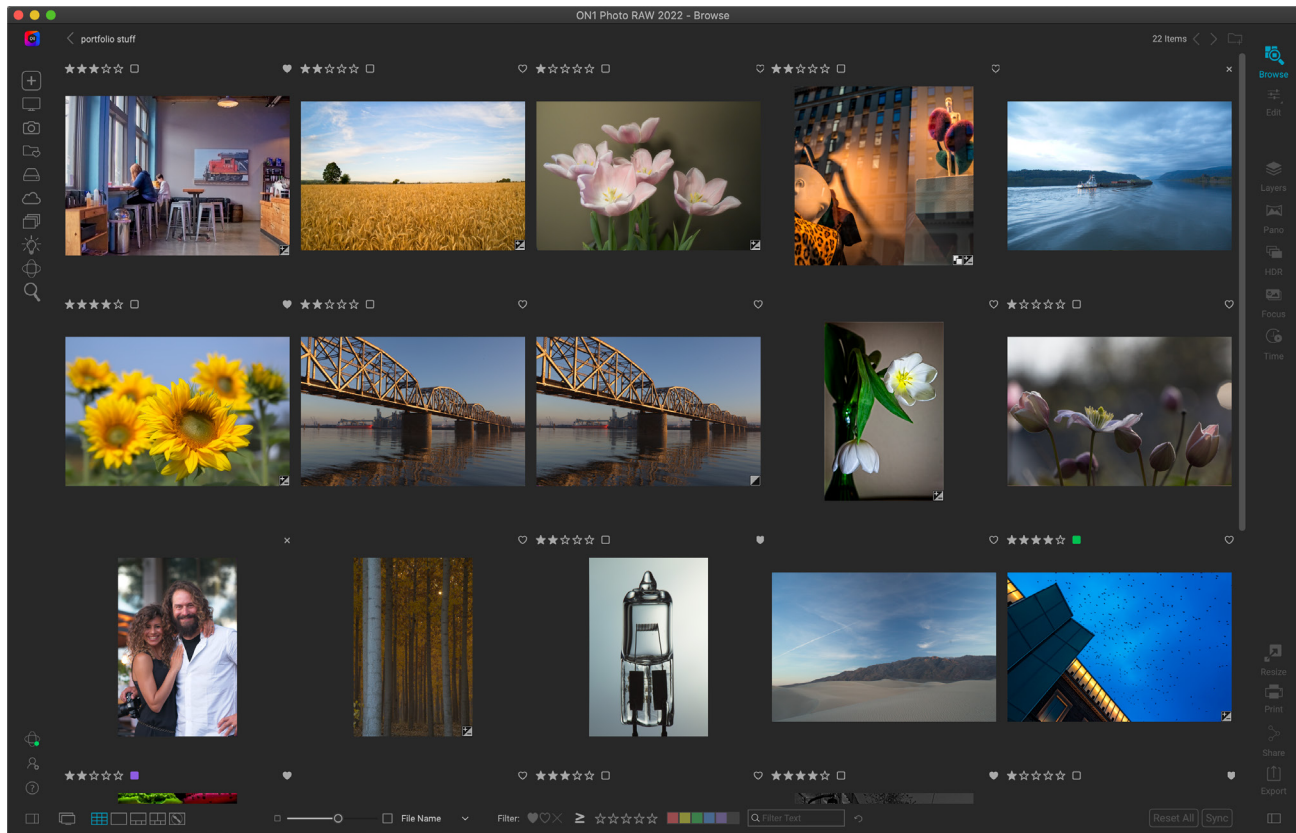
Grid view displays thumbnails of folders and images you have selected using the Folder or Albums panes. There are many operations you can perform from inside Grid view, including:

- Use the breadcrumbs to navigate (the '<' button goes up one folder).
- Select your image while in Grid view and open the photo in one of the editing tabs.
- Adjust thumbnail size using the on-screen slider or use "-/+" keys on your keyboard.
- Choose Show Subfolder Contents from the View menu when you want to view the contents of all subfolders (this only works when you are viewing cataloged folders).

Changing the thumbnail display options

You can change the display characteristics of each thumbnail cell in Grid view, via the Thumbnail View Options command, which is in Browse's View menu (and available when you right-click on any thumbnail in the grid). The Thumbnail View Options window has two sections, one for choosing the appearance of each thumbnail, the other for the information labels associated with each thumbnail.

In the Appearance section, the Size option sets the size of the top and bottom label text (Small or Large); the Fitting options let you set the image thumbnail so that all of the image is displayed
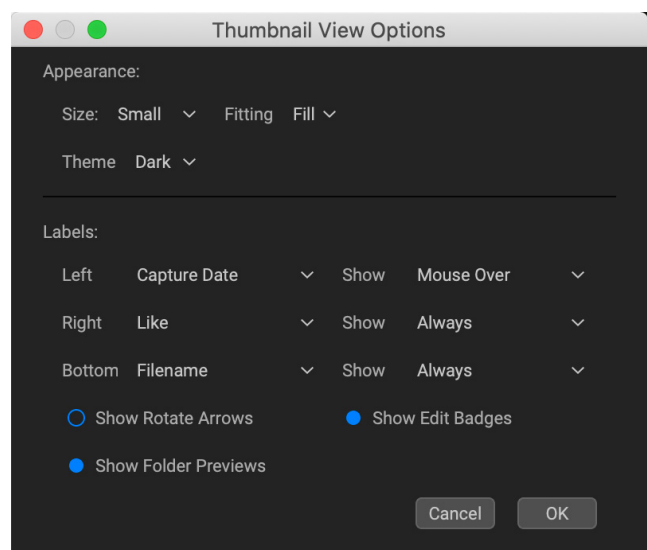
(Fit) or that it fills the frame of the thumbnail (Fill); and the Theme option lets you choose a Dark or Light appearance.

The Labels section lets you adjust the displayed data for the top (right and left sides) and the bottom labels in each thumbnail, and how each label is displayed—all the time, or only when you mouse over the thumbnail. You can also choose whether to display the rotation arrows and edit badges (which indicate that the image has been edited inside Photo RAW), as well as preview images for folders viewed inside Browse.

By default, the labels are set up to display the ratings and label information on the top left, the favorites state (like, empty, reject) on the top right, and the bottom displays the filename. You can however, set any of the three label locations to display any of more than 20 pieces of metadata, including filename, camera and lens information, exposure and ISO, capture date, ratings, image dimensions, and much more.

> **NOTE:** Most of the data fields that you can display in the Thumbnail View Options are visible in the Metadata panel. See "Metadata Pane" on page 38 for more information.

Sorting photos in Grid view

When working in Grid view, you can sort the thumbnails in a number of different ways by choosing the Sort By pop-up at the bottom of the window. The sorting options include: date captured or modified; color label; file name, type, or size; and rating.

You can also create a custom sort order by dragging thumbnails inside the grid window; click and drag the thumbnail so that the outline sits between two images.

Once you change the order of images this way, the Sort pop-up will change to Custom, and Photo RAW will remember the sort order for that folder until you change it. (Custom sorting also works—and the custom order remembered—when you're viewing albums.)

At the bottom of the Sort pop-up are settings for sorting the view in ascending or descending order; selecting one of the options will rearrange the view accordingly. If you have a custom sort order, choosing these options will change the view in the opposite order.
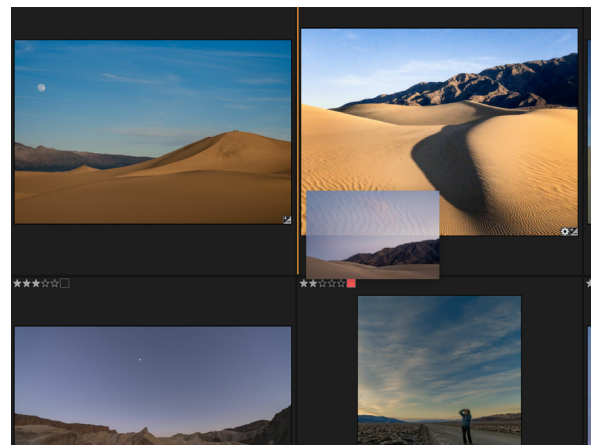
To reorder a photo in Grid view, drag it between the two photos where you want it to be placed.

Metadata viewing in Grid view

When you have the Photo panel open on the right side of the screen in Grid view, Photo RAW will display the Info pane at the top, which includes summary information about the selected photo, and the Metadata and Keyword panes, which let you view, edit and adjust many of the metadata fields for the current photo. When you have multiple items selected, the panes will display the information for the primary item in the selection (represented with a heavier outline in the grid); adding keywords or other editable metadata (author, location data or descriptions, for example) will apply those items to the entire selection. See page 37 for more on the Photo panel and its operation.

WORKING IN PHOTO (DETAIL) VIEW

In Detail view, you can zoom to 100% to check small details and sharpness in a photo, view its histogram, and even apply a preset, all without having to leave Browse.

In Photo view—also known as Detail view—you get a full-screen version of your photo. When you go to this view, your images will be displayed in Fit mode, showing the entire image. You can click on the image to zoom in to 100%. This is useful for judging small details and sharpness. Single-clicking on a image that is magnified will return back to Fit mode. You can click and drag a magnified image to look around. Your zoom mode is maintained as you move from image to image so you can compare the same spot in several frames.

When you view an image in Photo view and have the right-hand Photo panel open (as shown above), the Levels, Navigator (Nav) and Info panes will be visible as tabs at the top of the panel on the right. Clicking on the label will display that tab's data. In the Navigator pane you can reposition the preview and change the magnification amount. The Levels pane displays a composite histogram of the image being displayed. You can also view and adjust the rating and flag labels for the current image, either via the keyboard or via the Info pane. (See "The Photo Panel" on page 37 for details on the Nav, Levels and Info panes.)

When working in Photo view, you can move to the next image by using the arrow keys on your keyboard, and you can add author, keyword, description and other information via the Metadata and Keyword List panes.

WORKING IN FILMSTRIP VIEW
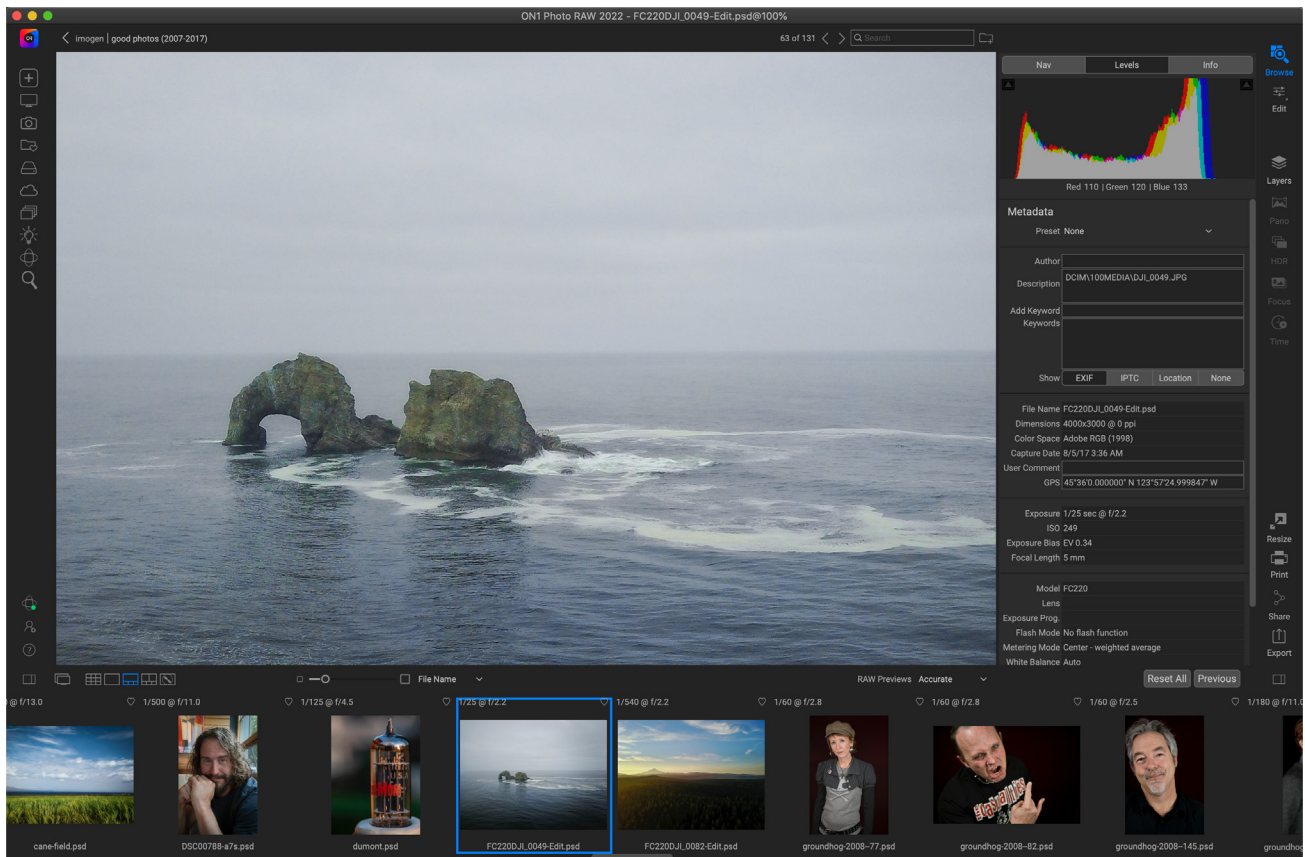
Filmstrip view is similar to Detail view, but displays a strip of photos from the current folder (or album). You can easily move to another photo by using the right and left arrow keys, or by scrolling and clicking with your mouse.

Filmstrip view presents a large version of your current image in the preview area, displaying other photos from the current view in a strip of thumbnails at the bottom of the screen. The photos are sorted by the current sort order, which can be changed via the Sort pop-up above the strip.

The current image is represented by a blue rectangle in the filmstrip, and you can use the arrow keys to move from photo to photo, or you can scroll with your mouse and click on a photo to display it in the preview. (You can also rate and flag images inside this view.)

When you view an image in Filmstrip view and have the right-hand Photo panel open (as shown above), the Levels, Navigator (Nav) and Info panes will be visible as tabs at the top of the panel on the right. Clicking on the label will display that tab's data. In the Navigator pane you can reposition the preview and change the magnification amount. The Levels pane displays a composite histogram of the image being displayed. You can also view and adjust the rating and flag labels for the current image, either via the keyboard or via the Info pane. (See for details on the Nav, Levels and Info panes.)

> **NOTE:** Filmstrip view is also available as a view in Photo RAW's Edit module; you can rate and flag photos there as well, using the same keyboard shortcuts.

WORKING IN COMPARE VIEW
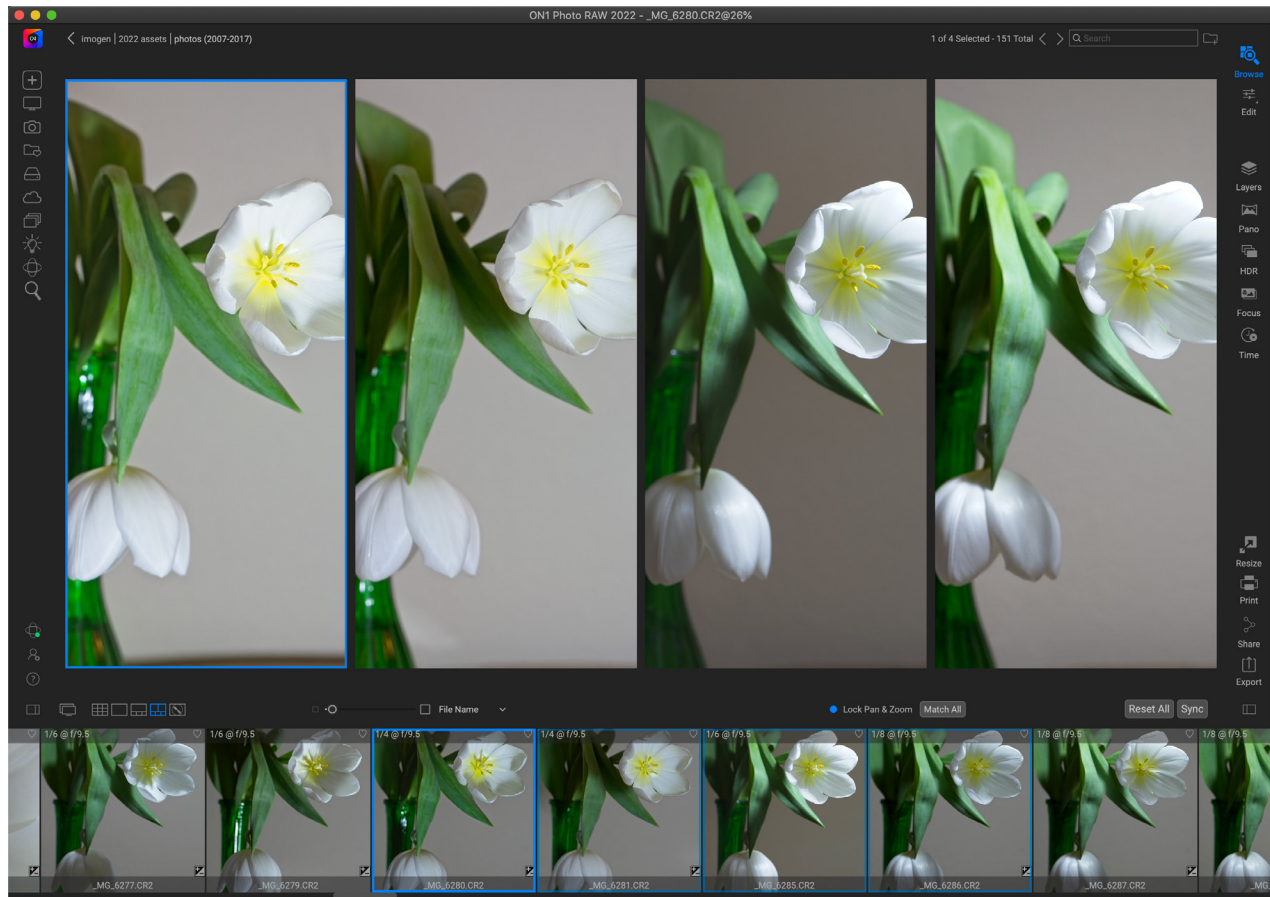
Compare mode displays selected photos as panes inside the preview area. The photo highlighted with a blue box is the current selection. Clicking in that pane will zoom the photo; if the Lock pan/zoom box is checked (above the filmstrip), then all of the compared photos will zoom with it.

Compare mode is for those times when you shoot a sequence of photos of the same type of scene—a portrait session, a wedding, a landscape series, for example—and wish to narrow that group down to find your best ones. With Compare, you can select a group of photos, view them side-by-side to check composition, zoom in simultaneously to check focus, and rate your favorites and remove the rejects.

To use Compare mode, you can choose one of two methods:

- Select a group of images you wish to compare in either Grid or Filmstrip view. To select a group of contiguous photos (ones next to each other in order), simply click on the first one you wish to compare, then hold down the Shift key and click on the last photo. If you want to add noncontiguous photos, click on the first photo, then use the Command (Mac) or Control (Windows) key and click on each subsequent photo you wish to compare. When you have your selected photos, press the C key, or click on the Compare icon in the View Selector at the bottom left of the Browse window.

- You can also select photos directly in Compare mode: press the C key or click on the Compare icon in the View Selector at the bottom left of the Browse window. In the strip at the bottom of the window, you can select the photos in the same manner as the first option, by clicking on the first photo in a sequence, and Shift-clicking on the last, or by using the Command (Mac) or Control (Windows) key to select noncontiguous photos from a group.

When you enter Compare, you will see your selected photos in a grid in the Preview area, fit to show the

entire photo. The currently selected photo will have a blue box around it, while the other items in the selection will have a light gray box around them. You can switch the primary selection by using the arrow keys on your keyboard, or by clicking inside the pane you wish to make primary.

If you click once inside the current selection, the photo will zoom in to show greater detail; if you click and hold the mouse button down, you can pan across or down your photo, so you can check for things like detail, sharpness or facial expressions. (Clicking a second time inside the pane will reduce the photo to fit all of it in the pane.)

To see the detail across the group of selected photos, click on the Lock pan/zoom dot above the filmstrip. Now, when you click on an area inside the primary photo, all of the photos will zoom simultaneously to the same location of your click. And, if you click and drag inside the primary photo, all of the selected photos will pan along with the primary. To pan one photo—which can be useful if the field of view was different than the rest—click on that photo to make it the primary selection, then hold down the Shift key and click and drag inside that pane. If you do this and wish to get back to the original zoom position, click on the Sync button next to the Lock pan/zoom setting, and it will reset the zoom view to the same place in each compared photo.

Use the spacebar if at you want to zoom between fit and 100% on the selected photo in the grid. Toggling the spacebar between views does not "lock" and will not sync with other photos even if Lock is turned on.

If you wish to remove a photo from the group, select it (by clicking on it or by pressing the left or right arrow keys) and press the / (slash) key on your keyboard. The photo will be removed from the Compare window, and the remaining photos will resize to best fill the available space in the window. (You can also add additional photos to the Compare window by using the selection techniques mentioned above.)

Zooming into a photo, and panning to the common areas of concern, you can easily determine which photo is sharp enough for your needs.

When using Compare, you can rate or flag a photo, apply a preset and add other metadata. These functions will only be applied to the primary selected photo (outlined in blue). There are two exceptions:

- Using the Sync settings button on the far right side of the Browse window, underneath the Info pane. Clicking on that will sync all of the Edit settings between the primary selection and all of the items being compared.

- Using the Create Album or Add to Album commands from the Albums menu: this adds all of the currently selected photos to either the new album (when you check the Add Selected Items button) or to the chosen album. This feature can be helpful when you have a group of images that you would like to keep for a client or to further segment a series.

WORKING IN MAP VIEW
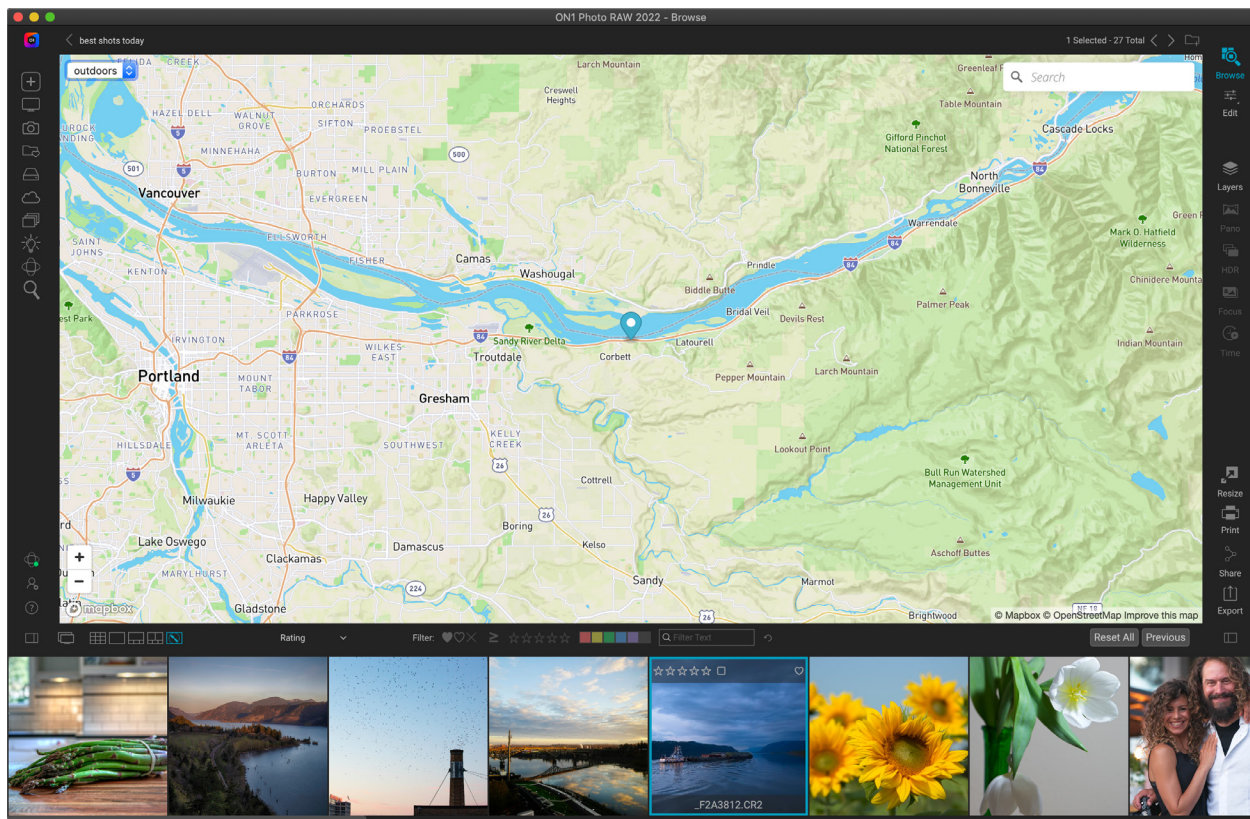
Photo RAW's Map view can display the coordinates of a selected photo, or let you add GPS coordinates by clicking specific places on a map.

Photo RAW's Map view provides a simple mechanism to add GPS information to a photo, by searching for a place on a web-based map, or to view the location of a photo that already has location information embedded in its metadata. An internet connection is required to add or view map data.

The Map display has three controls: the buttons in the upper left corner of the map, to switch between Street, Satellite and Outdoors (topographic) views; a search area, which lets you look for a place (cities, counties, roads); and the controls on the lower left, which let you zoom in or out of the current map view. To move around the current view, click and drag inside the window. The filmstrip displays other photos in the current folder. To move between photos you can use the arrow keys, or you can use the mouse to select a new photo.

To view the location of any GPS-tagged photo on a map, select the photo and click on the Map view icon at the bottom of the main Browse window.

To add GPS data to a photo, select a photo or group of photos and click on the Map view icon at the bottom of the screen. There you can search for a location via the search bar. Once you have the desired area, right-click on the map to add a location for the photo (or photos) in that spot. If the position is correct, click inside the pop-up box to set the pin.

If you would like to choose a different point instead, right-click in another location.
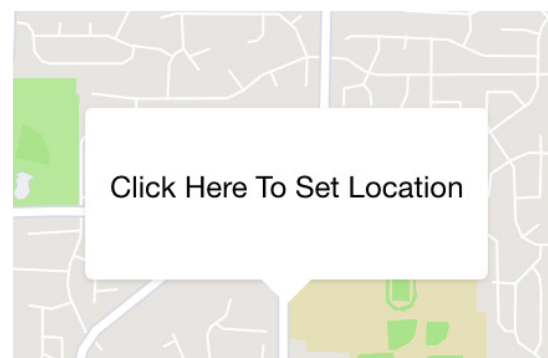
Right-clicking on a spot on the map will generate this pop-up. To confirm the location, click in the box; otherwise, you can right-click elsewhere to choose a different location.

Once added, Photo RAW will enter that position in the GPS field of the Metadata panel.

Photo RAW can also look up standard location information — city, state, country — from the GPS coordinates in a photo, and populate that information in the Location tab of the Metadata pane. To do this, click on the photos you wish to update and choose Set Location from GPS Coordinates from the Photo menu. (See "Metadata Pane" on page 38 for more information.)

Show	EXIF	IPTC	Location	None
Sublocation				
City	Moran			
State/Province	Wyoming			
Country	United States			
GPS	43°50'7.620000" N 110°25'25.280001" W			
Altitude	6915			
Direction	North			

My Catalogs, Browse and Presets Panels

On the left side of the Browse window are three tabs, My Catalogs, Browse and Presets. My Catalogs and Browse are designed to let you organize and find your photos quickly and easily, while the Presets panel lets you apply Edit module presets to your photos directly in the Browse module. (See "Applying Edit Module Presets in Browse" on page 58.) To move between the panels, click on the appropriate tab at the top of the panel. You can hide the left panel by clicking on the Show/Hide Panel icons at the bottom left and right sides of the panel. (Pressing the Tab key will show and hide both panels simultaneously.)

DIFFERENCES BETWEEN MY CATALOGS AND BROWSE TABS

The top panes in the My Catalogs and Browse panels contain different views of your folders and other sources. The My Catalogs pane lists all of your cataloged folders and your registered ON1 Cloud Sync devices. The Browse panel includes a Favorites pane, where you can add and access frequently visited folders, as well as a list of your local drives and cloud storage services.
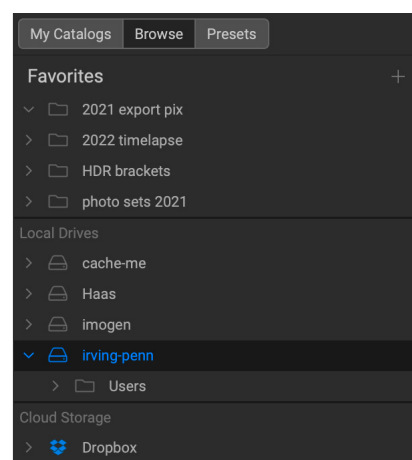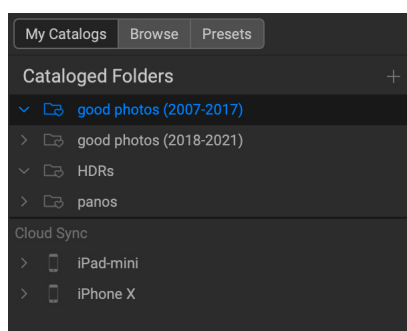
The My Catalogs view (above left) displays your cataloged folders and ON1 Cloud Sync devices you have registered, while the Browse view (above right) displays folders designated as Favorites (for quick access), attached local drives and any cloud storage services you have installed on your computer.

Other than that primary difference, both My Catalogs and Browse share a number of the same panes used to provide file-related tasks: Albums, Smart Albums, Dates, and Recent. A fifth pane, Tethered Shooting, is used to capture images from select Nikon or Canon cameras directly to your computer via a USB connection.

When using either panel, these five panes remain identical.

> **NOTE:** Earlier versions of ON1 Photo RAW combined the Cataloged Folders and Local Drives tabs into a single Browse panel. If you prefer that arrangement, check the Legacy Browse tab option in the General Preferences screen. (See "General Settings" on page 244.)

Navigating Sources

To view the contents of any folder in the Cataloged Folders or Local Drives panes, click on the triangle next to the folder name. This will display the photos and subfolders within the selected folder inside the Preview area. To view the contents of a subfolder, either click on the subfolder inside the Folders pane, or double-click on it in the Preview area. (You can use the breadcrumbs bar at the top of the Preview area to navigate back to the top of your folder system.)

> **TIP:** Any pane in Photo RAW can be collapsed by clicking in the pane's title bar; a Hide/Show link is visible when you move your cursor over the title bar, but the entire title bar is clickable.

CATALOGED FOLDERS

A cataloged folder is a shortcut for your favorite or most-used folders of photos. A folder designated as cataloged is cached in the background to improve the speed of loading those folders (and any subfolders) and their photos. Cataloged folders are ideal for portfolios, your favorite photos, or for your primary library of photos. Cataloged folders are necessary when using the Advanced Search feature to search for photos across multiple folders.

You can make any available folder a cataloged folder by clicking on the '+' button at the top of the Cataloged Folders pane; by right-clicking on a folder in the Preview area of the Browse panel and choosing Make Cataloged Folder from the pop-up menu; or by choosing Add Cataloged Folder from the File menu. The cataloging process is designed to work in the background, so it doesn't affect other work you do in any Photo RAW module. (You'll see a small progress indicator to the right of the folder as this process happens.)

When you catalog a folder, you will be prompted to choose the size of the previews that are generated during the cataloging process, and whether you wish to publish the folder to ON1 Cloud Sync. The three thumbnail options are:
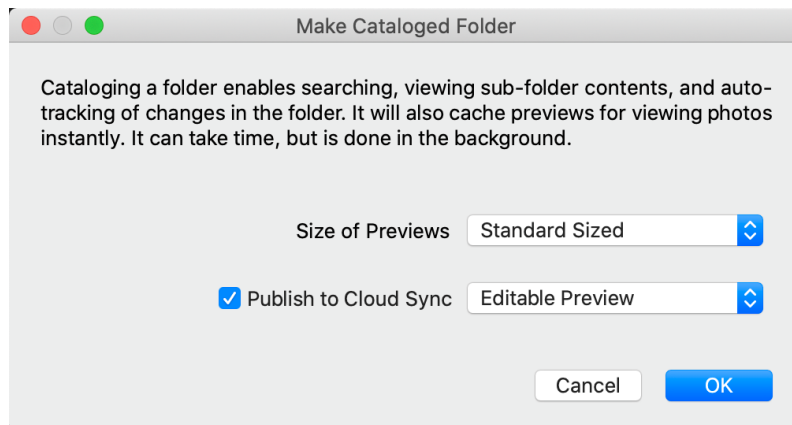
- **Standard,** which extracts the image metadata and EXIF thumbnail and creates a high-quality thumbnail and a fit-screen-sized preview.
- **Medium,** which extracts metadata, EXIF thumbnail and creates a high-quality thumbnail.
- **Minimal,** which extracts metadata and the EXIF thumbnail only.

For most purposes, you'll want to choose the default preview size, Standard. If, however, you are working with a system that has disk space restrictions, or have a network connection to your cataloged folder, choose either Medium or Minimal. (You can change the preview size later by right-clicking on the folder in the My Catalogs list and selecting the Preview Size option.)

If you would like to publish the folder to ON1 Cloud Sync, click the box and choose either Editable Preview or Originals from the pop-up menu. The Preview files are editable versions of your original photos, but are a fraction of the size. Which option you choose will depend upon your intent, and your ON1 Cloud Sync storage availability. See page 63 for more detailed information about the sync service.

A cataloged folder that has been published to ON1 Cloud Sync will display the Cloud Sync icon next to the folder name.

To remove a cataloged folder, right-click on the folder in the pane and choose Remove Cataloged Folder. To unpublish it from ON1 Cloud Sync, right-click the folder and choose Unpublish from ON1 Cloud Sync.

Adding photos to existing cataloged folders

You can add photos from any location inside Browse to an existing cataloged folder via the Copy to My Catalogs option. To use this feature, you must already have at least one cataloged folder. Then, when working in Browse, select the photo or photos you wish to add, and choose Copy to My Catalogs from the File menu, or via the folder icon (with a '+' button) to the right of the search bar at the top of the Browse window. (You can also right-click on a photo and choose Copy to My Catalogs from the pop-up menu.)

Inside the Copy to My Catalogs dialog box, you can choose which cataloged folder you wish to copy the photos, can add them to a new subfolder, and choose whether to move the photos or copy them. If you are copying to a folder that has been published with ON1 Cloud Sync, those photos will automatically be synced to the cloud.

Moving the files is only available when you are moving the photos to a new location on the same drive; otherwise, a copy of the file is made in the new location.
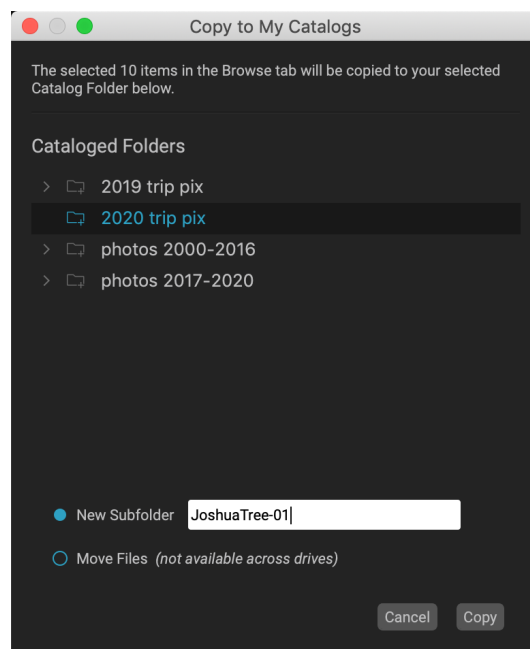
The Copy to My Catalogs dialog box lets you copy or move selected photos into your existing cataloged folders.

FAVORITES

Photo RAW's cataloged folder feature is useful for keeping your primary photo library organized, but there might be times when you have a group of folders that you frequently access, but that you do not wish to have cataloged. (One common instance might be a folder where you export temporary images for social media or other uses.) In these cases, the Favorite folders option can be helpful. Any folder you designate as a Favorite will appear at the top of the Browse tab.
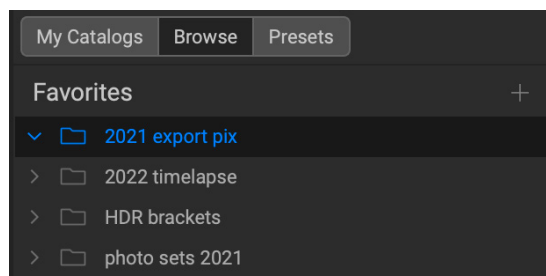
The Browse panel's Favorites pane lets you add frequently accessed folders that might be used for temporary or other applications.

To add a folder to the Favorites pane, you can click the '+' button in the Favorites pane. You'll get your system's file/folder selection window. Navigate to the folder you wish to add, then click Open. Alternatively, you can navigate to your chosen folder in Browse and drag the folder onto the '+' icon in the pane, or right-click on the folder and choose Add to Favorites from the pop-up menu.

LOCAL DRIVES

Browse automatically recognizes any disk (volume) inside or attached to your computer. This includes internal and external hard drives, optical drives, thumb drives, digital camera memory cards, digital cameras, any devices that support USB Mass Storage, and network-attached services (including mapped volumes on Windows).

Disks appear in the Local Drives pane below the Favorites section, with a hard drive icon next to them. Keep in mind that some disks, like optical drives, are often read-only. You will be able to view a copy of a photo, but will be prompted to save the image to a new location if you wish to edit it.

Cloud storage services

Browse supports cloud storage services from Dropbox, Google Drive, and Microsoft OneDrive. These services—when installed on your computer and other devices—keep local copies of your images on your computer, and Browse finds and monitors these locations automatically. If you edit an image stored in one of these locations they are automatically updated to the cloud.

During the installation process, ON1 Photo RAW 2022 automatically looks for the default installation locations for these services. If you do not have one of these services installed, or you have it installed to a non-standard location you will be asked to install or locate the folder when you click on the source. You can hide services you don't use in the Services tab in Photo RAW's Preferences (see page 248).

USING SHORTCUTS

The Shortcuts selector on the left side of the Browse panel is a list of icons designed to give you quick access to a number of commonly used system destinations or Browse functions. From top to bottom, the icons represent the Getting Started window, your Desktop, your Pictures folder, cataloged folders, local drives, cloud sources, albums, the Smart Organize window, ON1 Cloud Sync devices, and the Advanced Search window. Clicking on one of the icons will either display the shortcut's contents in the Preview window (Desktop, Pictures, Cataloged Folders, Local Drives, Cloud Services, Albums, Cloud Sync), or will open a specific function window in Photo RAW (Getting Started, Smart Organize, Advanced Search).

⊞	Getting Started window
🖵	Desktop
📷	Pictures
🗀	Cataloged Folders
🖴	Local Drives
☁	Cloud Services
🗗	Albums
💡	Smart Organize window
🜨	ON1 Cloud Sync
🔍	Advanced Search

By default, the Pictures shortcut uses your My Pictures folder (Windows) or Pictures (Mac). You can change the default location in the General section of the Preferences window (see "General Settings" on page 244).
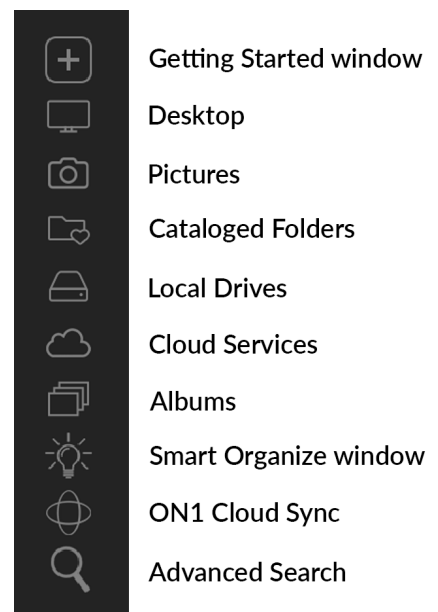
Shortcuts can be useful when you have the right panel hidden to maximize viewing in the Preview window.

ALBUMS PANE

ON1 Photo RAW 2022's Albums feature lets you organize or keep track of photos on a project, event or even a broader category like a portfolio. Albums are created by selecting images manually and adding them to a new (or existing album) by dragging and dropping photos onto the pane. You can nest albums together to help manage your collections, and all albums created can be published to ON1 Cloud Sync, which are indicated by the Cloud Sync icon to the right of the album name. (Any albums created on other ON1 Cloud Sync devices will be displayed in the Albums pane on all of your connected computers.)

Creating an album

Click the '+' icon in the pane and choose Create Album… from the pop-up menu. You can also create an album by selecting photos and dragging them onto the '+' icon in the Albums pane.

The New Album dialog box gives you options for adding an album name, and whether you wish to add the selected photos to the new album. If you would like to publish the album to the ON1 Cloud, click the box and choose either Editable Preview or Originals from the pop-up menu. Which option you choose will depend upon your intent, and your storage availability. See for more detailed information about ON1 Cloud Sync.
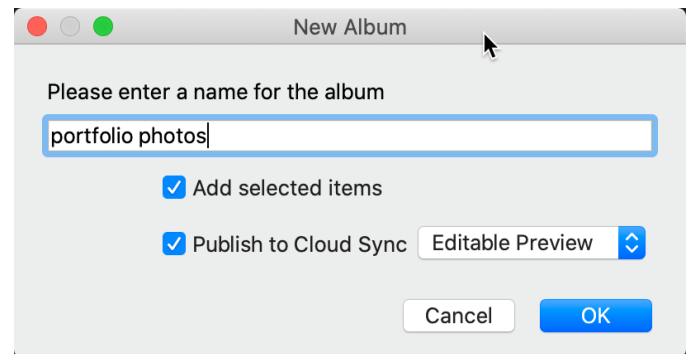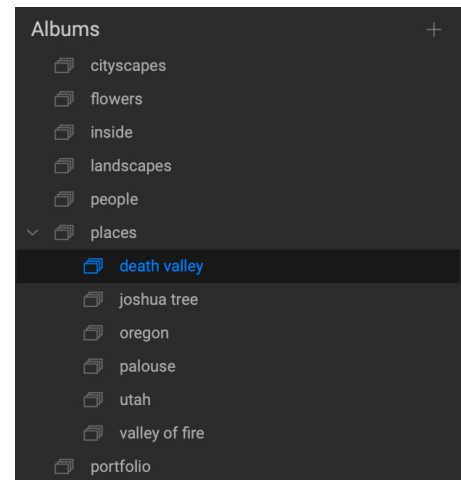
Adding photos to an existing album

There are multiple ways to add photos:

- Dragging and dropping a photo on the album name.
- Selecting a photo or group of photos, right-clicking on the photo and choosing Add to Album from the pop-up menu.
- Choosing Album > Add to Album and picking the destination album from the menu.
- You can also copy a photo and paste it into an album: click on a photo, choose Edit > Copy, then click on the album in the Albums pane, and choose Edit > Paste.

Removing photos from an album

To remove a photo (or photos) from an album, select them in the album, then choose Remove from Album from the Album menu, or right-click on the photo and choose Remove from Album from the pop-up menu. (You can also select a photo and press Shift-Delete.)

Delete an album

To delete an album, right-click on the album name and choose Delete.

Publishing and unpublishing an album from ON1 Cloud Sync

You can publish any existing album to ON1 Cloud Sync by right-clicking on the album name and choosing Publish to ON1 Cloud Sync. Right-clicking and choosing Unpublish from ON1 Cloud Sync will remove that album from your synced devices, but leave it on the device from which it was originally shared.

> **NOTE:** ON1 Cloud Sync albums can only be unpublished from the device that they were created on, but you can delete any published album from any ON1 Cloud Sync device. Doing this will remove that album from all of your devices. See "Using ON1 Cloud Sync with Photo RAW" on page 63 for more detail.

Changing the album thumbnail preview

To change the preview thumbnail of a nested album, double-click on the album name. Select a photo you would like to use for the preview, right-click on it and choose Set Album Preview from the pop-up menu.

Nesting albums

To create a set of nested albums, first create a blank album by clicking on the + icon in the Albums pane. You can easily add sub-albums to that new master album set by dragging and dropping the desired albums onto the new one in the Albums pane. When you click on the master album, Browse will display the albums that are part of that collection in the Preview area in a folder-style view. Double-clicking on

When you click on a nested album set, Browse displays the sub-albums. Double-clicking on a sub-album will open that album. If you wish to view all of the images in a nested album set, click the Show Subfolder Contents button from the View menu.

an album icon will display the contents of that album. To view all the images in a master album set, choose Show Subfolder Contents from the View menu,.

To move a sub-album from a master album to the top Albums level, drag and drop it out of the master, or right-click on the sub-album name and choose Move to Top.

If you drag an album onto an existing album that already contains images, you will see the top-level album's images at the root level, along with any sub-albums.

SMART ALBUMS

Smart albums are a dynamic album type that created from the results of a custom search operation built within the Advanced Search window (see "Finding and Filtering Images with Advanced Search" on page 47). When you use Advanced Search to create a filtered set of photos in your collection, such as "all photos that have been rated three stars or greater after June 2018," you can save that search as a smart album, and, when you click on the album, Photo RAW will perform that search in real time.

You can edit, rename or delete smart albums by right-clicking on the album name. The Edit option reopens a version of the Advanced Search window, letting you change the criteria for that smart album.
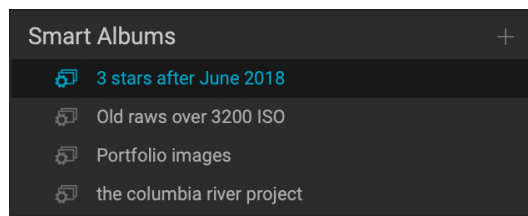
> **NOTE:** Nested albums and smart albums cannot be published to Cloud Sync.

DATES PANE

Photo RAW's Dates pane offers a quick way to look for cataloged images based on when they were taken. Using a simple timeline interface, you can drill down into your photo library by year, month and day. It makes searching for things like birthday and holiday photos a snap.

Opening the Dates pane, you'll see a list of years, with the current year at the top (only years that have photos taken during them will be present in the list). Clicking on a year will show you all of the photos taken during that year. Clicking on the triangle to the left of the year will display a list of all the months that have photos in them, and you can keep drilling down to the day level. Drilling down to any level in the pane—year, month, day—will show all photos taken during that period.

The Dates pane works only with cataloged folders.
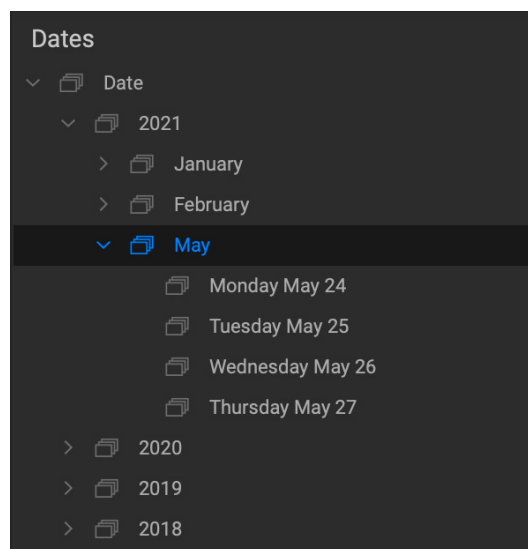
TETHERED SHOOTING

The Tethered Shooting pane lets you remotely control many Nikon and Canon cameras connected to your computer via USB, and capture images from the camera to your computer. Tethered shooting is used for shooting and saving images in a studio setting, displaying your images immediately on your computer's display. It is an excellent way to make adjustments to lighting and composition in the studio.
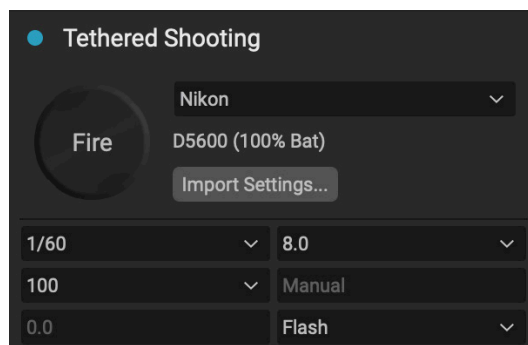
To get started with tethered shooting, connect your camera to your computer with the appropriate USB cable (your camera's manual should have information on the cable required, if the camera didn't come with one). Turn the camera on, then, in the Tethered Shooting pane, turn the pane on by clicking the button to the left of the pane's name.

Photo RAW will search for a connected camera and, if found, it will open Photo RAW's Import window. In the panel on the right side of that window, you can choose a number of options for saving your tethered shots, including file name and location, metadata, any Develop or Effects settings, and time adjustments. (See "Importing Photos into Browse" on page 42 for an explanation of panes in the Import window.)

Once you have chosen your tethered import settings, click the Start Shooting button at the bottom right of the Import window, which will close the window. The Tethered Shooting pane will now have the model of your camera selected, with the current shot settings in the table at the bottom of the pane. The settings are, from left to right and top to bottom, shutter speed, aperture, ISO, camera shooting mode (Manual, Aperture/Shutter Priority), exposure compensation, and white balance. Any setting that has a drop-down will let you change that setting.

Clicking the Fire button in the pane will take a shot with the current camera settings, and will save it to the location you chose in the Import Settings window. If you're in Grid View, the image will appear at the beginning of the end of the thumbnail grid, depending upon how your sort order is set up. If you're in Detail or Filmstrip view, the tethered image will appear in the Preview area.

Turning Tethered Shooting on will present you with a variation of Photo RAW's Import window. In the right pane of this window, you can set the file characteristics for tethered shots.

When you are finished with a shoot, turn the Tethered Shooting pane off by clicking the button next to the pane's title, turn your camera off, and disconnect it from your computer.

> **NOTE:** ON1 Photo RAW 2022's Tethered Shooting feature currently supports most Canon and Nikon digital SLR cameras. Check this page ON1's support website (on1help.zendesk.com) for a list of supported cameras.

RECENT

The Recent pane keeps track of recently opened files browsed folders. Files are listed in order of last opened. You can access your most recent files in this pane by clicking on the one you want and it will appear in your main preview window.

You can clear the recent list by pressing the 'x' icon in the title bar.
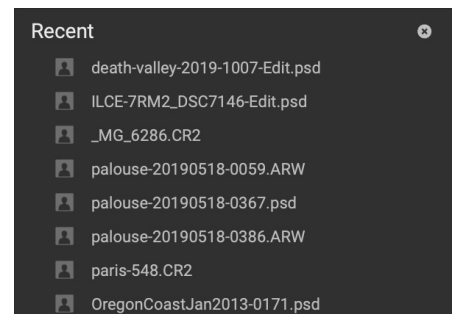
The Photo Panel

The panel on the right side of the screen contains information relative to the currently selected image in the Preview area, and includes three sections: Nav, Levels, and Info.

THE NAVIGATOR PANE (DETAIL AND FILMSTRIP VIEWS ONLY)

This pane presents a thumbnail view of the current image. The white square region marks the image area that is visible in the preview pane. You can pan your image by clicking and dragging inside the square.

At the bottom of the Navigator pane are several zoom buttons representing percentage zoom views (100%, 50% and 25%). Click on one of the buttons to change the view. Fit zooms to fit the current canvas size, while 100 zooms to 100%, displaying the actual pixels.
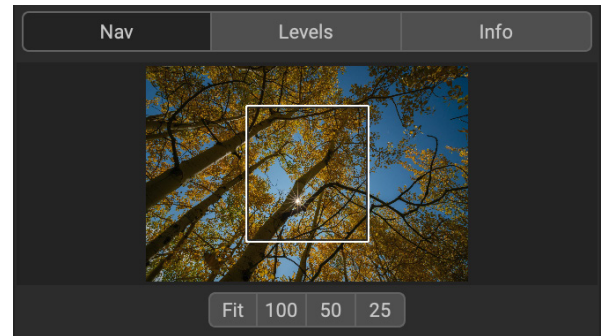
The Navigator pane

THE LEVELS PANE (DETAIL AND FILMSTRIP VIEWS ONLY)

This pane gives you a color chart of the shadow, midtone and highlight areas based on an image's RGB values (commonly known as a histogram). This is useful to show areas within the image that may be clipping. Clipping is when your image contains pure blacks or white and can signify loss of highlight or shadow detail.

The left side of the histogram represents the shadows, while the right represents the highlights. At the top of each end is a triangle. If the triangle is lit, there is clipping on that side of the histogram. If you click on

The Levels pane

the arrows, you will activate the clipping overlay on your image, which displays the areas that are clipped. Those areas with a blue overlay are pure black, while the areas with the red overlay are pure white. You can turn the clipping view off again by clicking on one of the triangles. You can also temporarily enable clipping view by holding down the J key at any time. (Clipping can be turned on or off permanently by pressing Alt (Windows) or Option (Mac) and the J key.) The clipping view is useful when you are making adjustments to the brightness and contrast of your image.
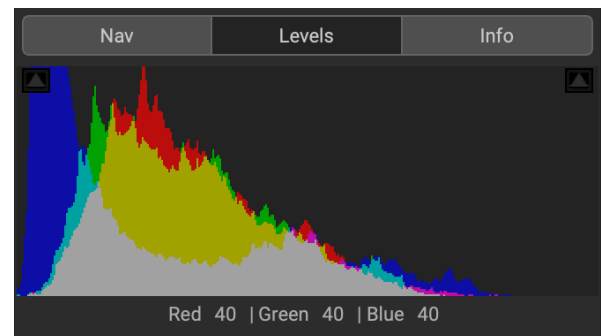
The Levels pane also displays the RGB values under the cursor at the bottom of the pane.

INFO PANE (ALL VIEWS)

The Info pane displays common metadata and other information for the currently selected image in a large, easy-to-read format. This metadata includes:

- Camera make and model
- Lens focal length
- Capture date and time

- File type

- ISO

- Shutter speed

- Aperture

- Exposure compensation

- Image dimensions

- File size

- Rating, color label and like status

- Any settings applied inside the Edit module
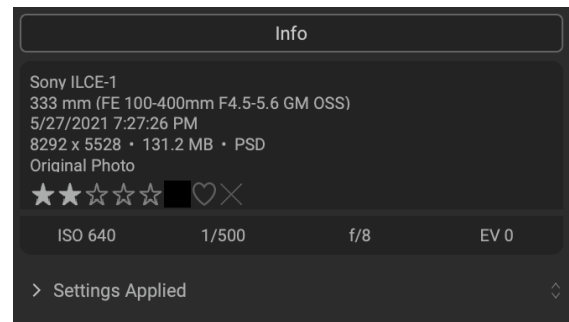
The Info pane, with the Settings Applied option hidden.

If any of the metadata fields are unavailable they will be left blank.

> **TIP:** You can adjust the star rating, color label and flag for the current photo directly from within the Info pane.

Settings Applied

At the bottom of the Info pane is a section that shows all of the operations from the Edit module that have been applied to the current image. Clicking on the right arrow to the left of the label will display a list of every tab in the Edit module, as well as primary adjustment options, including cropping, retouching and text operations. If an image has had any adjustments made to it, that section of the Settings Applied area will be represented in white type, and you can drill down further into the Develop, Effects, Portrait, and Local Adjustment tabs to see which adjustments were made to an image. (On an image that has had no adjustments, the settings will be grayed out.)

The Settings Applied section of the Info pane gives you a quick window into which adjustments were made to an image in the Edit module. Click the right arrow to open the section and view the individual edits. Double-click on any item in the list to take you to that setting in the Edit module.

Double-clicking on any of the available items inside the Settings Applied area will jump to that setting inside the Edit module, where you can adjust it easily.

METADATA PANE

The Metadata pane displays more complete metadata about a photo than is found in the Info pane, and lets you add your own metadata elements, such as author, copyright, contact information, keywords, location information and photo descriptions.

In addition, at the bottom of the Metadata pane are three labels/tabs for viewing or adding specific types of information to your photos:

- **EXIF** (Exchangeable Image File Format) displays all of the data embedded by your camera. Depending upon the camera, some of all of this information will be displayed, and many of the fields are editable.

- **IPTC** (International Press Telecommunications Council) is an industry-standard metadata format, and offers much more detailed metadata information than EXIF. It historically has been used by journalists and stock photographers to catalog and tag photos, as well as add copyright information, captions, and other data.

- **Location** includes GPS information, as well as country, state/province and city information. Photo RAW can automatically look up this information for any photo that has GPS coordinates, via the Set Location from GPS Coordinates item in the Photo menu.

To go back and forth between the EXIF, IPTC and Location fields in the Metadata pane, click on the label. If you don't wish to view any of the metadata tabs, click the None tab.

When you enter text into any field in the Metadata pane, Photo RAW will add that information to the currently selected image. You can change the metadata in multiple images at the same time by selecting them all, then changing any of the fields in the pane.

Metadata templates

With ON1 Photo RAW, you can create metadata templates that apply common information to your images, data such as copyright, author, contact information, your website and more. These preset templates can be accessed in the Metadata pane, as well as via the Import feature (see "Importing Photos into Browse" on page 42).

Saving a metadata template is easy: you can either go to an image that has the basic metadata items you wish to use, or you can select an image without metadata and add your common items to the Metadata pane. Once you have the metadata set, click on the Preset drop-down menu at the top of the pane and choose Save New Preset. The Save Preset dialog will appear on-screen, and you can choose which metadata fields you wish to save as part of the template. For example, while you might wish to save the copyright and contact information as part of your preset, you might not want to apply keyword, GPS or description data to a group of images.

You can update a metadata template by selecting the preset in the pane, then changing the appropriate fields as desired, and then choosing Update Preset with Current Settings from the Preset drop-down. To delete a metadata preset, first choose the preset from the drop-down menu, then choose Delete Preset from the menu.

The Save Metadata Preset dialog lets you choose which metadata fields get saved to a preset from the currently selected image.

Embedding metadata

Metadata you add in Browse is stored in industry-standard XMP sidecar files for raw files. This facilitates the transfer of metadata to any application that supports XMP. When you edit an image, create a copy of an image for editing or use the 'Send to' command, the metadata is embedded into the file automatically (with the exception of raw files). You can manually embed your metadata into images using the Embed Metadata command from the Photos menu. This will open each image you have selected, update the metadata and re-save it. This is supported for TIF, PSD, PSB and JPG files; raw and PNG files do not support direct embedding of metadata.

Reading metadata

Sometimes, when you've been sharing raw images across machines or with others, the metadata information might get 'lost,' or is different than your original metadata. In these instances, choose Read Metadata from the Photo menu, which will grab the metadata from the file or the XMP file (for raw files).

KEYWORD LIST PANE

As you add cataloged folders or browse through folders of non-cataloged photos inside ON1 Photo RAW 2022, any keywords you have added—to any photo—are stored in an internal database. That list of keywords is visible in the Keyword List pane, and from there, you can search for established keywords and display those photos from your cataloged folders, manage the keyword list, and apply keywords to new images. And, to help manage your keywords, Photo RAW 2022 will also let you create subcategories of keywords (see).
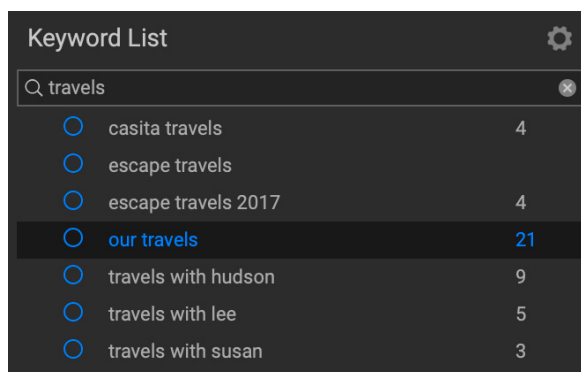
The Keyword List includes any keywords you've ever used, but you can filter the list by typing into the search field at the top of the pane. Double-clicking on an item in the pane will display all of the photos that have that keyword.

If you double-click on a keyword in the list, Photo RAW will search your cataloged folders for that keyword, and display the results in the Preview window. In this search, Photo RAW is actually performing a search in the Advanced Search pane, so you can refine your search there, if you wish to add additional filter criteria. (If you would like to search the current folder only, choose the Filter Current Photos option in the Advanced Search pane.)

You can assign keywords to an image in any of Browse's views. Click on the button to the left of a keyword in the Keyword List, and Photo RAW will apply that keyword to the currently selected image or images. (You can also enter keywords into the Add Keywords field in the Metadata pane.)

Right-clicking on a keyword gives you a pop-up menu with a list of options you can perform:

- **Assign Keyword to Selected Photos:** adds that keyword to the current selection.
- **Remove Keyword from Selected Photos:** removes that keyword from the selection
- **Add Keyword:** Lets you create a new keyword, with the option to save that keyword as a subcategory of the currently selected keyword.
- **Edit Keyword:** lets you rename the selected keyword, and applies the new keyword to all of the cataloged and known photos that used it.

- **Delete Keyword:** Removes that keyword from the cataloged and known photos that use it.
- **Find Cataloged Photos with Keyword:** Displays (in grid view) all of the photos in your cataloged folders that use the selected keyword.

Refining the Keyword List

Because the list of keywords can be extremely long, you can use the pane's search field to look for keywords: as you start to type in the field, Photo RAW will display a list of keywords that contain the letters you've typed. Once you've narrowed your search, you can select a keyword from the list (shown, right), and perform any keyword operations detailed in the previous section.

Using hierarchical keywords with Photo RAW

In addition to standard keywords, ON1 Photo RAW 2022 also supports the creation and use of hierarchical keywords. This option lets you "nest" keywords within a top-level keyword, which can be helpful to manage and categorize keywords.

For example, you might want to use a master keyword for states that you've visited—"California," "Nevada," "Oregon," etc.—and use sub-keywords for places within the state, like "Death Valley," "Joshua Tree", "Valley of Fire" and others.

Hierarchical keywords are displayed in the Keyword pane with a small right arrow to the left of the top-level keyword. Clicking on the arrow will display the sub-keywords for that master, with the number of images with that keyword on the

Hierarchical keywords can help with keyword management, and can be extremely useful when you wish to use primary and secondary categories for such image categories as locations, people, types of shoots, and so on.

right side. As is the case with standard (i.e. non-hierarchical) keywords, you can double-click on any of the nested keywords to show all of the photos in your cataloged folders that use that keyword.

To create a keyword hierarchy, first create your master keyword by clicking on the gear icon at the top of the Keyword List pane and choosing Add Keyword. Enter the name of the top-level keyword and click Apply. (If you have photos selected, and don't want to add the new keyword to those images, uncheck the "Add to Selected" box before clicking Apply.)

To create a new nested keyword, right-click on the master keyword and choose Add Keyword from the pop-up. The dialog box should now give you a check box to nest the new keyword inside the top-level keyword, as well as to add the new keyword to any selected photos.

If you wish to create new hierarchies from existing keywords, it is best to first create your master keyword, and then drag any existing keywords onto that master.
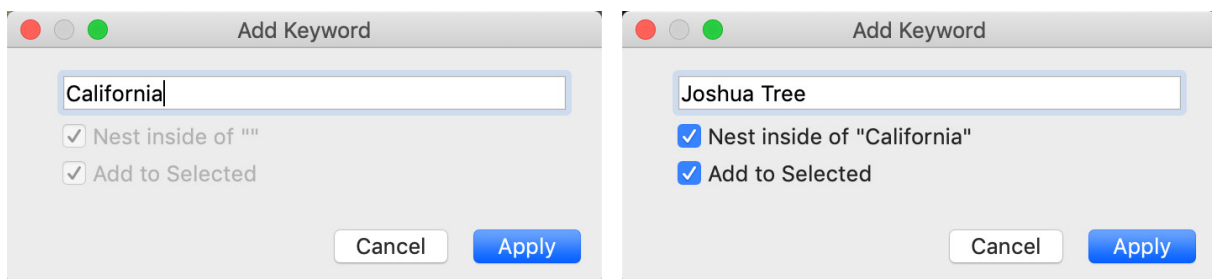
To create a hierarchical keyword set, create the top-level keyword by choosing Add Keyword from the Keyword List pop-up. Then, right-click the top-level keyword and choose Add Keyword. There, you will have the option to nest the new keyword inside the top-level keyword.

Importing Photos into Browse
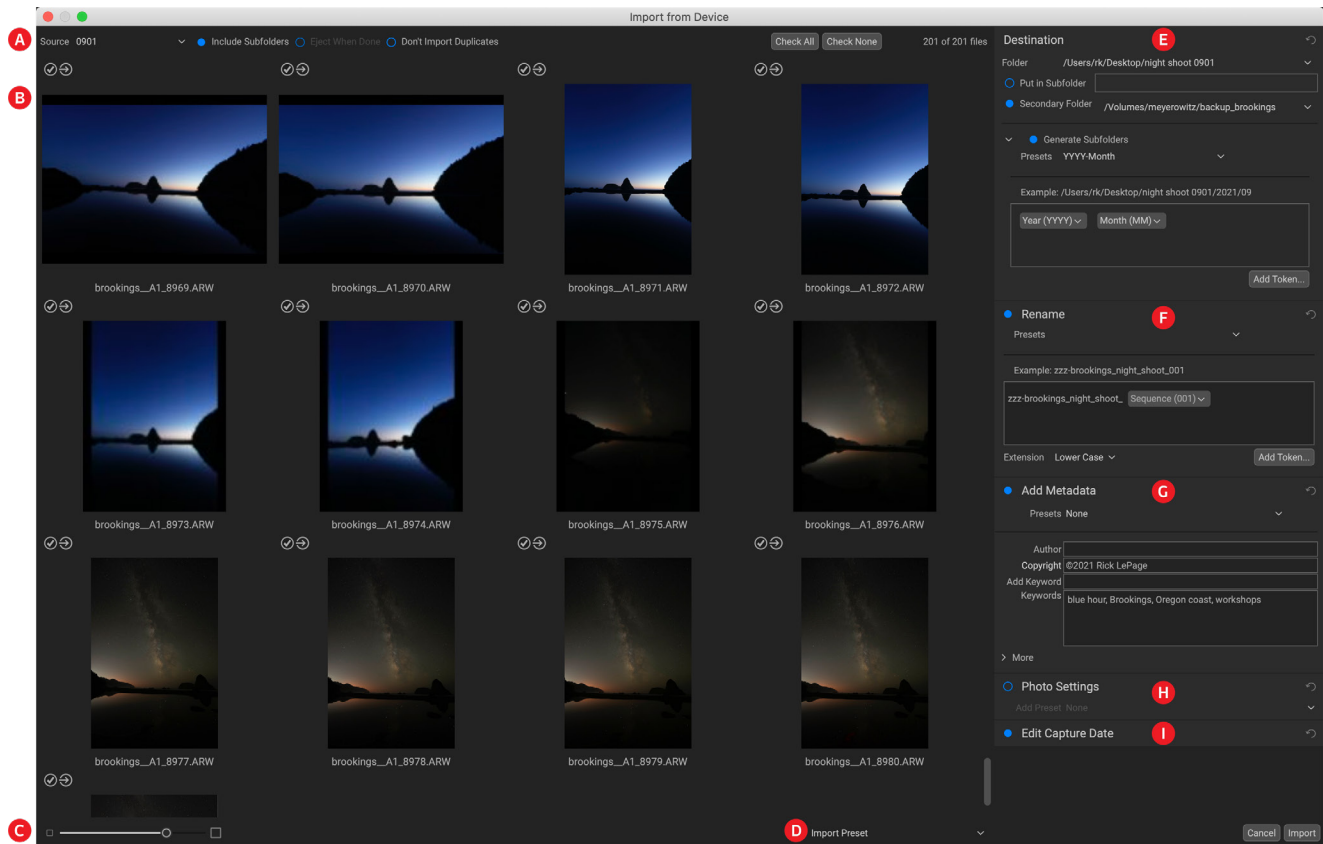
ON1 Photo RAW's Import function lets you quickly grab photos directly from your camera, memory card, phone, tablet, or other source location (like a portable hard drive loaded with images from the field).

To import photos, connect your camera, card or other device and choose Import from Browse's File menu. The Import window opens, with the following options:

A. **Import Options Bar:** Lets you choose the source (camera, memory card, or other device), if Photo RAW should search through subfolders on the source, eject the device after importing, and to bypass images that have already been imported. You can also choose options for selecting all photos or none of them.

B. **Preview window:** Displays the images to be imported. By default, all photos are included; click the check mark in the corner of any image to remove it from the import process.

C. **Thumbnail size:** Adjusts the size of the thumbnails in the preview area.

D. **Preset selector:** Applies an import preset—which can include any of the settings from the import panel on the right—to the currently selected images.

E. **Destination:** This pane sets the location of the imported images, as well as a secondary folder that you can use to store a copy of your photos saved as a backup to another location. (See below for specifics on using this pane.)

F. **Rename:** This pane lets you rename the imported files, with options for custom text, serialization, and image metadata. (This pane uses the same token-based renaming function and presets found in the Rename Files dialog; see for more.)

G. **Add Metadata:** Lets you add assorted metadata to the imported images, ranging from keywords, copyright information and more. To access the complete IPTC metadata fields, click the More drop-down; you can also add GPS coordinates and a description via this section of the pane. You can use existing metadata presets (or create your own in this window) to apply consistent metadata across multiple imports; simply enter the data you wish to include and choose Save New Preset from the Preset menu in the pane. (See "Metadata templates" on page 15 for more on metadata presets.)

H. **Photo Settings:** This pane lets you apply any Edit module presets to the imported images. (These settings are not permanent; you can adjust or reset the adjustments via the Settings menu. See "Presets" on page 107 for more.)

I. **Edit Capture Date:** Use this pane when you wish to change the capture date of imported images. The Adjust Time Zone setting can be helpful if you forget to change your camera's clock when you travel across multiple time zones.

Once you have adjusted your import settings and selected the images for import, click on the Import button to perform the operation. While your photos are being imported, you'll see a progress bar displayed in the lower right side of the Browse window. If your import location is a cataloged folder, the new images will be indexed automatically in the background.
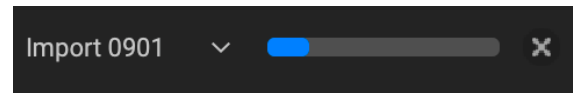
While Photo RAW is importing images from a camera or card, you'll see a progress indicator at the bottom of the Browse window.

DESTINATION PANE OPTIONS

Destination is the only pane in the Import window that you have to set up when importing images. It has a number of different options for where you wish to import images:

- Use the **Folder** pop-up to choose the destination folder for your import. A list of recently used destinations will be in the list, or you can choose a different folder.

- To put your imported images into a new folder—one that you name—inside the primary import location, enter the name of the new subfolder in the **Put in Subfolder** field. Photo RAW will create that folder and copy the imported images to that location.

- Turning on the **Secondary Folder** option will copy the imported images to another folder connected to your computer (using the parameters in the Put in Subfolder and Generate Subfolders settings, if used). It is intended for people who wish to back up their photos onto another drive or location. Use the pop-up menu to determine the backup location; any previously used folders will be listed in the menu.

- Use the **Generate Subfolders** option if you would like to use image metadata or import count information to create customized subfolders during import. This option uses the same token-based function used in the Rename pane; see "Renaming Files and Folders in Browse" on page 44 for specifics on using these tokens. For example, you could have imported photos automatically organized by two levels of folders, one by the year, and inside each year, folders for each month. When images are imported, Photo RAW will place each image in the
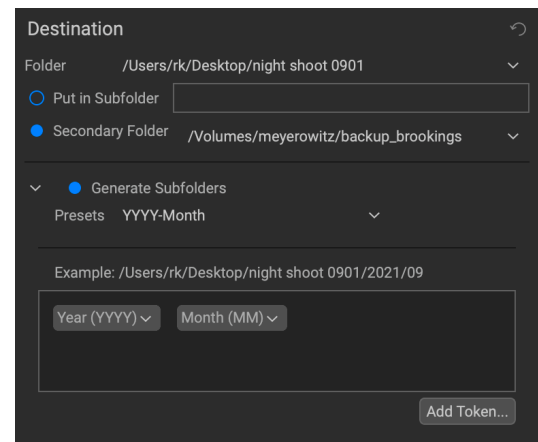
appropriate location based on the settings in this field. If the folder doesn't exist, Photo RAW will create it.

Each time you import images, Photo RAW will display your previous settings.

BYPASSING DUPLICATE FILES DURING IMPORT

The Don't Import Duplicates option is helpful for those times when you re-use a card in the field, but don't delete the photos from it.

Each time you use the Import function, Photo RAW keeps a record of every imported photo's filename and capture time. When you add a card to import, the app checks its import database, and if it finds a duplicate, it will uncheck it in the Import window, and display an "Already Imported" icon to the right of the checkbox.

Because Photo RAW saves the original filename and time metadata, the Don't Import Duplicates option works even if you use the Rename option to rename the photos on import. And, if for some reason you wish to re-import a photo, you can click the selection check mark to re-import it.
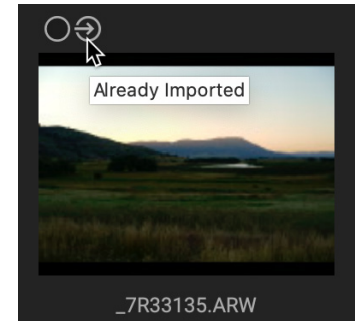
With the Don't Import Duplicates option on, any photo that has already been imported will be deselected.

SAVING IMPORT SETTINGS AS A PRESET

Photo RAW makes it easy to save often-used import settings as a preset: things like copyright and other metadata, file-naming conventions, import locations and more. To save an import preset, adjust the information and settings in any of the panes on the right of the Import window, and choose Save New Preset from the pop-up. Thereafter, when you choose the preset, it will apply those saved settings to the current import job. If you wish to change a setting for an existing preset, select the preset, make your changes in the panels and choose Update Existing Preset from the preset selector's pop-up menu.

Photo RAW remembers the last-used import preset when you choose Import from the File menu.

Managing Files and Folders in Browse

CREATING A NEW FOLDER

You can create a new folder from the right-click contextual menu in the preview area or selecting Add Subfolder in the Edit menu. This will create a new folder inside the selected folder; if you have files selected in the preview area, you also will get the option to move or copy the selected images into the new folder.

DELETING A FOLDER

To delete a file or folder, click on it and press the Delete key or right-click and select 'Delete' from the contextual menu. Then, confirm that you wish to move the file to the trash. If you have multiple files and or folders selected it will move them all to the trash. If you make a mistake you can use the Undo command, although some files, like those on a network volume, are deleted immediately and cannot be undone.

COPYING AND MOVING FILES AND FOLDERS

You can copy and move files and folders in the ways you are accustomed to on your computer. You can select files and folders and use the Edit > Copy command to copy them to the clipboard and then Edit > Paste to paste them to new location, inside or outside of Browse. You can use this to copy a file or folder from one place to another or to attach an image to an email for example.

You can also use the familiar drag-and-drop functions to copy or move files and folders. Dragging and dropping a file or folder will move it if it is on the same drive or copy it to another drive. You can drag and drop in and out of Browse module.

> **NOTE:** Due to the non-destructive nature of Photo RAW 2022's workflow, copying a photo and pasting it outside of Photo RAW will paste the original file. If you wish to incorporate any Edit module changes, use the Export or Quick Export commands to get a version of the photo with your edits.

SHOW IN FINDER/SHOW IN EXPLORER

To view a file or folder in the Finder (MacOS) or Explorer (Windows), right-click on an image or folder in the Preview area and choose Show in Finder or Show in Explorer from the pop-up menu.

CHANGING A FOLDER'S THUMBNAIL PREVIEW

By default, Photo RAW chooses an image from a folder to use as the preview thumbnail for that folder. To change this, double-click on the folder icon and select a photo you would like to use as the thumbnail. Right-click on the photo and choose Set Folder Preview from the pop-up menu.

RENAMING FILES AND FOLDERS IN BROWSE

Browse offers two methods for renaming files or folders inside ON1 Photo RAW 2022: single file and batch.

To quickly rename a single file or folder, click on it in most Browse views and choose Rename File from the Edit menu, or right-click on the item and choose Rename File from the pop-up menu. This will display a window where you can type in a new name for the item. Clicking OK will rename that file or folder.

Renaming a single file or folder.
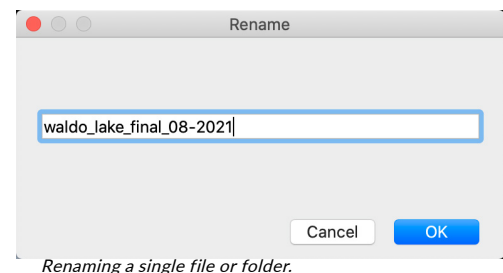
Batch-renaming groups of files or folders

To rename multiple items in Browse as a batch, select them in the current view and choose Rename File from the Edit menu or the right-click contextual menu. Photo RAW will display the Rename window, which offers an array of options for renaming files based on custom text and image metadata.

In batch-rename mode, the Rename window has a central text entry field, where you can add any custom text you wish all of the renamed files to have. You can also insert a set of tokens (via a pop-up menu) that will be added to the renamed files. These tokens are in four main groups:

- **Filename**, which includes options for using the original filename, number suffix (taken from the image as recorded by the camera) and enclosing folder name.

- **Date/Time**, which includes a list of date (year, month, day) and time data that can be combined in various ways.

- **Sequence**, which adds an incremented number to each renamed file in the batch, as well as the total number of files in the batch. Each of these token sets include options for leading zeros in the resultant filename.

- **Metadata**, which lets you add specific EXIF and IPTC metadata to the filename.
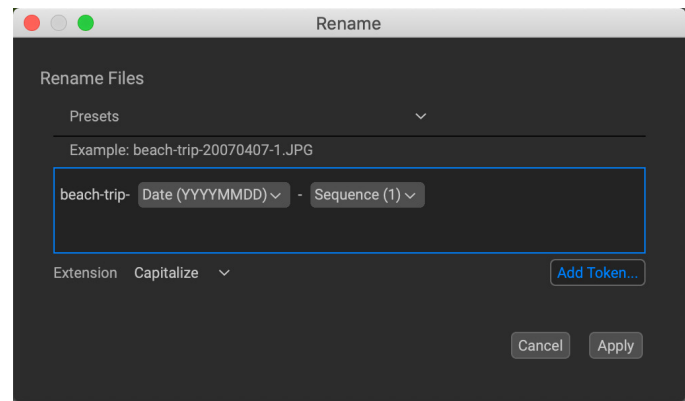
When renaming multiple files or folders, Photo RAW 's batch-rename feature lets you use complex combinations of custom text and image metadata. You have the capability to save your custom rename settings as a preset to reuse at other times.

> **NOTE:** A complete list of the tokens used in the Rename window, with explanations, can be found on "Export" on page 208, in the Export section of this guide.

To build a rename sequence using tokens, click on the Add Token button, and choose the appropriate token from the pop-up menu. The token will be added as a shaded item in the text field, and the Example item above the text field will show a sample of a renamed file using the current set of tokens and custom text. To change an existing token, click on the down arrow on the right of the token, which will display the full set of tokens. To delete a token, double-click on it and press the Delete key.

Custom text can be added anywhere in the entry field. You can click the cursor at the beginning or end of a token (or in-between tokens) and add spaces, dashes, underscores and any other text you wish to be included in each renamed file.

Because the Rename process is not undoable, make sure you use the Example field to check that your text and token combinations give you the filenames you expect for your batch process, and adjust as needed. When you're sure, click Apply, and Photo RAW will rename all of the files.

The Presets pop-up menu at the top of the Rename window includes a set of common batch combinations that you can use as a starting point. You can also create your own batch-rename presets: build the rename options you wish, and choose Save New Preset from the bottom of the Presets menu. You can also update an existing preset and delete presets from this menu.

> **NOTE:** The Rename window remembers the parameters of your last operation, which can be helpful for creating presets.

Finding and Filtering Images with Advanced Search

The Advanced Search window is designed to help you find photos in your photo library based on a extensive variety of criteria specific to photos and the metadata embedded in them. You can search based on any text associated with a photo; likes, labels and star ratings; dates, including creation and modification dates, time of day and seasons; keywords; and nearly any piece of metadata, from camera body and lens information to aperture, ISO settings, and much more.
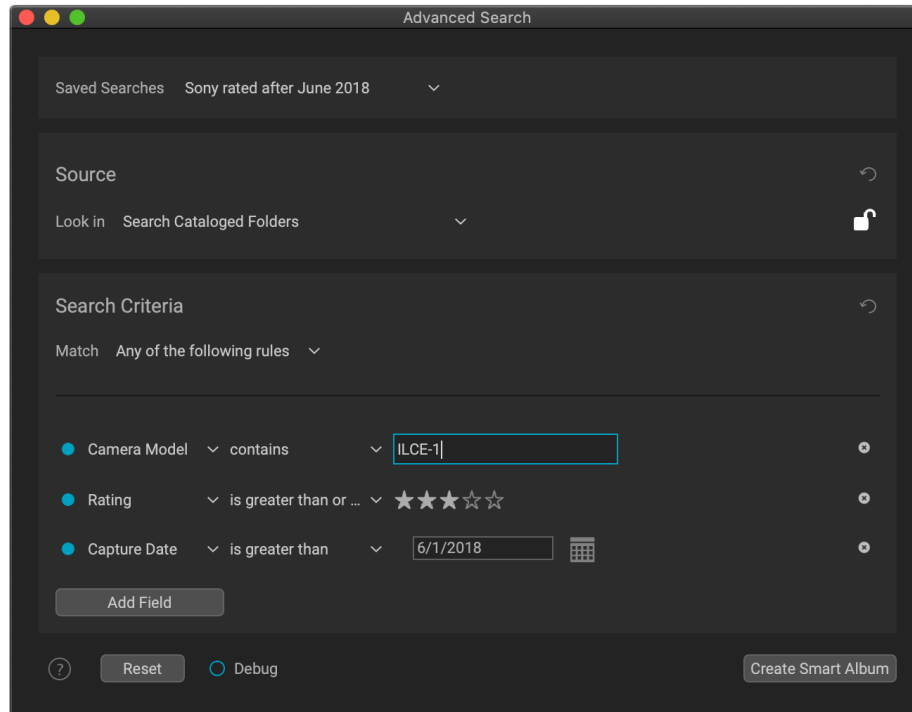
The Advanced Search window is designed to help you search for photos in your library quickly and easily, from more than 50 search fields, including date information, ratings, camera and lens metadata and any text associated with a photo.

Advanced Search options are flexible: they can be applied to the current folder view or album, or they can search any or all of your cataloged folders. You can also save any search as a preset style, so you can use it again in the future, or you can save your search as a Smart Album that is available in the My Catalogs/Browse panels.

To call up the Advanced Search window, click the magnifying glass icon in the Shortcuts selector on the left, choose Advanced Search from the File menu, or press Command-F (MacOS) or Control-F (Windows). The search window will displayed over the primary Photo RAW window, and remains open as you search.

In the Advanced Search window, you apply your own criteria and your search locations, or you can choose from a number of preset searches. Advanced Search contains three components, listed from top to bottom:

- **Saved Searches:** Photo RAW comes with a set of preset saved searches, most of which are simple searches with a single set of criteria, such as by rating, 'like' settings, date and more. Choosing an item from the pop-up menu will adjust the Source and Search Criteria settings and display the results in the preview
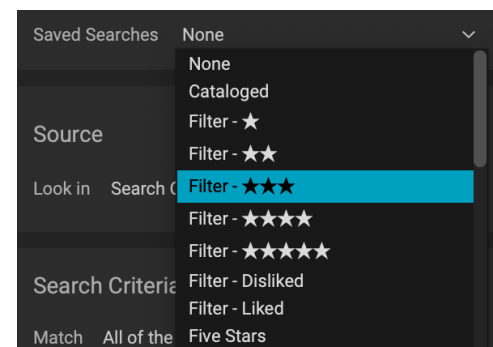
The Saved Searches option lets you choose from 20 stock simple searches, and you can also save any search to this menu.

area. You can also save your own search criteria via the pop-up: choose Save New Style from the bottom section of the menu and give the new saved search a name. Once you have saved it, those searches will be displayed at the bottom of the Saved Searches menu.

- **Source:** This section instructs Photo RAW where to search. The Source pop-up menu lets you choose between the photos in the current view; cataloged folders (all, or a specific folder): all photos that Photo RAW knows about (cataloged, favorites, and any images you've viewed in Browse); and any photos synced with Cloud Sync. When you have Current Photos selected as a source, you'll see a Lock icon on the right side of the Source pane. Clicking the lock 'on' will keep using the search criteria as you move from folder to folder.

Source options for Advanced Search
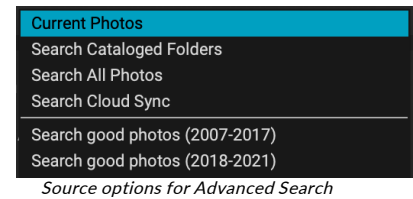
- **Search Criteria:** The core of the Advanced Search window, this section lets you fine tune your search, using multiple criteria and specific matching options. These options are described in more detail below.

At the bottom of the Advanced Search window are three items: a link to ON1's online help for the Advanced Search feature, a Reset button, which resets the current search to its default state, and Create Smart album, which will save the current search criteria as a Smart Album in that pane in the My Catalogs/Browse panels (see "Smart Albums" on page 35 for more information).

Photo RAW's Advanced Search is dynamic: as you adjust the options in the window, the selection of photos that meet your criteria and other settings will be displayed in Browse's main window, in Grid view. If you add or remove criteria, change the source folders, the thumbnail grid will update. If you want to work with the selection, you can move the search window out of the way, or use your operating system's Minimize window option to hide it while you're working; to get the window back, click on the Advanced Search icon in the Shortcuts selector.

When you close the search window, Photo RAW will return you to the view that you were in when you invoked Advanced Search.

> **NOTE:** Advanced Search saves your last search criteria when you close the window, and will display that the next time you open it. You can adjust the settings as desired, use a saved search, or press the Reset button to start a new search.

SETTING THE SEARCH CRITERIA

The Search Criteria section consists of two parts: the matching options, and the criteria the search is using to find photos. The Match options set how you wish the search criteria to be filtered, based on three options: choosing photos that **meet all** of the current criteria, those that **meet any** of the criteria, or those that **match none** of the criteria.

You build the search options by adding criteria from the Add Field pop-up, using as many criteria as you wish to achieve your chosen search results. When you add a field, the default is Everything, which searches every piece of text-based metadata in your photos. You can change it by choosing another field from the pop-up menu. If you wish to remove a criterion you've added, click the 'x' on the right side of the item.

Search fields

Advanced Search has 19 categories of search criteria, many of which have additional subcategories. The categories, and what they search for, are:

There are 19 categories of search criteria in the Advanced Search window. When you click the Add Field button, the default field is Everything; click on the pop-up menu to change it to a different search field.

- **Album** — whether a photo is in an album or not (Smart Albums are not supported).

- **Camera** — searches for specific camera and lens metadata used to take a photo, including aperture, shutter speed, ISO, focal length, camera name, and more.

- **Cloud Sync** — whether or not an item has been synced with ON1 Cloud Sync

- **Color Label** — photos with a specific color label (icon and text name); can search for multiple labels as well (i.e. Red and Green).

- **Date** — capture date, edited date or time of day (morning, afternoon, evening, night) of a photo.

- **Description** — searches the contents of the Description field in the Metadata pane

- **Edited** — searches for photos that have had adjustments applied in the Edit module; includes any adjustments in specific modules—Develop, Effects, Local Adjustments, Portrait, Sky Swap—as well as Layers, NoNoise, cropping, retouching, Liquefy tool, and text additions.

- **Everything** — searches for any text-based data (filename, keywords, metadata information) associated with a photo.

- **File Type** — searches for specific image and video file types. Image formats include RAW, TIFF, PNG, JPEG, PSB, PSD, DNG, ONPHOTO, and HEIC. Video formats include M4V, MOV, AVI, WMV, MPEG, and MTS.

- **Filename** — filename or the folder path that the photo resides within.

- **IPTC** — searches IPTC-specific fields—as shown in the Metadata pane—including Copyright Status, Creator/Author, Job Identification, and Title.

- **Keywords** — searches for applied keywords, as well as whether there are keywords attached to an image or not.

- **Likes** — photos set with Like (icon with a filled-in heart), Dislike ('X' icon) or Not Set (empty heart).

- **Location** — draws from Location information section of the Metadata pane, can also search for photos with or without GPS data.

- **Object Type** — whether a file is a Photo, Version, or Video.

- **Rating** — photos with a star rating set.

- **Season** — searches date information for photos shot during Spring, Summer, Winter, or Fall; includes Northern and Southern Hemisphere options.

- **Shared** — searches for photos that have been shared to SmugMug.
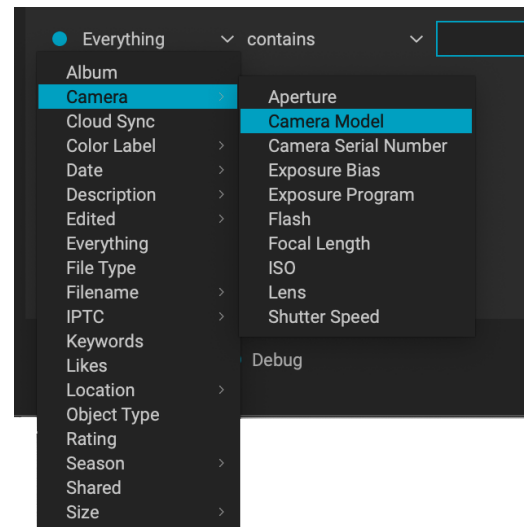
- **Size** — searches for photos based on size information, including file size on disk, height and width, long and short edge, number of megapixels, and orientation (landscape, portrait, square).

Search field operators

Each search field has an operator option and a subject field. Fields where the subject field is a list of items—Edited, File Type, Likes, Object Type, and Shared—have a simple, "is/is not" binary set of operators. Search fields that have a text- or numeric-based subject field will have additional operators that let you refine the search in very specific ways:

- "**is/is not**" will look for the exact match of the subject in the search field.
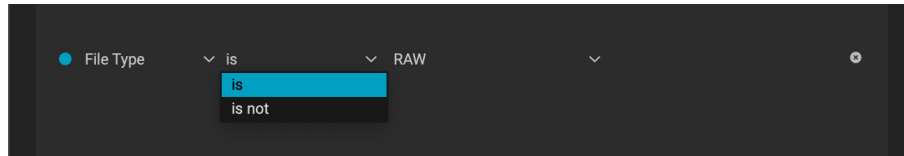
The simplest search operator is the "is/is not" operator. Here, we want to search for all RAW files in the current source set.. This operator set is used by any search field where the subject field is a list of items.

- "**contains/does not contain**" will look for matches that at least include the subject in the search field.
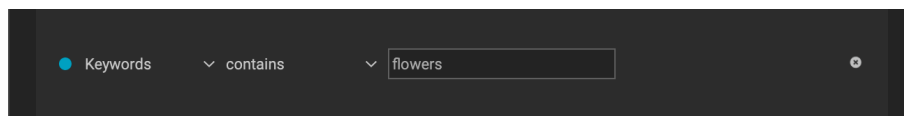
- "**starts with/ends with**" will look for matches where the text of the subject field is at the beginning or the end of the target. This is most often used when searching filenames, but it also is available in any metadata subject that has a text entry.
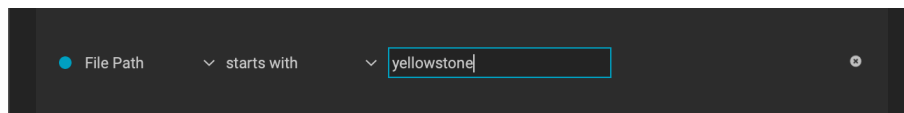
- "**is empty/is not empty**" is used to determine whether the contents of a metadata field contain information or not, and can be helpful when finding which photos in your library don't have GPS information, or a color rating.

- "**is greater than/is less than**" is used when the subject field being searched for contains numeric data. This operator is commonly used when searching ratings, but can be used in many other search types, especially with camera-specific metadata.
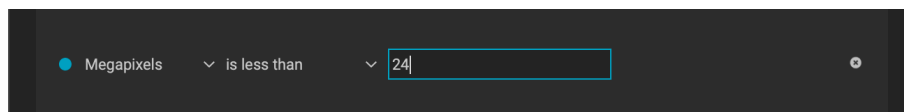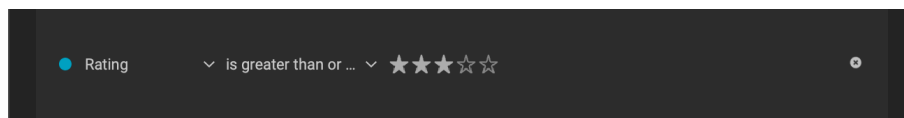
- "**is in the range**" is used to find numeric or date-based metadata that resides within a specified range.
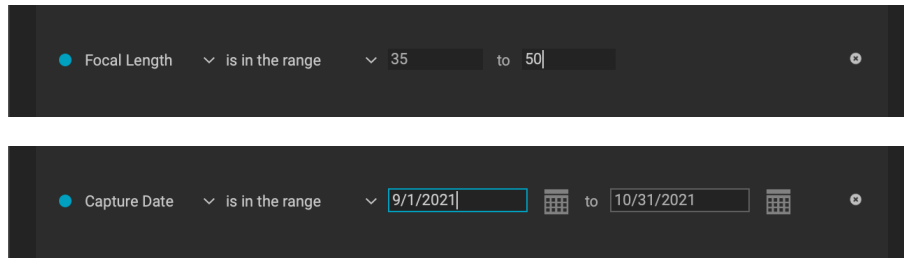
Date-specific fields have a few other operators in addition to some of the operators mentioned in the previous section, including:

- "**is/is not in the last**" finds photos taken in the last number of specified days.
- "**is today/yesterday**" finds photos taken on the current day or the previous day.
- "**is in the last week/month/year**" finds photos taken in the range specified by the chosen operator.
- "**is repeated annually**" will find all photos taken on a specific day, regardless of the year. This can be useful for finding photos taken on holidays, birthdays, and other recurring events.
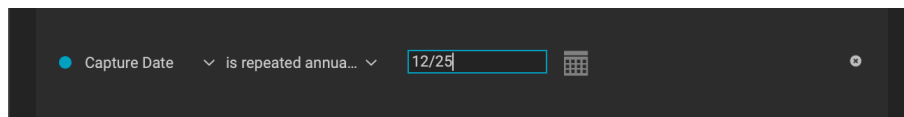
Creating complex searches
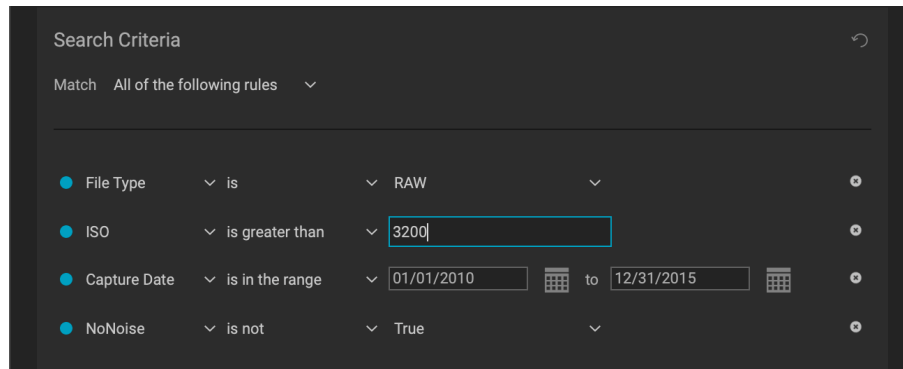
While many of your searches might be simple ones—like finding photos from a certain date range, or ones with a specific keyword or rating—the real power of Advanced Search lies in its capability to perform complex, multilevel searches. You can use a many search criteria in the Advanced Search window as you wish to achieve the desired results.

For example, to search for photos taken in the past year with a 24-70mm lens and that have been edited in Effects, you'd use the following criteria:
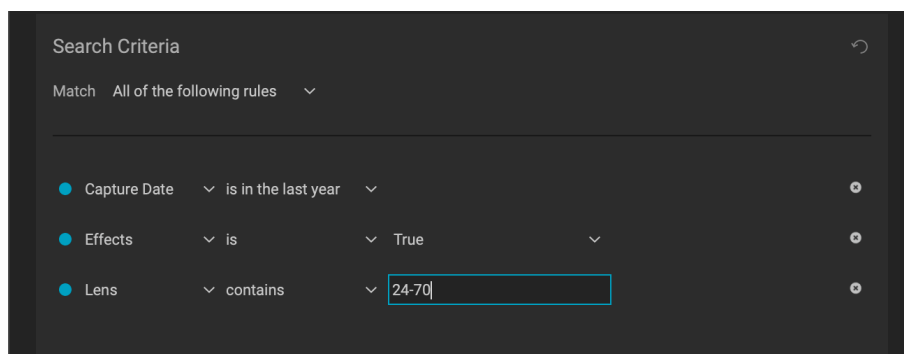
Or, if you wanted to look for raw photos from 2010 to 2015, with an ISO above 3200, that might benefit from Photo RAW's NoNoise, you could use the following criteria:
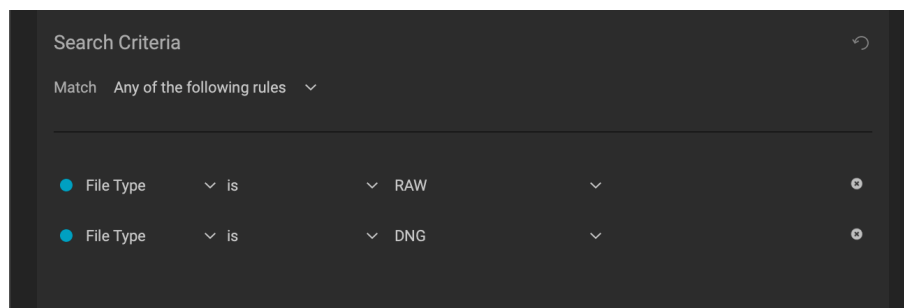
With the above search, you might have a lot of photos that could use NoNoise's noise reduction, and save the search as a style so you can perform it again at later date. Adding the Editing criterion, "NoNoise is not True" will remove any NoNoise-applied photos from the search results, letting you focus on images that could still benefit from NoNoise.

You can even have multiple instances of the same search field with different search options, although in most cases you'll need to make sure that you have Meet Any of the Search Criteria set in the Match pop-up. For example, if you wished to find all RAW files and all DNG files, you would add two instances of the File Type criterion, one for each type, and change the Match pop-up to "Any of the following rules."

Using Smart Organize to Manage Duplicates and More

Photo RAW's Smart Organize feature is designed to help you get an unwieldy photo library under control. When you have a large library that contains thousands of photos, it can be difficult to find duplicates, or to manage images that are similar in appearance or date and time. Or sometimes, you wish to group photos from HDR brackets, slices for building panoramas, or photos to be focus stacked. Not only can Smart Organize find duplicates, but it can find and group photos that have similar appearance, location or time. It can help you cull your library to find just the best photos in a series.
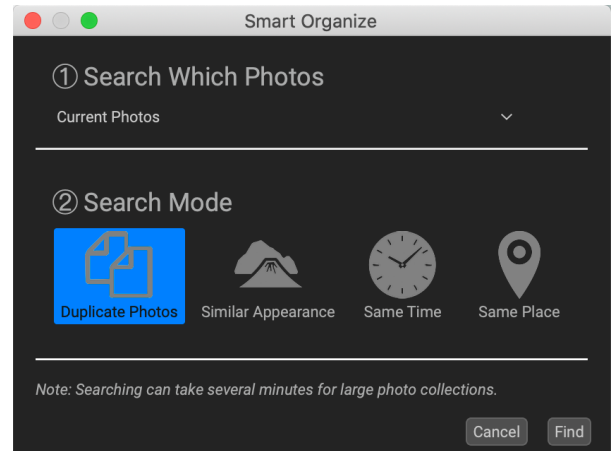
To access Smart Organize, click on the icon in the Shortcuts list or choose Smart Organize from the File menu. This will open the start-up window, which has two sections, Search Options and File Info. The top of the Search Options pane lets you choose which part of your photo library you wish to search:

- The contents of the current view in Browse (Current Photos);

- All of your cataloged folders;

- A specific folder selected via your operating system's file/folder selection dialog box; or

- Any one of your individually cataloged folders.
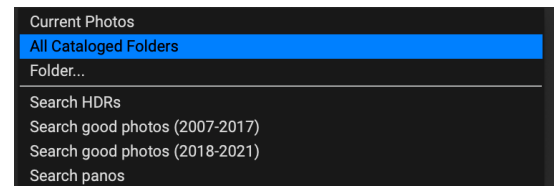
The second portion of the Search Options pane lets you choose which search mode to use. There are four search types:

- **Duplicate Photos.** This option looks for potential duplicate images, based on name, date taken, file size, and dimensions.

- **Similar Appearance.** This option uses machine learning to find photos that are similar to each other, looking at similar tones and colors. This makes it easy to group and sort through series of photos, such as portraits of different people.

- **Same Time.** Selects photos that were shot in the same general time frame. When you wish to group panorama slices or HDR brackets, you can use this option to group sets of images.

- **Same Place.** Uses GPS data to display photos taken in the same general vicinity of each other.

Clicking the Find button will perform the search, and open the Smart Organize Results window, as shown on the following page.

> **NOTE:** When working with large collections of photos, Smart Organize can take quite a bit of time to display results.

THE SMART ORGANIZE RESULTS WINDOW
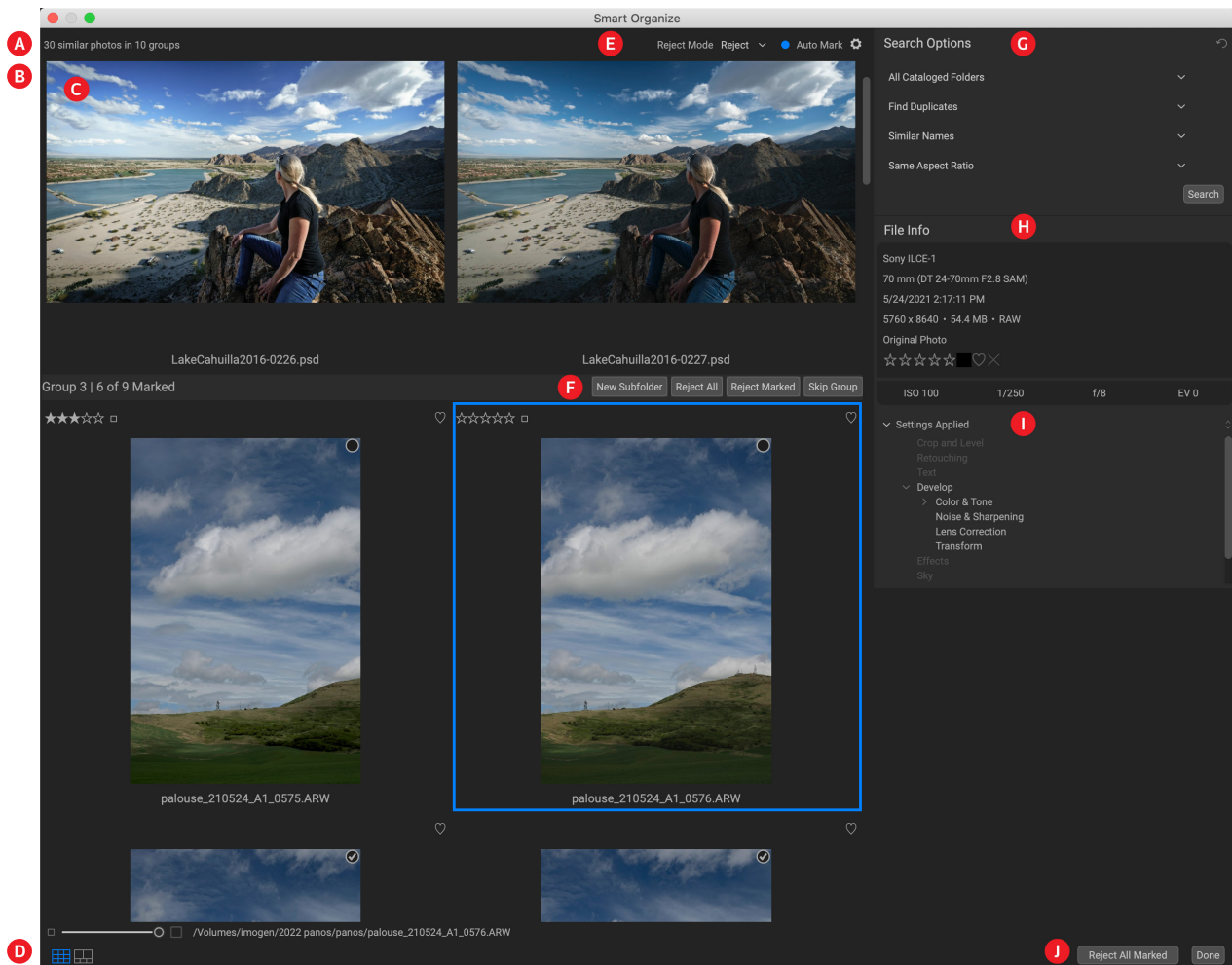
The Smart Organize results window contains the following elements:

A. **Results:** the total number of photos found, and the number of sets.

B. **Group heading**: displays the group number and the number of photos marked in that group.

C. **Preview area:** displays search results as grid of thumbnails, by group.

D. **View Selector**: zoom factor (top left); switch between Grid and Compare views (bottom left); file path for the currently selected photo.

E. **Reject/Delete** and **Auto Mark** settings.

F. **Group-specific options**: let you create a new subfolder with the selected images: reject/ delete marked photos in the group: and Skip the group and remove it from the window.

G. **Search Options:** includes the original search type, but you can also perform a new search by selecting items from the pop-up menus in the panel.

H. **Info Panel:** displays EXIF and size information for the currently selected photo. Works identically to the standard Info panel in ON1 Photo RAW 2022 (see page 37)

I. **Settings Applied:** shows all of the operations from the Edit module that have been applied to the current image (see page 38).

J. **Close** buttons: Reject/Delete All Marked closes the window and does either deletes/rejects the marked photos in all groups; Done closes the window without making any changes.

Working through the search results

When you perform a search with Smart Organize, the results window is organized into groups, based on the search mode you chose. Groups can consist of a pair of photos, or larger numbers, based on your library and the type of search. You can use the view slider of the window to make the thumbnails larger or smaller, and you can view the photos in Grid or Compare modes, which work in the same manner as those views in the main Browse window.

The idea behind the results window is that you'll work group by group, evaluating the photos in that group, and making decisions on the group's contents based on the type of search you originally made. Photos that you wish to do something with—remove in one form or place into subfolders—you apply a checkmark to. Then, you'll move on to the next group. The top section of each group has the following items:

A. **Group Information:** Displays the number of the current group (out of the total number of groups) and the number of photos marked in the group. You can also use the right and left arrows on the left side of the bar to move to another group.

B. **New Subfolder:** Creates a subfolder with the marked photos in the group.

C. **Reject/Delete All:** This will apply the reject flag or delete all of the photos in the group, based on the Reject Mode option chosen at the top of the search results window.

D. **Reject/Delete Marked:** This will apply the reject flag to, or delete all of the *marked* photos in the group, based on the Reject Mode option chosen.

E. **Skip Group:** Removes the group from the results, without making any changes.

In each group, you mark photos you want to deal with—ones you wish to reject/delete or move to a subfolder—with the checkbox in the upper corner of that photo's thumbnail. You can select multiple photos in a group, and when you choose one of the actions, it will apply to the checked photos. Clicking on the New Subfolder, Reject/Delete All, or the Reject/Delete Marked buttons will apply that action to the group and remove the group from the results list. Clicking on the Skip Group button will remove that group from the results window and not make any changes to those photos.

When you're using Smart Organize to look for and group photos—for HDR, panoramas, focus stacking, or other organizational uses, use the New Subfolder option. Mark the photos that you wish to group, and click on the New Subfolder button. You'll be prompted for a folder name; enter the name and click OK. Photo RAW will move the marked photos to that new folder.

> **NOTE:** If the marked photos do not reside in the same folder the New Subfolder button will be grayed out.

Using Auto Mark

When you have the Auto Mark option checked at the top of the results window, Photo RAW will mark the photos in each group that it believes should be checked, based on criteria found in the Auto Mark tab of the Preferences window. This tab can be opened in the search results window by clicking on the gear icon to the right of the Auto Mark checkbox.

The Auto Mark preferences tab displays a collection of 10 criteria—file type, editing status, various image metadata items, and more—that you can set, and that Photo RAW will utilize when performing a Smart Organize search. For example, you can choose to prefer Raw files over ONPhoto, JPG or PSD files, and, when creating each group, Photo RAW will mark—or not in the case of finding duplicate files—the appropriate images.

Auto Mark is intended to be an aid in helping you select and mark photos, especially when you're dealing with large groups of photos. It doesn't, however, automatically delete or reject photos; in each found group, you can choose to accept its recommendations, change them, or ignore them completely and skip that group. If you prefer to mark images in groups by yourself, simply turn the Auto Mark option off at the top of the results window.
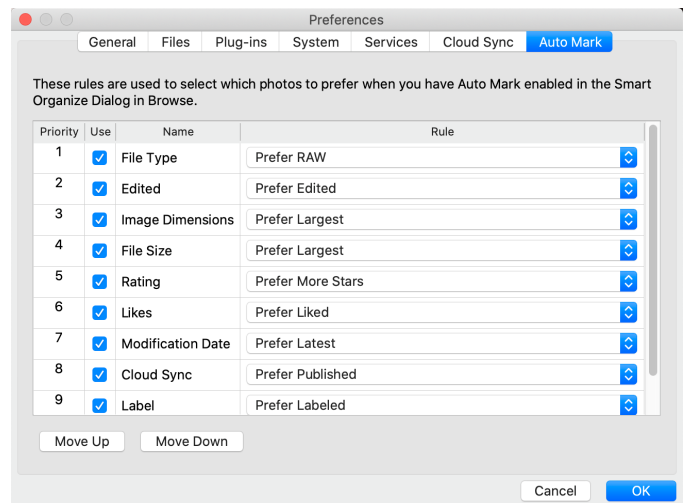
Advanced search options

If you would like to perform a different search than the one currently displayed in the Smart Organize results window, you can do so via the Search Options pane on the left side of the results screen. The top of that pane has pop-ups for the search locations and the four search types (duplicates, appearance, time and location). However, there are two other options you can change, depending upon the type of search operation you are making.

In all four search types, the bottom of the pane has a menu with three options related to the aspect ratio and size of the photos selected. You can choose to refine the selection to files of the aspect ratio, the same pixel dimensions, or none.
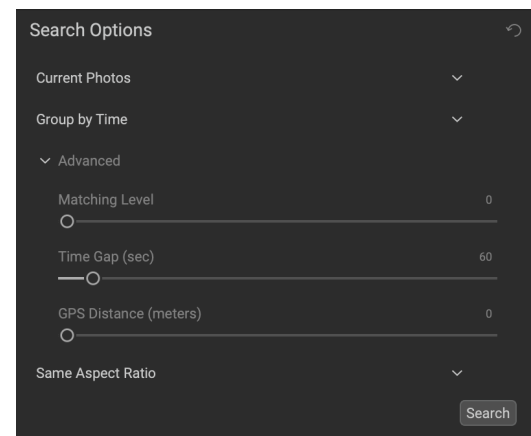
When you are searching for photos based on similarity, time or location, an Advanced section will be visible in the Search Options pane. The three Advanced options (and which search type they work with) are:

- **Matching Level (Find Similar):** This slider adjusts the results of grouped photos. The smaller the number, the less they have to match to be grouped.
- **Time Gap (Group by Time):** This lets you adjust the time in between shots by which you wish images to be grouped.
- **GPS Distance (Group by Location)**: Sets the range (in meters) by which location-based photos are grouped.

When you have set the parameters of your new search, click the Search button, and Smart Organize will generate a new results window.

Editing Photos in Browse

While most of ON1 Photo RAW 2022's image-editing power is found within the Edit module, you can perform many editing tasks on photos inside Browse. This includes changing metadata, labels and ratings, but you can also apply presets to an image or group of images, and can even copy Develop/Effects settings from one photo and paste them onto other photos directly within Browse. These operations are also available to any photos shared via ON1 Cloud Sync.

RATINGS, LABELS AND LIKES

Using a standard rating and label system, it is easy to sort and cull your favorites from the throw-away shots. Browse offers three ways, aside from keywords and subfolders, to mark and group similar images. All of these methods may be set several ways: from the Photo menu, the right-click contextual menu, clicking the badges on the image thumbnail or in the footer of Image view. There are also keyboard shortcuts associated with each classification option.

- **Star ratings**: Set from zero to five stars. Photographers often use five stars for their favorite images and one star for images they don't want to keep, but you can use this system in whatever way works best for you. You can adjust the rating using the 1 through 5 keys on the keyboard. You can also clear the stars on any image with the ` (backquote or grave) key.

- **Color labels**: There are five color labels as well. Color labels are a great way to mark sub-sets of images for special handling. You can set the color ratings by pressing the following keys: 6 (red), 7 (yellow), 8 (blue), 9 (green), 0 (purple).

An example of a photo in Grid view with a ratings, color and favorite attached.

- **Likes**: A common need for photographers is to mark their favorite images and the ones they want to delete. This is best accomplished with the Like classification. There are three options: Like (icon with a filled-in heart), Dislike ('X' icon) and Not Set (empty heart). By default, images are in the Not Set category until you change them. You can set your Liked images with the P keyboard shortcut, Dislikes with the X key, and clear settings with the U key.

Both star ratings and color labels are industry standards. When you use these tools, the settings are stored in the metadata and will be available in other photo editors and managers, like Lightroom. (Likes are proprietary and will only appear in ON1 Photo RAW 2022.)

> **TIP:** You can change the information displayed in the image thumbnails via the Thumbnail Options function. See "Changing the thumbnail display options" on page 22 for more.

Use Auto Advance when culling your photos

Photo RAW's Auto Advance feature—which can be turned on or off via the Photo menu—was designed to help you rank a group of images quickly: with Auto Advance turned on, apply a rating, color label or flag to an current image and Photo RAW will make the change and automatically move to the next image.

APPLYING EDIT MODULE PRESETS IN BROWSE

You can easily add a preset to any photo (or group of photos) in Browse, in any Preview mode (Grid, Detail, Filmstrip or Compare). Just click on the Presets tab, navigate to the category you wish to use, and click on the preset thumbnail to apply. If you don't like the look, you can Undo, or choose another preset. You can also use the fade slider to reduce the amount of the effect.

ON1 Photo RAW 2022 has a preset system that lets you save your complete settings from the Edit module. These presets are always available in Browse, so you can apply your favorite presets quickly and easily to a photo or a group of photos.

To apply a preset to an image, click on the Presets panel. There you will see any built-in presets supplied by ON1, as well as any presets you might have created or installed yourself. The panel is divided into categories, like B&W Films and Cinema. Click on a category to open it and show that category's presets.

To see a larger representation of what your selected photo will look like, click the Quick View Browser icon in the preset category's title bar. That will display an overlay window with all of the presets in that category.

To apply a preset to a photo, simply click on the preset in either the Category preset browser or in Quick View Browser mode. Presets applied in Browse are not cumulative; after you've applied one preset, clicking on another preset will remove the previous one and apply the new one. (If you have applied edits in either Develop or Effects, those modules' settings will be erased if the preset has settings in those modules.)

The Presets panel has a broad range of preset types, all of which can be applied in the Browse module.

Because Photo RAW is non-destructive, going to any of the Edit module tabs

will display all of the settings applied by the preset. Once in Edit, you can adjust the settings, switch preset, or make any other editing changes.

To remove a preset from a photo, click on the photo and choose Reset All Settings from the Settings menu. You can also remove individual settings made in either the Develop or Effects tabs, if you prefer.

(For more detailed information about how to create and edit presets, see "Presets" on page 107.)

NOTE: If a photo has had a preset applied in Browse, or has otherwise been edited in one of Photo RAW's editing tabs, you will see a small badge with a '+/-' icon in the lower-right corner of the thumbnail. These badges are visible in the Grid, Filmstrip and Compare views. (See the image on the right for detail.)
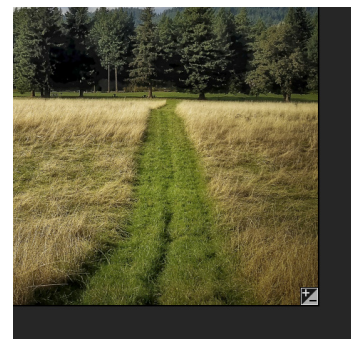
COPYING SETTINGS AND SYNCHRONIZING EDITS

In addition to applying presets, you can copy all of the existing edits made in one photo and paste them directly onto other images in the Browse module. This includes every editing operation you can perform in the Edit module. There are two primary methods for doing this—Copy/Paste and Sync—but they achieve the same end goal: it's more a matter of preference in which operation you choose.

To copy the edit settings from an image, click on the source file and choose Settings > Copy Settings. Then, click on the new image and choose Settings > Paste Settings. A window will appear, giving you the option of applying any or all of the edits on the original photo, or you can select which edits—everything from individual settings in Develop's Tone and Color pane, to masks, cropping, and text if used—you wish to paste into the new photo. (You can also select a group of photos and paste the edit settings onto the group.)

The Copy/Paste Settings commands can be useful when you wish to paste settings across a number of photos in different folders. As long as your Browse session is active, Photo RAW will remember the last copied settings, and you can paste them onto other photos as you wish.

With the Sync Settings command, select the image you want to use as your source. Then, holding down the Shift key (if you are selecting an image or group that is contiguous with the source), or the Command (Mac) or Control (Windows) key, and click on the image(s) that you wish to apply the source file's edits.

In the Apply Settings window—accessible from either Paste Settings or Sync Settings—you can apply nearly all Edit module operations to another image or group of images. Filled circles to the left of a setting mean that the setting will be applied; click the circle if you don't wish that setting to be applied.

Your selection should have the source image highlighted in blue, and the target images highlighted in gray. If that is correct, click on the Sync button at the bottom of the Preview area, or choose Sync Settings from the Settings menu. The Apply Settings window will open, and you can follow the same procedure to synchronize your edits.

Sync All Settings

To sync everything from a source photo to another photo or group of photos Settings > Sync All Settings will bypass the Apply Settings window. Select your source and destination photos and select the command. Everything—including cropping, text and masks—in the source image will get synced.

RESETTING EDITS IN BROWSE

Any edits you have made with ON1 Photo RAW 2022 can be completely reset from within the Browse module. This includes photos you might have pasted or synchronized settings onto inside Browse, or anything done within the Edit module.

The Settings menu offers eight options for erasing edits made to a photo:
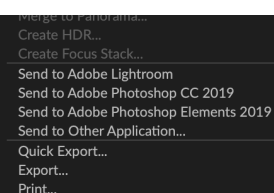
- **Reset All Settings**: This removes all adjustments made to a photo in the Edit module. (This option can also be accessed from the Reset All button at the bottom of the Browse window.)
- **Reset Develop Settings**: Removes only the settings applied in the Develop tab.
- **Reset Effects Settings**: Removes only the settings applied in the Effects tab.
- **Reset Sky Settings**: Removes only the settings applied in the Sky tab.
- **Reset Portrait AI Settings**: Removes only the settings applied in the Portrait tab.
- **Reset All Retouching Tools**: Resets any retouching applied anywhere in the Edit module.
- **Reset Local Adjustments:** Removes all local adjustment layers.
- **Reset Liquify Tool:** Resets any application of the Liquify tool in the Edit module.
- **Reset Crop:** Returns the image to its original, uncropped size.
- **Reset Text:** Removes any text blocks.

You can undo any of these changes immediately after making them; otherwise resetting with the appropriate option will permanently reset the image.

> **NOTE:** The Reset settings options—as well as the Copy/Paste and Sync options—are not available when you are working with layered photos in Browse. You can, however, Copy and Paste settings between layers in the Edit module.

SEND TO

Browse lets you send images you are viewing to other applications for editing. This is done via the Send to option, which is available from the right-click contextual menu or the Edit menu. Browse detects the following common photo managers or editors and lists the latest installed version:

Merge to Panorama...
Create HDR...
Create Focus Stack...
Send to Adobe Lightroom
Send to Adobe Photoshop CC 2019
Send to Adobe Photoshop Elements 2019
Send to Other Application...
Quick Export...
Export...
Print...

- Adobe Photoshop

- Adobe Photoshop Lightroom

- Adobe Photoshop Elements

You can set up any application you want to send your photos to. Simply select the Send to Other Application option. Then select the application you want to send your photos to. The application will be remembered and listed with your other Send to options. (For example, if you use an email client you can add it to easily email photos.)

When you send an image to another application, you will be presented with the Edit in dialog box from ON1 Photo RAW 2022. There you'll have the option to send either the edited photo or the original, unedited image. If you choose to send a copy, you'll have options for choosing the file type, color space, bit depth and resolution. If you use the same set of options every time, you can check the "Don't ask me again" box in the window, and you won't be prompted again. (To change this setting, go to the Files tab in Photo RAW's Preferences (see page 245).)

The Edit In dialog, with the Copy Options section expanded.

VERSIONS

ON1 Photo RAW's Versions feature lets you create a 'virtual' copy of an image, which you can edit in a completely different manner than the original file, but without actually duplicating the image. This lets you easily try different preset treatments, crops, and retouching operations on a copy of the same image without having to lose any work—or see your disk space increase.

Creating a version is easy: in any of Browse's view modes, choosing Create Version from the Settings menu (or choosing Command-' or Control-') will create a new version of the currently selected (or viewed) photo. A copy of the image will be created next to the existing one in your library, with a 'v1' added to the filename. (Additional versions will be numbered sequentially.)

A versioned photo will have a 'v1' (or higher) attached to the end of the filename, and a small badge, split into dark and light triangles, in the lower right corner of the thumbnail.

A version acts like most images inside Photo RAW. You can open it in any of the Edit module tabs; crop or make any adjustments with all of Photo RAW's tools and filters; and you can edit its metadata independently of the original. You can even export a versioned photo or use it in Resize (Photo RAW creates a rendered file in those instances). You can not create a version of an .onphoto file that has layers in it, however. You must first flatten the image inside the Edit module. (See "Working with Layers" on page 173 for more.)

In Grid view, versioned photos will have a small square badge split into light and dark triangles.

Using ON1 Photo RAW 2022 with two displays
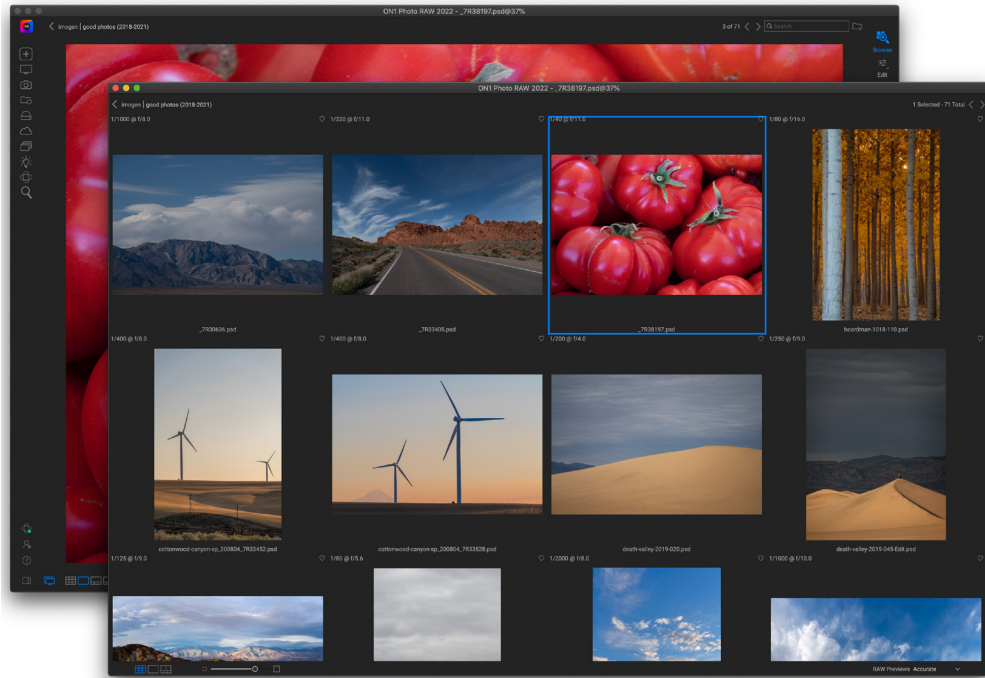
Photo RAW's Dual Mode lets you open a new browser-style window, which can be placed on a second display, or be used to present on a TV or projector.

You can use Photo RAW's Dual Mode feature to display a second copy of your photos in an added browser-style window. Here, you can view folders of images as thumbnails, and navigate through them, while displaying the full-size images in the primary window. This can help your productivity when you have an additional monitor connected to your computer, reducing the need to switch between Grid and Detail, Filmstrip or Compare view. It can also be useful when you wish to present photos on a projector or TV, and don't want to display the entire Photo RAW application window.

Dual Mode only works with the Browse and Edit modules. In Browse, you can choose how you wish the second window to act, either displaying in Grid view, with the primary window working in the three other primary view modes (Photo, Filmstrip or Compare), or vice versa. As you navigate images in the Grid, the other window will display the currently selected image.

When in the Edit module, the second window works solely in Grid view, displaying thumbnails of the current folder. If you click on another image in the grid, that image will be presented in the main window.

TURNING DUAL MODE ON

To use this feature, chose Dual Mode > Show from the Window menu, or click the Dual Mode icon at the bottom left of the main window. The first time you use Dual Mode, the second window will open on your primary display. Simply drag the window to your secondary display, and from that point on, Photo RAW will remember the location of the second window. (When the window is placed in the second display, you can choose Dual Mode > Full Screen Mode from the window menu to have the window fill the entire screen.)

The icons at the bottom of the secondary window are a subset of the main application window: in Browse, you will see options for Grid, Photo and Compare views; in Edit, only the Grid view icon will be visible. The Size slider can change the size of thumbnails (in Grid view) or the zoom level (in Detail and Compare view).

Using ON1 Cloud Sync with Photo RAW
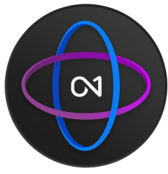
ON1 Cloud Sync is an optional cloud storage service and sync technology that lets you capture, edit, and access photos seamlessly between multiple computers and mobile devices. The service is designed to share photos when you're using the subscription versions of ON1 Photo RAW 2022 and ON1 Photo Mobile. Cloud Sync also lets you sync custom presets and extras between two installations of Photo RAW (Mac and Windows).

There are two storage options for ON1 Cloud Sync accounts, 200GB and 1TB, and multiple methods for signing up. If you have purchased an ON1 Photo RAW subscription, it will automatically be available in both Photo RAW or ON1 Photo RAW for Mobile after you have signed in to your ON1 account.

From ON1 Photo RAW 2022, photos are published and synced to the ON1 Cloud via cataloged folders or albums, and you can choose to publish photos either as editable previews or in their original format (including raw). See "ON1 Cloud Sync File Formats" on page 65 for specifics on the different file types and why you would use one over the other.

When you're using the ON1 Photo Mobile app on your smartphone or tablet, all photos on that device are published to the cloud in their original format, and reside in a single folder called Local Photos. (You can also create albums with ON1 Photo Mobile.)

VIEWING YOUR ON1 CLOUD SYNC STATUS

In the lower right section of the left sidebar is the ON1 Cloud Sync status icon, which has a small colored dot—in one of four colors—that indicates the status of ON1 Cloud Sync on the current computer. The indicator colors are:

- If there are no uploads or downloads in process, and the connection to the ON1 Cloud is on, the dot will be **green**.
- When Photo RAW is in the process of uploading or downloading images or other information from the cloud, the dot will be **blue**.
- If there is a problem with the internet connection, you aren't logged in, or if you are running low on available space, the dot will be **red**.
- It will be **gray** if you do not have an ON1 Cloud Sync account.
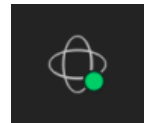
Clicking the status icon will bring up your ON1 Cloud Sync dashboard (shown on the right). This window shows the status of any current uploads, your available cloud storage, and includes links to the iOS and Android versions of the ON1 Photo Mobile app. Clicking on the Account button will take you to your account page on the ON1 website. The Learn button displays a window with information on how to get started with ON1 Cloud Sync.
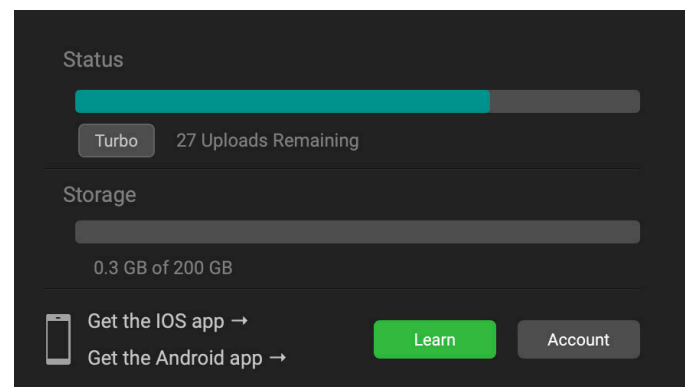
The Turbo button is used to speed uploads; it will take as much processing power as it can to sync photos, to the limit of your upload bandwidth.

VIEWING OTHER ON1 CLOUD SYNC DEVICES IN BROWSE

When you have shared ON1 Cloud Sync devices, you can see a list of them by clicking on the ON1 Cloud Sync icon in the Shortcuts bar on the top left side of the Photo RAW window.
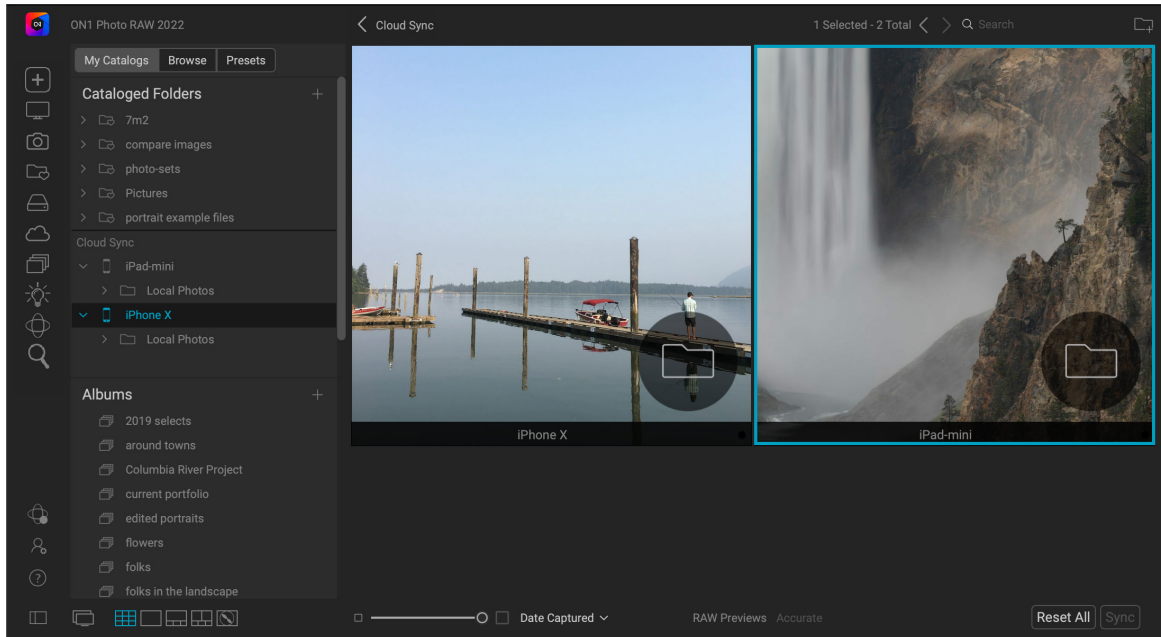
Clicking on the ON1 Cloud Sync icon at the bottom of the Shortcuts bar on the left will display a list of your connected devices. Each device will appear as a folder. Mobile devices will display a single folder, called Local Photos, while any Mac or Windows computer will display a list of the cataloged folders synced with the ON1 Cloud Sync service.

ON1 Photo RAW 2022 will display your connected devices in the preview area as folders in Grid view. Clicking on one of those folders will open with a list of that device's synced photos. For mobile devices, you will see a single folder, Local Photos, which contains all of the photos that are on that device. For Windows and Mac computers, you will see a list of all cataloged folders from that device.

You can view and edit any of the photos on a synced device from within ON1 Photo RAW 2022, and you can drill down into the folders in the same manner you would for any other folder in Photo RAW. You can sort the photos, add them to new or existing albums, adjust metadata and add keywords to them.
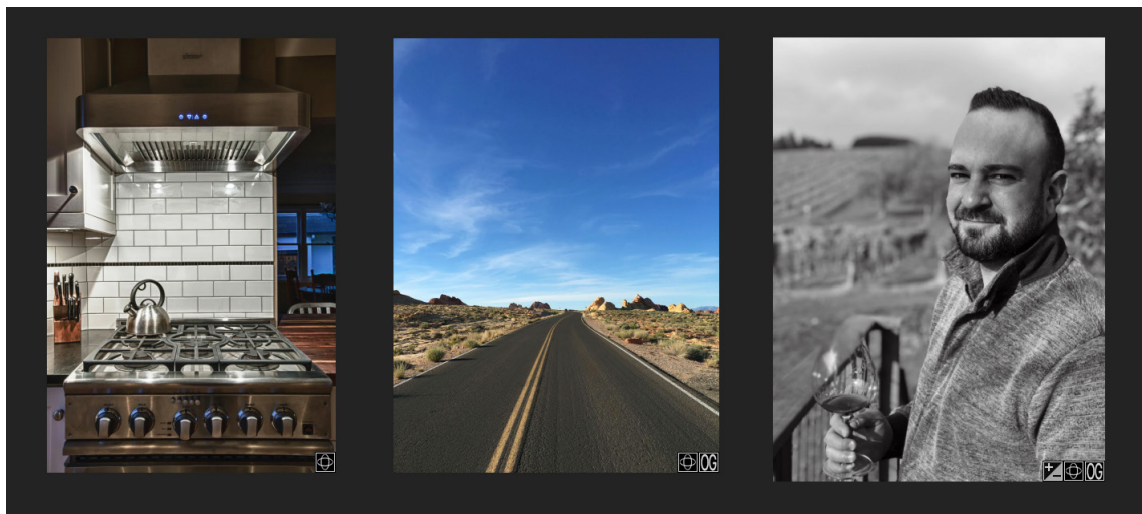
Photos synced to the ON1 Cloud from other devices will have a badge when you are viewing a folder or album in Browse's Grid view. If the synced photo is an editable preview, it will have the Sync badge in the lower right corner of the thumbnail (image left, above). If it is an original, it will also have a badge with an 'OG' label (center). And, if the photo has been edited, you will also see the '+/-' label (right).

When viewing photos in Grid view, you can tell if a photo is synced from another device by the small Cloud Sync badge in the lower right portion of the thumbnail. If the photo in question is an original — as opposed to an editable preview — there will also be a badge with the initials 'OG.' These badges will be displayed on all published folders, devices and albums when you are working in Grid view.

ON1 CLOUD SYNC FILE FORMATS

With ON1 Photo RAW 2022, you have the option of publishing photos to the ON1 cloud in one of two formats, the original photo, or an editable preview, which uses a proprietary compressed-raw file format developed by ON1. This editable preview can be up to 75% smaller than the original raw file, while preserving the original's tone and color fidelity. Using this option lets you keep more of your photos in the cloud, and, with either format, you can still edit a photo on one device, and your edits will be synced back to the originating computer, so that your original file is updated with those edits (and any other metadata changes you might have made).

As noted, the savings in storage space can be quite great. Use these basic guidelines for photo storage options:

- With a camera that creates 30MB raw files, you should be able to store more than 5,500 raw originals in the cloud with a 200GB ON1 Cloud Sync service plan, and more than 27,000 photos with the 1TB plan.
- If you are shooting JPGs with that same camera, we estimate that you would be able to store more than 20,000 JPG originals with the 200GB plan, and more than 100,000 photos on the 1TB plan.
- If you chose to upload editable preview files instead of originals, you should be able to store more than 33,000 photos in the cloud with the 200GB plan, and more than 160,000 with the 1TB storage plan.

Remember, while you can store photos in the ON1 Sync cloud using either format, and in any combination, your originals are always stored securely on the device that created or imported them.

> **NOTE:** Photos taken or imported with the ON1 Photo RAW for Mobile app are always uploaded in their original format.

When to choose one sync format over another

In most cases, if you are working on two computers (a desktop and laptop, for example), working with editable previews should be more than sufficient for most workflow requirements. You can edit and update any metadata, including ratings, keywords and more, and work within all of the tabs in the Edit module. The fidelity and tonal range of the preview files is excellent, and all of your edits will be applied to the originals on the other device.

You should sync folders and albums as originals when you want to work with an original photo on another computer. There are four primary reasons for this: you wish to create layered files; build HDR, panorama or focus-stacked composites; resize a photo with the Resize module; or you wish to print a photo at the highest-possible quality.

In these instances, if you have an original photo on another ON1 Cloud Sync device, you can download a copy of that original from the cloud to your current computer by right-clicking on the photo in Browse and choosing Download Original from the pop-up menu. If the original version is in the cloud, you will be prompted to save the copy in a location on your computer.

Depending upon your intent, you can delete this copy later, or save it back to a published folder or album. For more information on these instances, see , , and .

Managing sync options in Photo RAW

Photos published to ON1 Cloud Sync are managed in ON1 Photo RAW 2022 at the folder or album level. What this means is that you can set up different folders or albums to sync as editable previews or originals, and you can change this option at any time by right-clicking on the folder or album and choosing the Sync Options item from the pop-up menu.
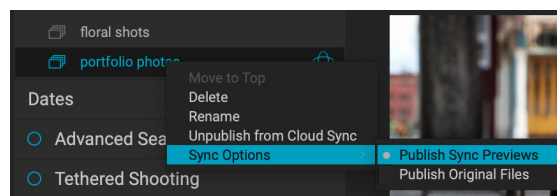
You can publish (or unpublish) an album or cataloged folder at any time by right-clicking on the item name and choosing Publish/Unpublish to ON1 Cloud Sync from the menu.

It is worth noting that you cannot change the sync option for individual photos: it can only be done at the album or folder level. You can however, selectively change the sync option for the subfolders in a cataloged folder.

BASIC CLOUD SYNC WORKFLOW WITHIN ON1 PHOTO RAW

As noted in the sections on cataloged folders (page 30) and albums (page 33), publishing photos from ON1 Photo RAW 2022 is straightforward. When creating an album or cataloged folder, you have the option to publish and sync those photos as either originals or previews, or you can wait until a later time and publish them by selecting the item and choosing Publish to ON1 Cloud Sync from the pop-up menu. By default, when you publish via the pop-up, Photo RAW will upload editable previews to the cloud, but you can change this via the Sync Options menu item, as described in the previous section.
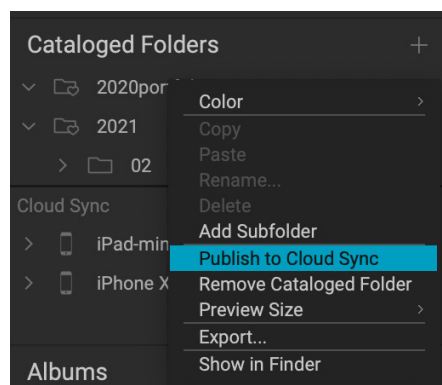
To change the publishing status of an album or folder, right-click on the item and choose the appropriate format from the Sync Options pop-up menu.

When you're working with any photos that are based on a remote Cloud Sync device, regardless of whether it was created on a computer with Photo RAW or on a mobile device with ON1 Photo Mobile, you will be able to perform any changes to metadata, or make any edits in the Edit module, and those changes will be synced back to the original file on the original device. This doesn't matter if the file in the cloud is an editable preview or an original.

Syncing presets and extras with Cloud Sync

You can also sync your Photo RAW presets and imported extras between your licensed computers with Cloud Sync. This option can be turned on or off via the Sync Presets checkbox in the Cloud Sync Preferences pane (see page 248).

CLOUD SYNC, PHOTO RAW AND PHOTO RAW FOR MOBILE

On mobile devices, which includes both smartphones and tablets, the ON1 Photo RAW for Mobile app acts as a camera — with full raw-capture support — and an import device, which can add your photos immediately to ON1 Cloud Sync. ON1 Photo Mobile also has a subset of Photo RAW's Edit module built into it. You can shoot photos with your phone, edit them using ON1 Photo Mobile, add them to existing Cloud Sync albums and they will automatically be shared to the cloud for viewing and editing.
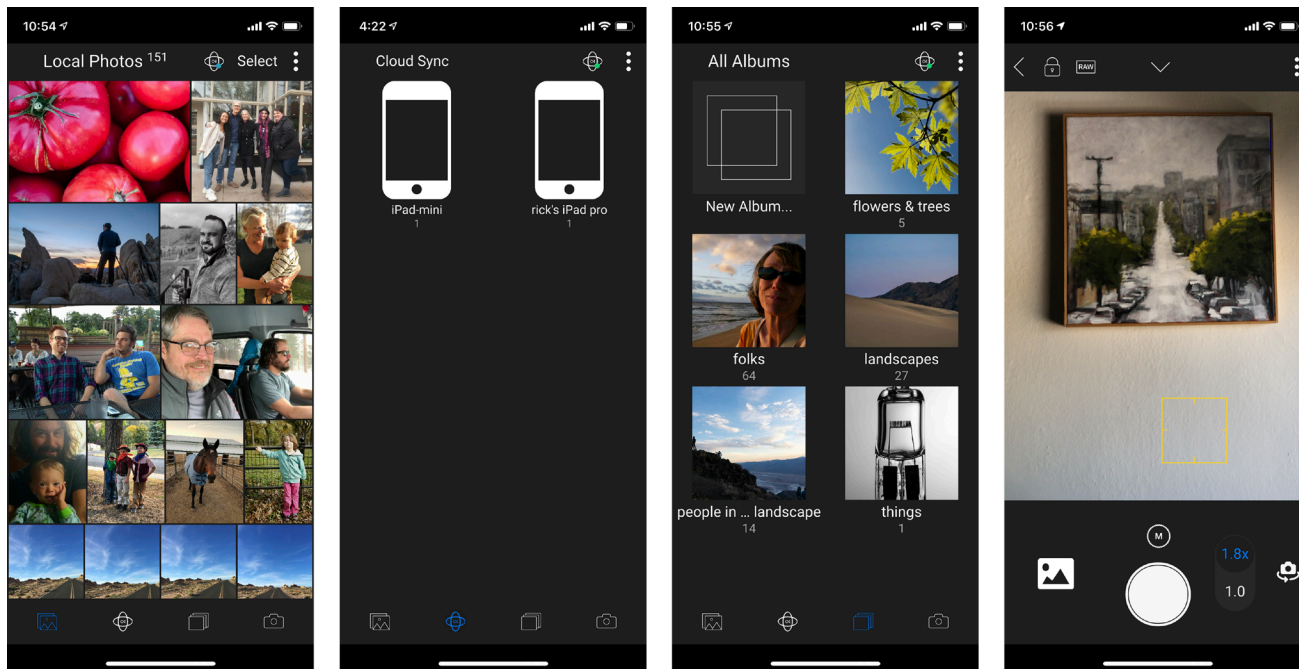
The ON1 Photo Mobile app, available for both iOS and Android phones and tablets, is designed to share and edit your mobile photos, and access and edit photos on your other ON1 Cloud Sync devices. The app has four tabs, a Local Photos container (above left), which is where your photos from that mobile device reside; ON1 Cloud Sync (center left), which lets you access the photos from other shared devices; Albums (center right), which displays existing Cloud Sync albums (and lets you create new albums); and Camera (left), which is a full-featured smartphone camera capable of capturing raw photos.

All of the photos shot and imported onto a mobile device with ON1 Photo RAW for Mobile are captured to a location on the device called Local Photos, which is what you see when you look at a mobile device in the ON1 Cloud Sync pane in ON1 Photo RAW 2022. (See "Viewing other ON1 Cloud Sync Devices in Browse" on page 64.)

There are four tabs in the ON1 Photo Mobile app:

- **Local Photos**, which displays the photos on that device;
- **Cloud Sync**, which displays your synced devices, and lets you drill down into them to view the photos on those devices;
- **Albums**, which displays synced ON1 Cloud Sync albums, and lets you create your own synced albums directly from your mobile device; and
- **Camera**, a full-featured, pro-level camera capable of capturing raw images and syncing them immediately to the ON1 cloud.

ON1 Photo Mobile uses the same RAW processing engine developed for ON1 Photo RAW, and has a non-destructive raw editor built into the app. The basic editing controls are similar to those found in the Develop tab of Photo RAW's Edit module: there are adjustments for Exposure, Contrast, Shadows,

Midtones, Highlights, Whites, Blacks, White Balance, Noise, and Sharpening. The app also includes five filters from the Edit module's Effects tab.

Viewing photos in ON1 Photo Mobile

You can view all of your photos — local or synced from the cloud — in ON1 Photo Mobile via standard gestures and taps. Tapping on an album, for example will display a grid of that album, and you can pinch two fingers together and apart to change the grid size. Tap on a photo to view it in Detail view, and pinch to zoom in.

Photo Management and Editing with ON1 Photo Mobile

When you wish to share or edit a photo with ON1 Photo Mobile, tap on it from any Grid view screen. This will display the photo in Detail view with the photo's name, and three icons at the bottom of the screen: one for sharing the photo, one for editing, and the other to delete the current photo (this only applies to photos that reside in that device's Local Photos folder).

Sharing options include saving a copy of the photo to your camera roll, or to be shared via your device's social media sharing options. The sharing window includes sizing options (medium, large, and full-size) for your exported photo.

Editing photos with the app is similar to editing photos in Photo RAW, although ON1 Photo Mobile doesn't have all of the tools and filters found in the desktop app. ON1 is committed over time to bring the mobile app as close to parity with the desktop version as possible.
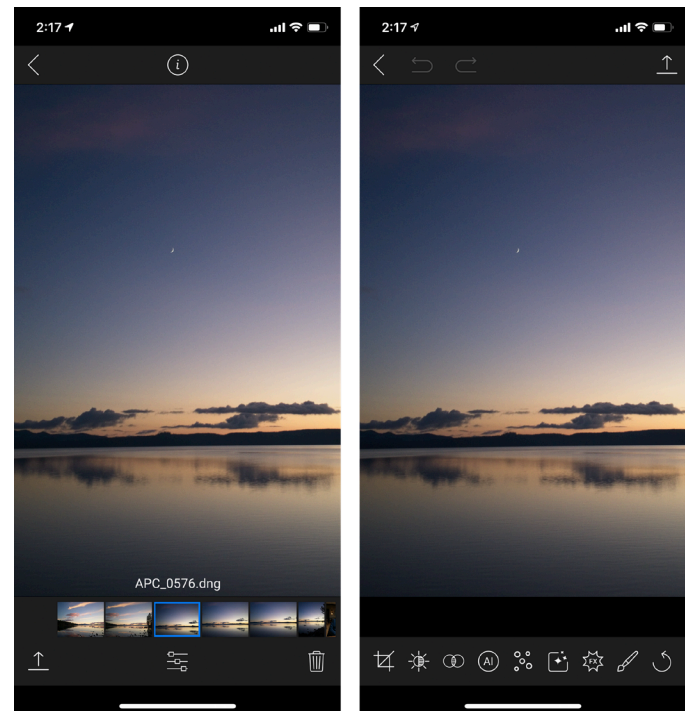
When you're viewing a photo in ON1 Photo Mobile, tapping the center icon at the bottom of the screen will take you into Editing mode.

Tapping the Edit icon at the bottom center of the screen will display eight editing functions underneath the photo:

- **Crop:** resizes and levels your photo.
- **Tone:** for adjusting exposure, contrast, highlights, shadows, midtones, white and black points, and for adding structure or applying dehaze.
- **Color:** lets you adjust the color balance of the photo.
- **AI Auto:** performs an automatic tone adjustment on your photo using a proprietary ON1 algorithm.
- **Details:** for applying sharpening and noise reduction.
- **Presets:** ON1 Photo Mobile includes a variety of presets in multiple categories, letting you achieve a great look with one click.
- **Effects:** lets you apply nine of Photo RAW's Effects filters: Black & White, Color Adjustment, Curves, Dynamic Contrast, Film Grain, HDR Look, Glow, Split Tone, and Vignette.

- **Local Adjustments:** In the same way that Photo RAW lets you apply targeted adjustments to portions of a photo, ON1 Photo Mobile has a Local Adjustments module, where you can fine tune portions of your photos, with the same masking tools found in the desktop app.
- **Reset:** The rightmost icon will reset all of your edits, returning your photo to its original state.

For more information about the various editing options available in ON1 Photo Mobile, and how they relate to the ON1 Photo RAW 2022 editing engine, see "Working in the Edit Module" on page 70.

> **NOTE:** ON1 updates Photo Mobile regularly, adding new effects and other features to the app. For an up-to-date list of features and enhancements, see the What's New in Photo Mobile page on the ON1 website.

Mobile editing limitations with synced photos

While ON1 Cloud Sync and ON1 Photo Mobile have been designed to provide a seamless editing experience between desktop and mobile devices, there are two instances where you might run into an situation where you can view, but not edit a synced file inside ON1 Photo Mobile:

- When you've edited a synced ON1 Cloud photo with Photo RAW using any Effects filter that is not present in ON1 Photo Mobile.
- Any .onphoto file cannot be edited with ON1 Photo Mobile. This includes HDR, panorama and focus-stacked composites, as well as layered files.

Any photo synced with ON1 Cloud Sync that has *not had editing adjustments* made to it can be edited with any ON1 Photo RAW 2022 or ON1 Photo Mobile device, whether the photo in question is an original or an editable preview. And all ON1 Cloud Sync photos will be visible on all Cloud Sync devices, regardless of their originating format.

PART 3:
WORKING IN
THE EDIT MODULE

ABOUT THE EDIT MODULE

ON1 Photo RAW 2022's photo-editing power is found in the Edit module, which consists of five distinct editing functions, each separated into tabs:

- **Develop** is where you perform basic, global editing operations, such as adjusting tone and color, removing noise—including ON1's breakthrough NoNoise AI technology—sharpening and more. It is the perfect place to begin editing your photos. (See page 119.)

- **Effects** is the stylization center of Photo RAW, with 31 filters—offering such operations as black and white conversion, HDR stylization, glows, color enhancement and more— that can be stacked in any order, all with extensive blending and masking options. (See page 131.)

- **Sky Swap AI** lets you replace boring skies quickly and easily. Sky Swap AI automatically masks out the sky in your photo, letting you replace it with any of more than 100 included skies. You can even import your own skies directly from within the tab. (See page 155.)

- **Portrait AI** uses machine-learning algorithms to automatically find and retouch all the faces in a photo, apply smoothing, reduce blemishes, and brighten eyes and teeth. (See page 160.)

- **Local Adjustments** are designed to apply basic, targeted edits to parts of your photos, letting you perform traditional photo-editing tasks—like dodging and burning—with ease. You can also add custom brush overlays to an image via the Local Adjustments tab. (See page 167.)

Switching between the different tabs in the Edit module is as simple as clicking on the appropriate tab. While you work on an image, all of your settings in each tab are saved while you edit. All edits you make to an image are preserved non-destructively, and you can go back to any image at any time and make changes or corrections to it.

Photo RAW 2022's Edit module also includes a Layers pane, which lets you stack multiple images together to achieve sophisticated composites that aren't available in many standalone photo editors. And, because the Edit module is entirely non-destructive when you use Photo RAW as a standalone app, you can re-edit your compositions without worry. (See "Working with Layers" on page 173 for more.)

To help you save time and create the looks that you love best, ON1 Photo RAW 2022 also includes a robust preset system that lets you save settings made in any of the editing tabs—along with some of the retouching tool operations and masks—for applying to other photos. Editing presets can be applied in the Edit module, or in Browse, and, like all other elements of Photo RAW 2022, are re-editable. (Presets are discussed in detail on page 107.)

In addition to presets, you can copy and paste Edit module settings from one file to another, or synchronize the edits on one photo to a group of photos. These operations can all be performed in any of the editing modules, as well as in Browse, adding to ON1 Photo RAW 2022's extreme flexibility. (See "Copying settings and synchronizing edits" on page 112 and "Applying Edit Module Presets in Browse" on page 58.)

If you are using the ON1 Cloud Sync service, your synced photos are editable in ON1 Photo RAW, regardless of which sync storage format you choose. All of your edits will be synced back with the photos on their originating device, and will be fully re-editable in Photo RAW. The primary exception to this is when you are using Layers, which must be stored on the device that created the layered file. See "Using Layers with Synced ON1 Cloud Files" on page 180 for a more detailed description of the workflow for Layers and ON1 Cloud Sync.

Using Photo RAW as a Raw Editor

ON1 Photo RAW 2022 offers true non-destructive raw editing capabilities. This means you can view your images in the Browse module, open a raw file in any part of the Edit module and apply edits—including cropping, healing and local adjustments—and Photo RAW will always be working with your original file. At any point, you can go back to Develop, Effects, Sky Swap AI, Local Adjustments or Portrait AI and change any or all settings you have made. What's more, when you're working with layers, Photo RAW will save your work in a non-destructive format as well, using a Photo RAW-specific 'onphoto' file format. This format retains all layer and editing information, and, when you wish to export a composited image for sharing or other uses, you can easily export it in any format supported by Photo RAW.

THE EDITING PIPELINE IN ON1 PHOTO RAW 2022

There are many editing operations you can make to a raw file (or other supported file format) with ON1 Photo RAW 2022, from broad global adjustments for exposure and color, to the application of effects, to cropping and retouching, the addition of local adjustments to sections of a photo. Because there has to be some structure of how edits are applied to a raw file, it might be helpful to understand the order in which edits are applied to a raw file. Whenever you view an edited image without additional layers, this is the order in which ON1 Photo RAW 2022 applies edits:

1. The base image is always at the bottom of the stack. This is your original, and you can always get back to that file.

2. Since retouching—operations like removing dust spots, editing blemishes or skin imperfections—is often the first thing many photographers do to their images, Photo RAW applies these operations first. This way, all subsequent edits will incorporate these changes.

3. Next are most settings applied in the Develop tab. This includes the application of color profiles, global exposure, color correction, sharpening and noise reduction (unless NoNoise AI is used, in which case those settings are applied to the base image).

4. Local adjustments made to an image are applied next.

5. Any Transform operations are applied after local adjustments.

6. Edits made in the Portrait tab are applied next.

7. Any filters applied in the Effects tab are applied last.

8. Text layers sit above the image stack.

9. Finally, any cropping or rotation information made to an image is applied to the file.

When working with multiple layers, steps 1 through 7 are applied for each layer, with the bottom layer at the bottom of the 'stack', and the topmost layer at the top. After all the layers' edits have been applied, Photo RAW adds any text, followed by cropping and rotation information, to complete the document pipeline.

You do not have to edit your photos in this order; this is just the way in which Photo RAW 2022 applies the edits you make to an image. You might find a dust spot, for example, only after changing exposure settings in Develop or applying a filter in Effects. You can then use the Perfect Eraser to remove the spot and continue with your editing, and Photo RAW 2022 will apply it at the proper place in the stack.

ON1 Edit Module Main Screen Overview

Edit provides you with an easy-to-use work space for editing your photos. Below is an overview of the main window sections of the Edit module:

A. **Tool well**: Tools for working within the Edit module.

B. **ON1 Cloud Sync Status/Preferences/Help**: Shortcuts to ON1 Cloud Sync status, preferences and help.

C. **Preset panel**: List of all installed presets (by category). When working in the Effects tab, a Filters panel is visible as well.

D. **Search**: Searches presets (and filters, when working in Effects) by name.

E. **Window options**: (from left to right) Open/close the Presets panel; toggle Dual Display Mode on/off; switch between Photo and Filmstrip views (Filmstrip shown).

F. **Preview Window**: Displays the current photo in detail view.

G. **Preview option toggles**: Magnification slider for current image, compare (before/after) mode, show/hide mask, turn soft proofing and preview on or off.

H. **Tool Options bar**: Options and settings for currently selected tool.

I. **Photo Information pane**: Navigator, Levels (histogram), Info, History, Snapshots.

J. **Layers pane**: Add, edit and manage layers here.

K. **Edit tabs**: Tabs for accessing the Develop, Effects, Sky Swap AI, Portrait AI, Local Adjustments. Clicking on each tab brings up the settings for that tab.

L. **Reset bar**: Reset all (all Edit module settings), Reset (resets the current tab's settings), Sync settings with previously edited photo (when in Filmstrip view)

M. **Module selector**: Switches between Browse and Edit modules (if you are editing a photo as a plug-in, the Browse icon will be disabled).

N. **Output**: Shortcuts for switching to the Resize module, as well as for printing, exporting and sharing the current photo.

The look of the Edit module in ON1 Photo RAW 2022 is similar to that of Browse, with slight variations that are specific to photo-editing tasks. The left side of the window contains a tool well with Edit-specific tools, and a Presets pane (when using the Effects tab, you will also see a Filters tab alongside Presets).

The right side of the screen contains the same panes at the top—Navigator, Levels/Histogram and Info—as well as a History pane, the Layers panel, and tabs for the four editing areas inside Edit: Develop, Effects, Portrait and Local. Clicking on a tab will bring up the options and settings for that area. When viewing images, you can work in either Photo or Filmstrip view, each view works the same as they do in Browse (See "Working in the Preview Area" on page 37 for more).

Photo RAW provides several ways to navigate and view your image in the Edit module's Preview window:

- By default, your image is presented in Fit view, which displays the image within the preview area, and the Zoom tool is selected. Clicking on the image with the Zoom tool will zoom in to 100%, and the cursor will change to the Hand tool. You can move around your image by clicking and dragging in the preview area. Clicking once will take you back to Fit view.

- You can also zoom in and out via the View menu and the Navigator pane. The Navigator pane displays a bounding box around the area currently on-screen, and you can reposition what is displayed in the preview area by clicking and dragging the box around the pane. Clicking on one of the buttons at the bottom of the Navigator pane will automatically zoom to Fit, 100%, 50% or 25% views. (The buttons are visible in the Zoom tool's Options bar.)

- When the preview zoom is larger than the viewable area, holding down the spacebar will display the Hand tool if any editing tool is selected. Clicking and dragging while holding the spacebar will reposition your image at the current view level.

Navigator, Levels, Info, History and Snapshots

At the top of the control panel on the right of the main window are the Navigator, Histogram, Info, History, and Snapshot panes. These tools can be useful for inspecting and viewing details of your image, for looking at all of the Edit module adjustments made during a session, and for saving a snapshot of an editing session in a specific place.

THE NAVIGATOR PANE

This gives you a thumbnail view of your image as it is displayed in the current view. The white square region marks the image area that is visible in the preview pane, and you can pan your image by clicking and dragging inside the square. (You can also use the Hand/Zoom tools to move around the image view, and the Nav pane will update.)
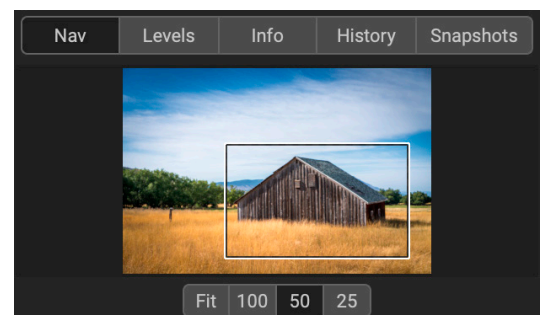
At the bottom of the Navigator pane are several zoom buttons representing percentage zoom views (100%, 50% and 25%). Click on one of the buttons to change the view. Fit zooms to fit the current canvas size, while 100 zooms to 100%, displaying the actual pixels.

THE LEVELS PANE

This gives you a color chart of the shadow, midtone and highlight areas based on the image RGB values (commonly known as a histogram). This is useful to show areas within the image that may be clipping. Clipping is when your image contains pure blacks or white and can signify loss of highlight or shadow detail.

The left side of the histogram represents the shadows, while the right represents the highlights. At the top of each end is a triangle. If the triangle is lit, there is clipping on that side of the histogram. If you click on the arrows, you will activate the clipping overlay on your image, which displays the areas that are clipped. Those areas with a blue overlay are pure black, while the areas with the red overlay are pure white. You can turn the clipping view off again by clicking on one of the triangles. You can also temporarily enable clipping view by holding down the J key at any time. The clipping view is useful when you are making adjusts to the brightness and contrast of your image. (See "Focus and Clipping views" on page 20, for more information about using the clipping view.)

The Histogram pane also displays the RGB values under the cursor at the bottom of the pane.
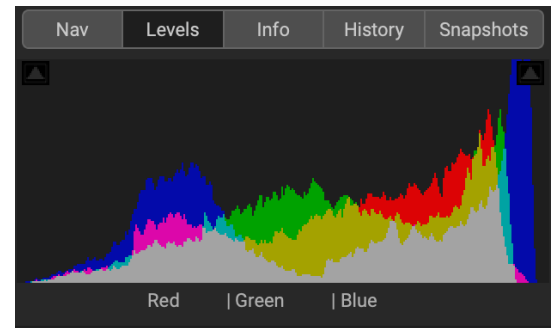
THE INFO PANE

The Info pane displays metadata for the current image in an easy-to-read format. This metadata includes camera make and model; lens focal length; capture date and time; file type; ISO setting; shutter speed; aperture; and exposure compensation.

The Info pane also displays file-specific data, including image dimensions and resolution. If any of the metadata fields are unavailable they will be left blank.

Settings Applied

At the bottom of the Info pane is a section that shows all of the operations from the Edit module that have been applied to the current image. Clicking on the right arrow to the left of the label will display a list of every tab in the Edit module, as well as primary adjustment options, including cropping, retouching and sky replacement, and text operations. If an image has had any adjustments made to it, that section of the Settings Applied area will be represented in white type, and you can use the arrows to the left of the label to drill down further into the Develop, Effects, Portrait, and Local Adjustment tabs to see which adjustments were made to an image. (On an image that has had no adjustments, all of the settings will be grayed out.)
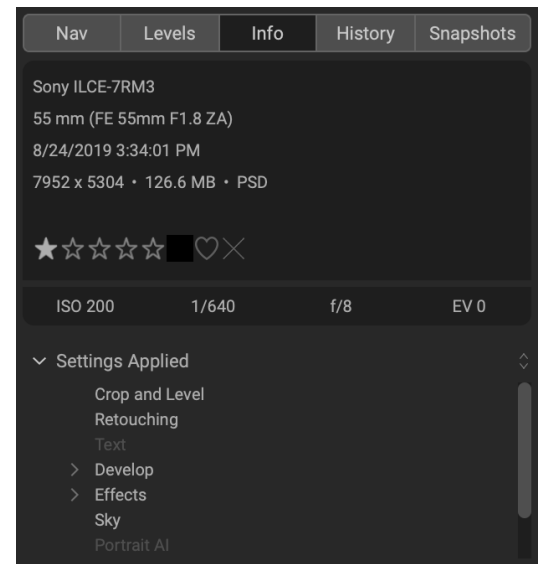
Double-clicking on any of the available items inside the Settings Applied area will take you to that specific setting inside the Edit module, where you can make any desired changes.

THE HISTORY PANE

ON1 Photo RAW 2022 has a robust Undo capability, which is helpful when you wish to back up a few steps during the editing process. When you want to go back further, it can be tedious to keep pressing Command/Control-Z. That's where the history pane can be extremely useful. It displays every adjustment made during an editing session. From the History pane, you can scroll through your edits, all the way back to the state of your photo when you opened it for editing.
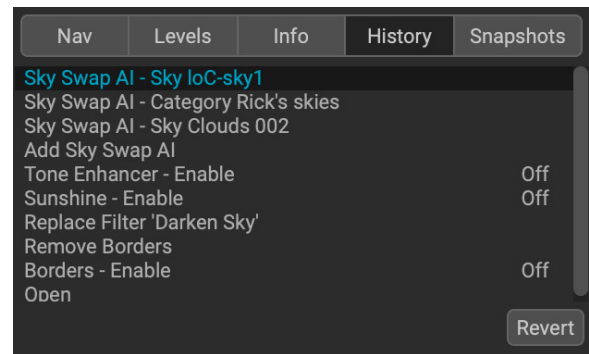
As you work, the History pane tracks all of your edits, adding each change you make to the top of the pane. History displays not only the adjustment, but in many cases will display the settings of sliders in the various panes and filters.

You can scroll through the list, and, if you click on an item, Photo RAW will "roll back" your edits to the spot you clicked. You can click up and down in the list, and, as long as you don't make any changes, the entire Edit history is preserved. If you roll back to an edit and make a change, the History pane "resets" from that point on, losing any of the edits you made after the point you rolled back.

The History feature is designed to help you refine and understand the edits you made during an editing session; it not saved once you finish editing a photo. If you go back to Browse, open another image for editing from the Filmstrip, or switch to Resize, the History pane resets. If you would like to save your edits based on a specific editing state, use the Snapshots feature, described below.

> **TIP:** If you click on an item in the History pane, and you wish to step up or down in the adjustment history from that point, you can use the Undo/Redo commands to quickly go through the list. If you are happy with your edits, click back on the top item in the History pane to preserve the state of the photo.

THE SNAPSHOTS PANE

Photo RAW's Snapshots function lets you save a photo's editing "state" at any point in the editing process, so that it can be returned to at a later time. When you create a snapshot, it saves all of the current photo's edits as they are in that moment. Once saved, you can get back to that state in the editing process at any time by clicking on the snapshot's name in the pane. You can also create multiple snapshots and move from state to state by clicking on the appropriate snapshot in the list.
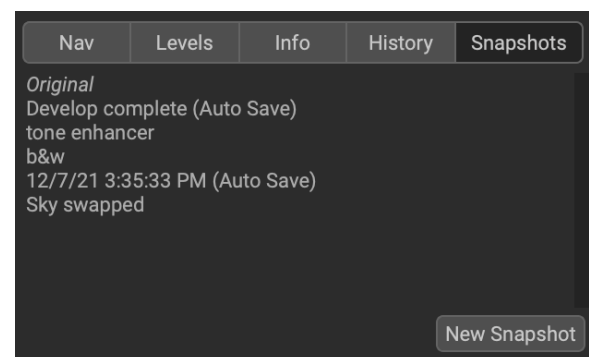
When you create a snapshot, you are saving the state of a photo's edits as it was at that point in the editing process. Clicking on a snapshot in the pane will return you to that state at any time.

Snapshots can be useful when you wish to save and compare different applications of effects, such as comparing color vs. black-and-white treatments. They're also helpful when you're not quite sure about where to take an edit, and you want to ensure that you can get back to a specific point in the editing process.

Snapshot basics

The top of the Snapshot pane for each photo will always have an item called "Original," which is the original state of the photo as it was first opened in the Edit module. In addition, at the conclusion of every Edit module session for that photo, Photo RAW will automatically save the final editing state as a snapshot, with the date and time you closed the photo, and an "(Auto Save)" label at the end of the snapshot name.
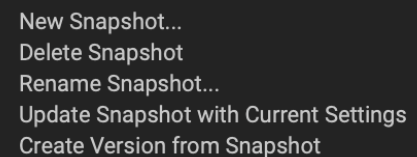
To create your own snapshot, go to the Snapshots tab and click the New Snapshot button. A window will open asking you to name the snapshot; by default, it will be the current date and time, but you can enter any descriptive text you would like. There is no limit to the number of snapshots you can create.

When you wish to return to the editing state defined by a specific snapshot, click that item in the Snapshots pane. You can also move from snapshot to snapshot, which can be helpful for comparing edits. To then get back to where you were at before you clicked a snapshot, choose Undo, or, if you've applied a number of edits from that snapshot state forward, you can use the History pane to roll back to the pre-snapshot state. (Alternatively, you could create a new placeholder snapshot, which would preserve that state, and return to it later.)

Managing snapshots

There are a few snapshot-management options available, which can be called up by right-clicking on any item in the Snapshots pane. These options include:

- **New Snapshot:** creates a new snapshot with the current editing state.

- **Delete Snapshot:** removes the snapshot permanently from the pane.

- **Rename Snapshot:** renames the snapshot; this includes autosaved snapshots, although Photo RAW preserves the (Auto Save) label.

New Snapshot...
Delete Snapshot
Rename Snapshot...
Update Snapshot with Current Settings
Create Version from Snapshot

Right-clicking on an item in the Snapshots pane gives you a list of management options for that snapshot.

- **Update Snapshot with Current Settings:** saves the current editing state to the selected snapshot, overwriting the previously saved state.

- **Create Version from Snapshot:** creates a new, virtual copy of the photo, using the snapshot's editing state (see "Versions" on page 61 for more on this feature).

The Tool Well

The Edit module has 22 tools available for you when you are working on a photo, and are accessible via the Tool well on the left side of the screen. Some tools—Transform, Crop, Text, Faces, and View—are self-contained within the tool icons. Others—Local, Mask, Refine, Retouch, and Liquify—are nested within a tool group and are accessible via the Tool Options bar at the top of the screen when you click on one of those tool icons.

- **Crop Tool:** Trims an image to your desired size or ratio. *Shortcut key: C*

- **Transform (Move) Tool:** Moves and changes the size and rotation of your layer. *Shortcut key: V*

- **Text Tool:** Adds text blocks to your document. *Shortcut key: T*

- **Adjustment Brush (Local group):** Paints in or out local adjustments. *Shortcut key: K*

- **Adjustable Gradient (Local group):** Applies a selective gradient in local adjustment mode. *Shortcut key: Shift+K*

- **Faces (Portrait) Tool:** Finds faces in the current image, and opens the Portrait tab, where you can paint skin in or out to fine-tune each face's mask. *Shortcut key: Shift-I*

- **Masking Brush (Mask group):** Mask large similar areas quickly. (Includes Perfect Brush option.) *Shortcut key: B*

- **Masking Bug (Mask group):** Applies a selective gradient as a mask in any filter (or to the entire stack). *Shortcut key: M*

- **AI Quick Mask Tool (Mask group):** Create high-quality masks with only a few strokes as guidance. *Shortcut key: W*

- **Line Mask Tool (Mask group):** Create masks using straight lines, with the capability to add curves and adjust mask points on the fly. *Shortcut key: Shift-P*

- **Refine Brush (Refine group):** Lets you refine an existing mask's edges, to help mask difficult areas, such as hair. *Shortcut key: N*

- **Chisel Tool (Refine group):** Removes fringes from the edge of a mask. *Shortcut key: Shift-H*

- **Blur Tool (Refine group):** Blurs the edges of a masked area to help it blend more naturally. *Shortcut key: L*

- **Healing Brush (Retouch group):** Non-destructively removes distractions from a photo using content-aware fill technology. *Shortcut key: Q*

- **Perfect Eraser (Retouch group):** Removes distractions like signs and power lines. *Shortcut key: Shift-Q*

- **Retouch Brush (Retouch group):** Removes blemishes like dust spots and acne. (Includes Perfect Brush option.) *Shortcut key: R*

- **Clone Stamp (Retouch group):** Paints over an area from a sample of another area. *Shortcut key: Shift-S*

- **Push Tool (Liquify group):** Lets you push or warp areas of your photo with a brush in a manner similar to finger-painting. *Shortcut key: Shift-L*
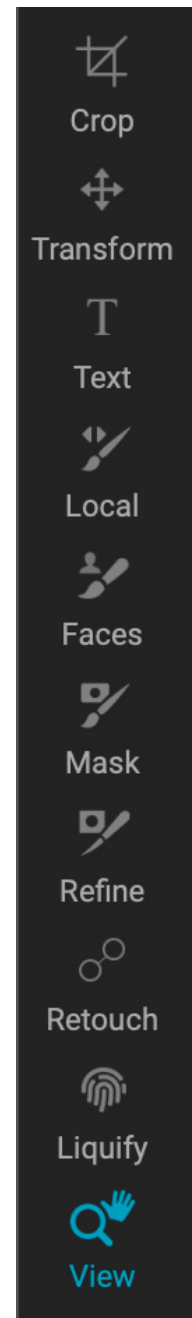
- **Bloat Tool (Liquify group):** Warps the brushed area and slightly enlarges that region. *Shortcut key: Option-L*

- **Pinch Tool (Liquify group):** Warps the brushed area and slightly shrinks that region. *Shortcut key: Shift-Option-L*

- **Healing Brush (Retouch group):** Paint over a distraction and a matching area of your photo is magically blended on top to replace it. *Shortcut key: Q*

- **View Tool:** Adjusts the magnification of the image in the Preview area, and lets you move around the Preview window. *Shortcut key: Z*

To access a tool, click on the tool or use the shortcut key. When selected, the cursor will change, and you will see a set of options for the tool in the Tool Options bar above the Preview window. If the selected tool is part of a tool group, you will see the other tools in that group, on the left side of the Tool Options bar.
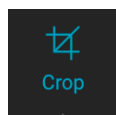
CROP TOOL

This tool lets you crop your image, and is fully non-destructive in the Edit module.

To crop an image, select the Crop tool from the Tool Well. Select any preset crop ratio you would like to use from the Options bar; the default is Freeform, which lets you crop in whatever size or ratio you would like, including custom sizes. Adjust the corner handles of the crop tool overlay to get the area you wish. (The area outside the crop box appears darkened for guidance.) You can resize and move the image inside the crop box. When you are satisfied with

The Crop interface, with the Crop Preset pop-up open.

your settings, press the Apply button in the Options bar or press Enter.

To move the image inside the crop box, simply click and drag inside the box. You can also nudge the image using the arrow keys on your keyboard. To resize the crop box, click and drag on any of the handles. Clicking on a corner handle allows you to adjust two sides at the same time; clicking on a side handle allows you to adjust that side. If you hold the Shift key down while adjusting the size, the box's proportions are maintained. To rotate the crop box, move outside a corner until the tool changes to rotate.

To straighten an image, you can use the Leveling Tool, which is found in the Tool Options bar when the Crop Tool is active. Click on it, and drag the tool across an element in your image that should be level.

Crop Tool Options Bar:
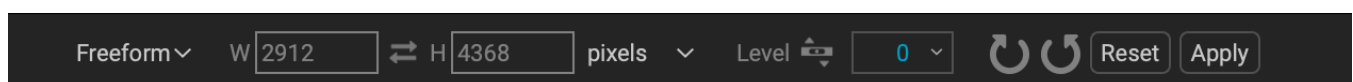
- **Preset pop-up**: Lets you choose from Freeform, constrained or custom preset ratios.
- **Width**: Sets the width of the crop box.

- **Swap Dimensions**: Swaps the width and height. Handy for rotating the crop box.

- **Height**: Sets the height of the crop box.

- **Leveling Tool**: Click and drag this tool across an element in your image that should be level.

- **Angle**: See and adjust the angle of rotation.

- **Reset**: Resets the crop area to the size of your original photo.

- **Apply**: Applies the crop.

In addition to the preset crop ratios provided, you can create your own custom crop sizes. The bottom of the crop preset pop-up menu has a Custom submenu, which lists all of your custom ratios. To add a size, choose Manage Custom Sizes from the submenu. To add a new ratio, click the Add button, then enter a name, and the width and height ratio you wish to create (the units will always be "ratio" when you create a custom preset for the Crop tool). You can add as many as you'd like and click OK. The new crop ratios will appear in the Custom submenu.
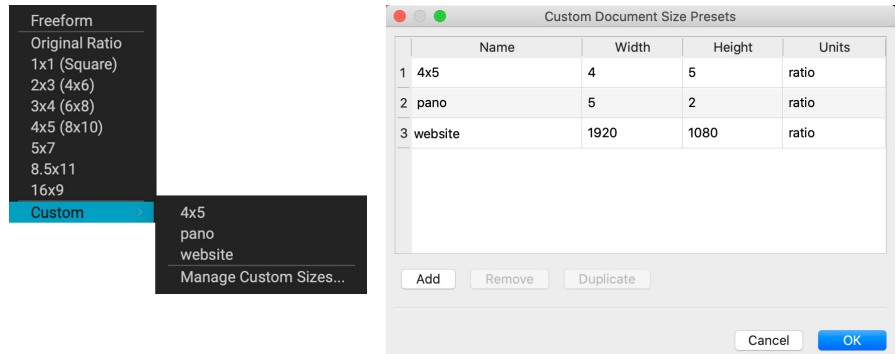
The bottom of the preset pop-up (above left) has a list of custom crop ratios that you can use in addition to the preset ratios. You can create your own presets via the Manage Custom Sizes submenu option, which opens the Custom Document Size Presets window (above right).

NOTE: The Crop tool in the Edit module is non-destructive, while the one in Resize works destructively. Both modules can create custom crop presets, but the tool in Edit works solely as a crop ratio and has the label "ratio" in the Units column. If you change one of those preset sizes from "ratio" to a specific unit of measurement in Resize (such as "inches") it will no longer be visible in the Edit module's Crop tool Custom pop-up.

TRANSFORM (MOVE) TOOL
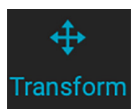
The Transform tool is used to manipulate the contents of a layer, and works even if the only layer you have is the base photo layer. A layer may be repositioned, sized or rotated using the Transform Tool. When the tool is selected, handles will appear on the edges of the selected layer. You use these handles to manipulate the image. When you are done, click the Apply button in the Tool Options bar.

The Transform tool is layer-dependent, and each document layer can have its own transform operations. It is useful when compositing photos, or applying backgrounds and textures in a multi-layered file. The Transform tool is disabled when using Photo RAW as a plug-in.

Repositioning a layer

To reposition a layer, simply click and drag inside the transform box. You can also use the keyboard arrow keys to nudge a layer one pixel in any direction.

Resizing a layer

To resize a layer, click and drag on any of the transform handles. Clicking on a corner handle allows you to adjust two sides simultaneously. Clicking on a side handle allows you to adjust that side. If you hold the shift key down while adjusting the size, the proportions of the layer are maintained. If you hold down the Option (MacOS) or Alt (Windows) key while resizing, your image will resize from the center instead of from the edge. You can hold down Shift-Option (or Shift-Alt) to resize proportionally from the center.

You can type in the size you desire in the Tool Options bar (see below) in the width and height fields. You can also size a layer to fill the canvas automatically by pressing the Fill button in the Options Bar.

Rotating a layer

To rotate a layer, move the Transform Tool just outside a corner transform handle. Notice that the tool cursor changes to a rotate cursor. Now click and drag to rotate the layer. You can also use the opt (alt) left and right arrow keys to rotate a layer when the transform tool is selected. To rotate the layer quickly in 90 degree increments, you can use the rotate left and rotate right buttons in the Tool Options bar.

Flipping a layer

You can flip a layer either horizontally or vertically by pressing the flip buttons in the Tool Options bar.

When you have completed your transforms you need to commit the changes. You can do this by pressing the Apply button that appears in the Tool Options bar or by pressing the Enter key. You can cancel a transform by pressing the Cancel button in the Tool Options bar or by pressing the Escape key.

Restoring a layer after a move

The Reset All command inside the Edit module will not reset transforms made with the Move tool. To reset your layer to its original, non-transformed state, click the Move tool and adjust any rotation you might have made, as well as any flip operations. Then choose the Fit to Canvas button.

Transform Tool Options Bar
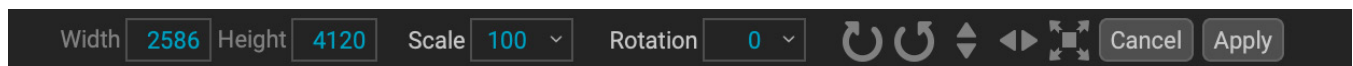
- **Width:** Changes the width of the layer, in pixels.
- **Height:** Changes the height of the layer, in pixels.
- **Scale:** Proportionally scales the layer, in percentage.
- **Rotation:** Rotates the layer, by degrees.
- **Rotate Left/Right buttons:** Rotates the layer 90° clockwise or counterclockwise.
- **Flip Horizontal/Vertical buttons:** Flips the horizontal or vertical axis.
- **Fill Canvas button:** Scales the layer contents to fit the document size.

TEXT TOOL

The Text tool lets you add blocks of text to your photo or composite, for everything from simple watermarks to more complicated text-based layouts. Within each block you have complete control over the font, type size, line spacing, letter spacing, color and alignment of the text. You can also add a background fill color and can set the opacity of each text block and background.

To add a text block, click the Text tool, and then the Add button in the Tool Options bar. A new text block will be added, with placeholder text selected. You can start typing, or first choose the font, sizing and other options you wish to use in that block. To add another text block, click the Add button again.
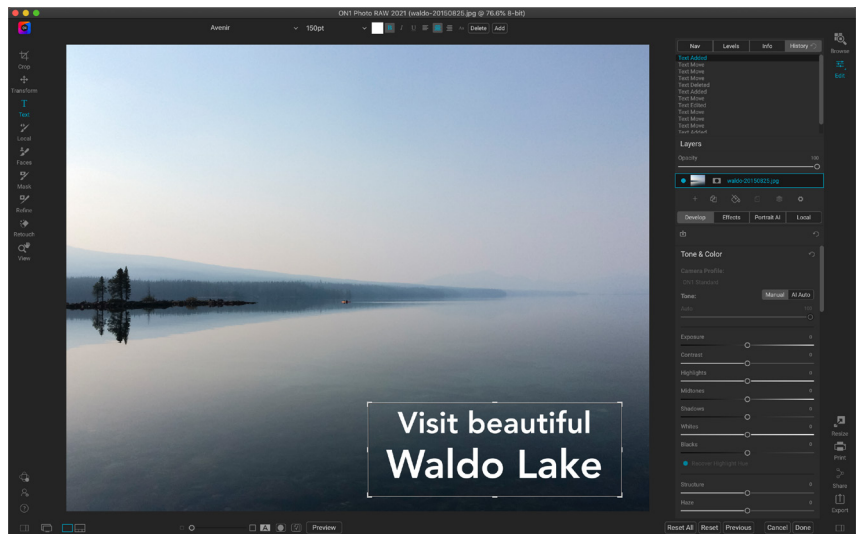
The Text tool lets you add multiple text blocks to a document, with full character-level control of font, size and styles.

To edit an existing text block, choose the Text tool, and double-click in the block you wish to edit, then make your changes. If you would like to remove an existing block, click on the block with the Text tool and choose Delete from the Options bar.

Photo RAW will remember the last settings you used, which can be helpful if you like to use a specific font and size—in text for a watermark, for example.

The Text tool also lets you add metadata from the current photo into a text block. To do this, create a text block and right-click inside the block. The Text from Metadata submenu contains a list of embeddable metadata items. You can add multiple items from the list, style them, and even add items to different text blocks. When you're done adding metadata, click outside the block to see the final text (right).
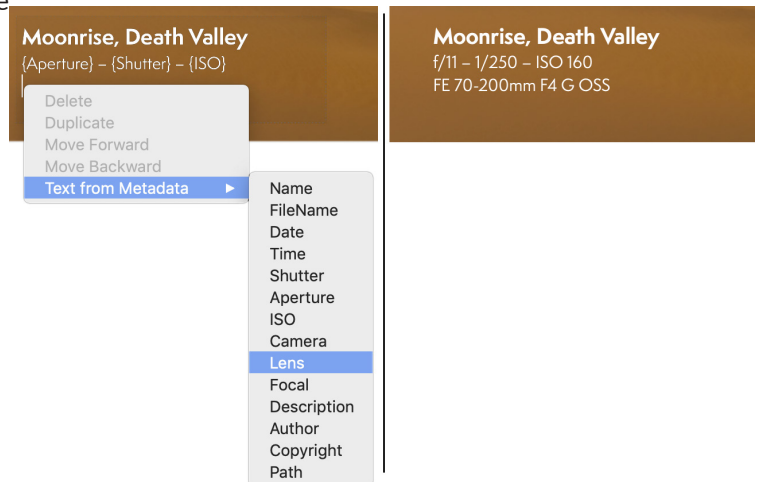
Text Tool Options Bar
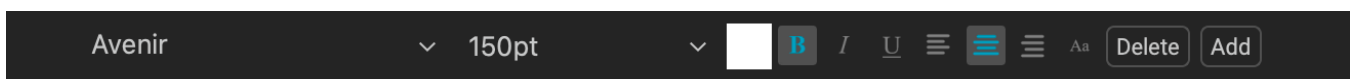
- **Font pop-up:** Displays a list of available fonts on your system.
- **Size pop-up:** Sets the font size for the block (or selected text).
- **Color:** Selects a color for the selected text or block.

- **Style:** Applies Bold, Italic or Underline styling to the selected text or block.

- **Alignment:** Set the selected text to align left, or center.

- **Text Options:** Additional options for the text block, including line and character spacing, color fill for the background, and separate opacity controls for both the text and the background (right).

- **Delete:** Deletes the currently selected text block.

- **Add:** Adds a new text block.

> **NOTE:** The Text tool can be used to add text-based watermarks to a photo, but Photo RAW's Export feature also lets you apply a graphic watermark to exported photos. See "Export" on page 208 for more information.
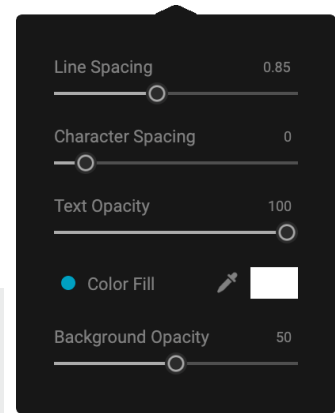
The Text Options pop-up includes spacing option, and settings for the background color and opacity of the text box.

ADJUSTMENT BRUSH (LOCAL GROUP)
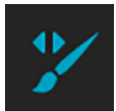
The Adjustment Brush, which is used within the Local Adjustments tab, works like a standard masking brush tool, with adjustable sizes, feathering and opacity. You can paint an adjustment in or out via the Mode pop-up in the Tool Options bar, and adjust the size and feathering of the brush via the bar or with the bracket keys on your keyboard. The Adjustment Brush is especially powerful when used with the Perfect Brush option, represented by its icon at the right of the Tool Options bar.

The Perfect Brush incorporates a color-based, self-masking technology to help create precise selections and masks. When you turn the Perfect Brush option on, the Adjustment Brush collects the colors under the center of the brush and applies the effect only to those colors. This protects the adjustment from being applied across edges. A great of example of using the Perfect Brush would be if you wanted to darken the sky in an image, but didn't want to darken a group of mountains on the horizon.
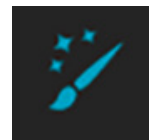
Perfect brush icon.

> **TIP:** You can turn the Perfect Brush on and off using the Command-R keyboard shortcut (Control-R on Windows). You can also temporarily lock the color to remove by holding down the Control key (Windows) or the Command key (Mac). This is useful when brushing through areas with a lot of openings like tree branches.

Photo RAW lets you mask with custom brush shapes when you are using either the Adjustment Brush or the Masking Brush. When you use a custom brush on an adjustment layer, in conjunction with that layer's Paint with Color option, you can add overlays and other embellishments. When used with custom brushes, the Manual Spacing option lets you control the distribution of the strokes as you brush. (See "Masking Basics" on page 102 for more detailed information about masking brush techniques with any of the masking tools.

Adjustment Brush Tool Options

- **Style:** The Style pop-up lets you save brush information to use at another time. Selecting a saved item from the menu will open that saved brush's characteristics.

- **Shape:** The Shape menu displays a list of all custom brush shapes in your library. The top item in the list is the default, round brush.

- **Paint Mode**: The paint mode controls if you are painting out (hiding the effect) or painting in (restoring the effect). You can tell your current mode by looking at the plus or minus icon in the center of the brush. If the icon is minus, you are painting out, and if the icon is a plus, you are painting in. You can change the mode in the Tool Options bar, or by pressing the X key, or by holding down the Option (Mac) or Alt (Windows) key temporarily.

- **Brush Size**: You can control the size of the brush using the Size pop-up. Use a small brush at high magnification for precise work, and a large brush at fit to screen for general work. You can control the size of the brush several other ways:

    - The left and right bracket keys: ' **[** ' and ' **]** ' .

    - Your mouse's scroll wheel (this can be set in the General Preferences; see page 244).

    - Your pressure-sensitive tablet.

- **Feather**: You control the amount of feathering—or hardness—of the brush by using the Feather pop-up in the Tool Options bar. The feather has a range from 1 to 100 percent. Use a small feather at high magnification for precise, hard-edged work and a large, soft-edged brush in Fit to screen mode for general work. You can visually see your feather by watching the outer concentric circle of the brush tool. In addition to the Feather pop-up, you can adjust the size of the feather by holding down the Shift key and pressing the right or left bracket keys.

- **Opacity**: You can control the opacity, or transparency of the brush color, with the Opacity pop-up in the Tool Options bar. The opacity has a range from 1 to 100 percent. You use a high opacity to paint quickly and hide large areas. You use a lower opacity for blending areas together or for subtle work. You can control the opacity in two other ways:

    - Press Option (Mac) or Alt (Windows) key on your keyboard and one of the number keys. Each number represents an opacity percentage from 10% (1) to 100% (0).

    - Use your pressure-sensitive tablet.

> **TIP:** Opacity is really the shade of gray being painted onto the mask. White represents 100% of an effect showing and black represents no effect showing.

- **Flow:** Flow is the rate at which the brush color is applied, up to the Opacity setting. With a low flow number, as you brush back and forth across a stroke, the brush color will build up to the Opacity setting. At a flow of 100, the brush stroke color will be at the Opacity setting.

- **Angle:** This sets the angle of the current brush shape. For the default, round brush shape, this setting has no effect; it is more useful when working with custom brush shapes. You can also rotate the brush shape by pressing Shift-Option (Mac) or Shift-Control (Windows) and the left or right bracket keys ('**[**' or '**]**').

- **Perfect Brush**: The Perfect Brush incorporates an automatic edge-detection technology to help create precise selections and masks. When you turn the option on—by clicking on the Perfect Brush icon in the Options bar—the Masking Brush collects the colors under the center of the brush and applies the effect only to those colors. This protects the adjustment from being applied across edges, such as tree branches.

    Further settings for the Perfect Brush can be found by clicking on the gear icon in the Tool Options bar. It has these options:

    - **Color Threshold**: This option lets you control the balance between keep and drop colors, based on the area you are working on. For example, you may want the Perfect Brush to be very precise and only paint away very similar colors, while at other times you want it to paint away a broad range of colors in the same neighborhood.

    - **Transition**: This slider controls the feather of the Perfect Brush based on color. To create a soft edge, increase the transition. To create a harder edge, decrease the transition amount.

Perfect Brush, spacing and Wacom tablet options can be found in the gear menu drop-down.

- **Manual Spacing:** When checked, this sets the spacing of the brush tip as you apply a stroke. This is primarily used when painting with custom brushes. See "Using Custom Brushes to Add Overlays" on page 170 for more.

- **Pressure options:** Photo RAW supports pressure-sensitive tablets with the Masking Brush. You can enable pressure sensitive controls for the brush size, brush opacity, or both simultaneously. To turn this support on, click on the gear icon in the Tool Options bar. You can activate pressure sensitivity for both size and opacity by clicking the appropriate buttons in the drop-down menu.

Detailed information on using Local Adjustments in ON1 Photo RAW 2022 starts on page 167. There is also a short section, "Masking Basics" on page 102, that includes best practices for using the different masking tools in Photo RAW.

> **NOTE:** The Adjustment Brush can also be used to apply custom brushes to an adjustment layer. See "Using Custom Brushes to Add Overlays" on page 170.

ADJUSTABLE GRADIENT TOOL (LOCAL GROUP)

The Gradient Adjustment tool is very similar to the Masking Bug (see page 91), but it is solely for use within the Local Adjustments tab. It lets you create a linear or radial gradient mask across part of your image, The gradient mask goes from dark to light in tone, applying more of the adjustment where the gradient is lighter, and less of the adjustment where the gradient's tone is dark. The most common use of gradient masks is to darken the sky in an image, while preserving the brightness of the foreground, similar to using a gradient filter on your camera lens.

To apply a standard gradient to a local adjustment, click on the tool, then click in the image roughly where

you wish the effect to be. You'll see the outline of the gradient, which is called a bug. You can use the handles on the bug to move your gradient, increase or decrease the length of the gradient, or rotate it.

You can change the gradient shape via the Tool Options bar: in addition to the standard dark-to-light horizontal gradient, you can also create a circular gradient and a reflected gradient, which is like the horizontal gradient, but goes from black (no effect) at the outer edges to white (full effect) in the center.

Adjustable Gradient Tool Options Bar:
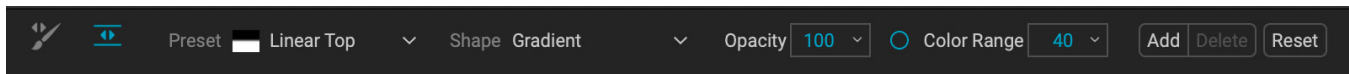
- **Preset**: The preset pop-up includes six settings for the Adjustable Gradient tool (top down, bottom up, left and right, and circular vignettes), and changes the current bug (if there is one) to match the preset.

- **Shape**: The shape pop-up controls the shape of the bug. In addition to the standard Gradient and the Reflected Gradient, there are two radial shapes: Center, which puts the light tones at the center and the dark tones on the outside of the mask, and Edges, which sets the gradient in the opposite direction.

The Preset (left) and the Shape (right) options for the Adjustable Gradient tool.

- **Opacity**: Sets the maximum opacity or density of the mask.

- **Color Range:** When enabled, this detects the color under the gradient and applies the mask to only that color range. The higher the number, the wider the range of color that is selected.

- **Add**: Adds a new gradient using the current settings.

- **Delete**: Deletes the current gradient.

- **Reset**: Resets the mask on the layer completely. This removes all gradients and clears any brushing that has been done.

Manipulating gradient masks

Once you've added a gradient to an image, you can modify it by accessing the parts of the gradient overlay:

- To move a gradient, click on the big circle at the center of the gradient and drag.

- To resize a radial gradient, click and drag on the solid line.

- To adjust the feather (hardness) of the mask, click and drag along the dashed line.

- To rotate the mask, click the smaller circle near the gradient center and drag.

Detailed information on using Local Adjustments in ON1 Photo RAW 2022 starts on .
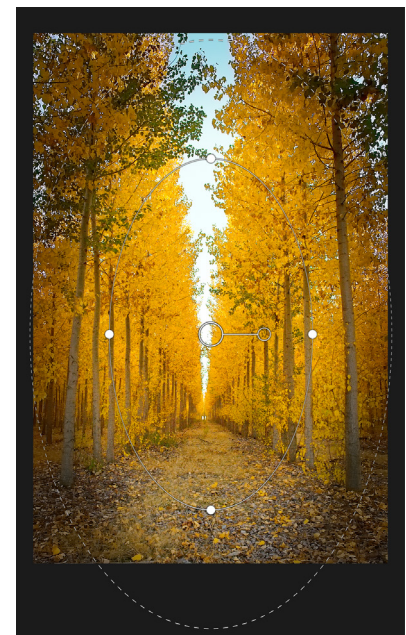
The Edges gradient shape lets you create such masking effects as customized, adjustable vignettes.

PORTRAIT (FACES) TOOL
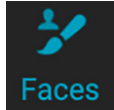
Clicking on the Faces icon will open the Portrait tab, and search the photo for faces. Any faces it finds will be added to the tab as separate panes. When a face is selected, the tool works in a manner similar to the Masking Brush; it is designed to paint the face's mask—the skin, in case of Portrait—in or out. More information on using Portrait starts on page 160.

Portrait Tool Options

Style Default*∨ Shape ● Mode Paint In ∨ Size 200 ∨ Feather 0 ∨ Opacity 49 ∨ Flow 10 ∨ Angle 15 ∨ ⚙ Invert Reset

- **Style:** The Style pop-up lets you save brush information to use at another time. Selecting a saved item from the menu will open that saved brush's characteristics.

- **Shape:** The Shape menu displays a list of all custom brush shapes in your library. The top item in the list is the default, round brush.

- **Paint Mode**: The paint mode controls if you are painting out (hiding the effect) or painting in (restoring the effect). You can tell your current mode by looking at the plus or minus icon in the center of the brush. If the icon is minus, you are painting out, and if the icon is a plus, you are painting in. You can change the mode in the Tool Options bar, or by pressing the X key, or by holding down the Option (Mac) or Alt (Windows) key temporarily.

- **Brush Size**: You can control the size of the brush using the Size pop-up. Use a small brush at high magnification for precise work, and a large brush at fit to screen for general work. In addition to the Size control, you can change the size of the brush several ways:
  - The left and right bracket keys: ' **[** ' and ' **]** ' .
  - Your mouse's scroll wheel, which can be set in Preferences' General tab (page 244).
  - Your pressure-sensitive tablet.

- **Feather**: You control the amount of feathering—or hardness—of the brush by using the Feather pop-up. The feather has a range from 1 to 100 percent. Use a small feather at high magnification for precise, hard-edged work and a large, soft-edged brush in Fit to screen mode for general work. Your feather is visualized by the outer concentric circle of the brush. You can adjust the size of the feather by pressing Shift and the right or left bracket keys.

- **Opacity**: You can control the opacity, or transparency of the brush color, with the Opacity pop-up in the Tool Options bar. The opacity has a range from 1 to 100 percent. You use a high opacity to paint quickly and hide large areas. You use a lower opacity for blending areas together or for subtle work. You can also control the size of the brush in other ways:
  - Press Option (Mac) or Alt (Windows) key on your keyboard and one of the number keys. Each number represents an opacity percentage from 10% (1) to 100% (0).
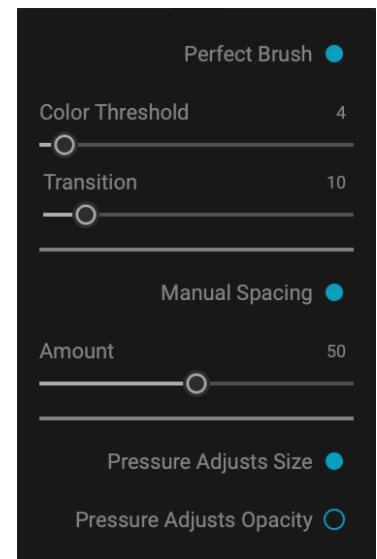 - Use your pressure-sensitive tablet.

> **TIP:** Think of the opacity as the shade of gray you are painting onto your mask. While white in a mask represents 100% of an effect showing and black represents no effect showing, all opacity settings in between will show a percentage of the effect.

- **Flow:** This is the rate at which the brush color is applied, up to the Opacity setting. With a low flow number, as you brush back and forth across a stroke, the brush color will build up to the Opacity setting. At a flow of 100, the brush stroke color will be at the Opacity setting.

- **Angle:** This sets the angle of the current brush shape. For the default, round brush shape, this setting has no effect; it is more useful when working with custom brush shapes. You can also rotate the brush shape by pressing Shift-Option (Mac) or Shift-Control (Windows) and the left or right bracket keys ('[' or ']').

- **Perfect Brush**: The Perfect Brush incorporates an automatic edge-detection technology to help create precise selections and masks. When you turn the option on—by clicking on the Perfect Brush icon in the Options bar—the Masking Brush collects the colors under the center of the brush and applies the effect only to those colors. This protects the adjustment from being applied across edges, such as tree branches.

    Further settings for the Perfect Brush can be found by clicking on the gear icon in the Tool Options bar. :

    - **Color Threshold**: This option lets you control the balance between keep and drop colors, based on the area you are working on. For example, you may want the Perfect Brush to be very precise and only paint away very similar colors, while at other times you want it to paint away a broad range of colors in the same neighborhood.

    - **Transition**: This slider controls the feather of the Perfect Brush based on color. To create a soft edge, increase the transition. To create a harder edge, decrease the transition amount.

- **Manual Spacing:** When checked, this sets the spacing of the brush tip as you apply a stroke. This is primarily used when painting with custom brushes. See "Using Custom Brushes to Add Overlays" on page 170 for more.

- **Pressure options:** Photo RAW supports pressure-sensitive tablets from Wacom and other companies with the Masking Brush. You can enable pressure sensitive controls for the brush size, brush opacity, or both simultaneously. To turn this support on, click on the gear icon in the Tool Options bar. You can activate pressure sensitivity for both size and opacity by clicking the appropriate buttons in the drop-down menu.

Detailed information on using Portrait AI in ON1 Photo RAW 2022 starts on page 160. There is also a short section, "Masking Basics" on page 102, that includes best practices for using the different masking tools in Photo RAW.

MASKING BRUSH (MASK GROUP)

The Masking Brush is one of two tools used for masking filters in Effects and creating masks in Layers. Selected, the Masking Brush cursor looks like two concentric circles, one representing the inner hard edge of the brush, the other, the soft outer, feathered edge of the brush. At the center of the brush is either a plus or minus. The plus means that you are painting "in" a filter's effect, while minus means the brush mode is set to paint out. As is the case with the other masking brushes, you can use Photo RAW's Perfect Brush to help create fine selections.

Perfect Brush, spacing and Wacom tablet options can be found in the gear menu drop-down.

Masking Brush Tool Options

Style Default*⌄ Shape ⚫ Mode Paint Out ⌄   Size 1100 ⌄   Feather 100 ⌄   Opacity 100 ⌄   Flow 100 ⌄   Angle 0 ⌄   ⚙   Invert Reset

- **Style:** The Style pop-up lets you save brush information to use at another time. Selecting a saved item from the menu will open that saved brush's characteristics.

- **Shape:** The Shape menu displays a list of all custom brush shapes in your library. The top item in the list is the default, round brush.

- **Paint Mode**: The paint mode controls if you are painting out (hiding the effect) or painting in (restoring the effect). You can tell your current mode by looking at the plus or minus icon in the center of the brush. If the icon is minus, y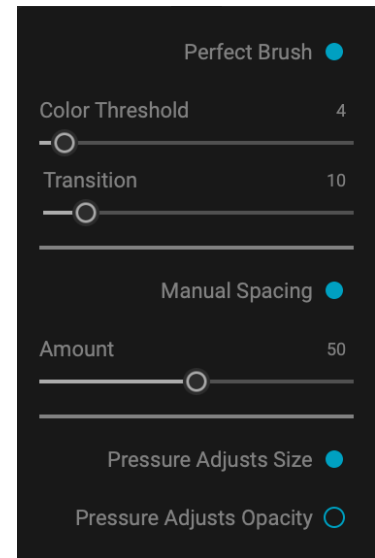ou are painting out, and if the icon is a plus, you are painting in. You can change the mode in the Tool Options bar, or by pressing the X key, or by holding down the Option (Mac) or Alt (Windows) key temporarily.

> **TIP:** If you would like to invert the mask (turn it from black to white), in order to paint a filter's effect into your image, select the Masking Brush tool, then choose Invert Mask from the Mask menu.

- **Brush Size**: You can control the size of the brush using the Size pop-up. Use a small brush at high magnification for precise work, and a large brush at fit to screen for general work. You can control the size of the brush several other ways:
  - The left and right bracket keys: ' **[** ' and ' **]** ' .
  - Your mouse's scroll wheel, which can be set in Preferences' General tab (page 244).
  - Your pressure-sensitive tablet.

- **Feather**: You control the amount of feathering—or hardness—of the brush by using the Feather pop-up in the Tool Options bar. The feather has a range from 1 to 100 percent. Use a small feather at high magnification for precise, hard-edged work and a large, soft-edged brush in Fit to screen mode for general work. You can visually see your feather by watching the outer concentric circle of the brush tool. In addition to the Feather pop-up, you can adjust the size of the feather by holding down the Shift key and pressing the right or left bracket keys.

- **Opacity**: You can control the opacity, or transparency of the brush color, with the Opacity pop-up in the Tool Options bar. The opacity has a range from 1 to 100 percent. You use a high opacity to paint quickly and hide large areas. You use a lower opacity for blending areas together or for subtle work. Other ways you can adjust the opacity include:
  - Press Option (Mac) or Alt (Windows) key on your keyboard and one of the number keys. Each number represents an opacity percentage from 10% (1) to 100% (0).
  - Use your pressure-sensitive tablet.

> **TIP:** Think of the opacity as the shade of gray you are painting onto your mask. White in a mask represents 100% of an effect and black (0%) represents no effect, and opacity settings in between will show a percentage of the effect.

- **Flow:** The rate at which the brush is applied, up to the Opacity setting. With a low flow number, as you brush back and forth, the brush color will build up to the Opacity setting. At 100, the brush stroke is applied at the Opacity setting.

- **Angle:** This sets the angle of the current brush shape. For the default, round brush shape, this setting has no effect; it is more useful when working with custom brush shapes. You can also rotate the brush shape by pressing Shift-Option (Mac) or Shift-Control (Windows) and the left or right bracket keys ('[' or ']').

- **Perfect Brush**: The Perfect Brush incorporates an automatic edge-detection technology to help create precise selections and masks. When you turn the option on—by clicking on the Perfect Brush icon in the Options bar—the Masking Brush collects the colors under the center of the brush and applies the effect only to those colors. This protects the adjustment from being applied across edges, such as tree branches.

    Further settings for the Perfect Brush can be found by clicking on the gear icon in the Tool Options bar:

    - **Color Threshold**: This option lets you control the balance between keep and drop colors, based on the area you are working on. For example, you may want the Perfect Brush to be very precise and only paint away very similar colors, while at other times you want it to paint away a broad range of colors in the same neighborhood.

    - **Transition**: This slider controls the feather of the Perfect Brush based on color. To create a soft edge, increase the transition. To create a harder edge, decrease the transition amount.

- **Manual Spacing:** When checked, this sets the spacing of the brush tip as you apply a stroke. This is primarily used when painting with custom brushes. See "Using Custom Brushes to Add Overlays" on page 170 for more.

- **Pressure options:** Photo RAW supports pressure-sensitive tablets with the Masking Brush. You can enable pressure sensitive controls for the brush size, brush opacity, or both simultaneously. To turn this support on, click on the gear icon in the Tool Options bar. You can activate pressure sensitivity for both size and opacity by clicking the appropriate buttons in the drop-down menu.

Detailed information on using the Masking Brush in Effects starts on page 88, while information about Layers starts on page 173. There is also a short section, "Masking Basics" on page 102, that includes best practices for using the different masking tools in Photo RAW.

> **TIP:** You can turn the Perfect Brush on and off using the Command–R (MacOS) or Control-R (Windows) keyboard shortcut. You can also temporarily lock the color to remove by holding down Command (Mac) or Control (Windows)

MASKING BUG (MASK GROUP)
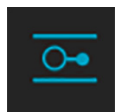
The Masking Bug is used for blending masks and layers by creating radial, gradient and reflected gradient mask shapes. It works in a similar manner to the Adjustable Gradient tool in the Local Adjustments pane. The mask goes from dark to light in tone, applying more of the adjustment where the gradient is lighter, and less of the adjustment where the gradient's tone is dark. The most common use of gradient masks is to darken the sky in an image, while preserving the brightness of the foreground, similar to using a gradient filter on your camera lens, or to adjust the effect of a filter mask in Effects.

To apply a standard gradient to a filter in Effects, click on the Masking Bug in the Tool well, then click in the image roughly where you wish the gradient to go. You'll see the outline of the gradient, which is called a bug. You can use the handles on the bug to move your gradient around, increase or decrease the length of the gradient, or rotate it.
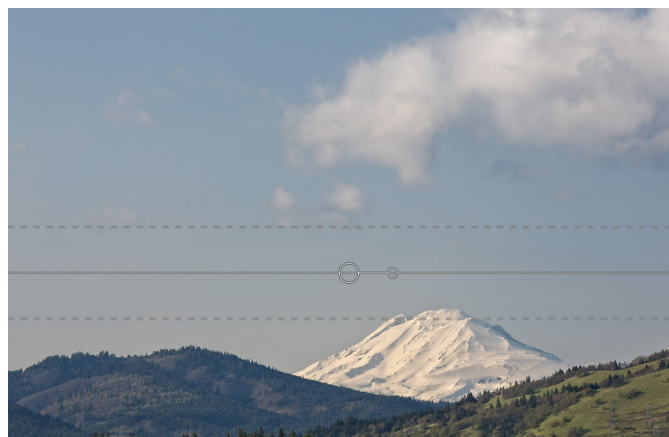
In this image, a Dynamic Contrast filter has been applied in Effects. To keep the effect out of the clouds, a Masking Bug has been added.

You can change the gradient shape via the Tool Options bar: in addition to the standard dark-to-light horizontal gradient, you can also create a circular gradient and a reflected gradient, which is like the horizontal gradient, but goes from black (no effect) at the outer edges to white (full effect) in the center.

Masking Bug Tool Options

- **Preset**: The preset pop-up includes six settings for the bug's mask (vignette, strong vignette, top down, bottom up, and linear left and right), and changes the current bug (if there is one) to match the preset.

- **Shape**: The shape pop-up controls the shape of the bug. In addition to the standard Gradient and the Reflected Gradient, there are two radial shapes: Center, which puts the light tones at the center and the dark tones on the outside of the mask, and Edges, which sets the gradient in the opposite direction.

  The Preset (left) and the Shape (right) options for the Adjustable Gradient tool.

- **Opacity**: Sets the maximum density of the mask.

- **Color Range:** When enabled, this detects the color under the gradient and applies the mask to only that color range. The higher the number, the wider the range of color that is selected.

- **Add**: Adds a new gradient using the current settings.

- **Delete**: Deletes the current gradient.

- **Reset**: Resets the mask on the layer completely. This removes all gradients and clears any brushing that has been done.

Manipulating a gradient mask

Once you've added a gradient to an image, you can modify it easily by accessing the following parts of the gradient overlay:

- To move a gradient, click on the large circle at the center of the gradient and drag.

- To resize a radial gradient, click and drag on the solid line.

- To adjust the feather (or hardness) of the mask, click and drag along the dashed line.

- To rotate the mask, click on the smaller circle near the center of the gradient and drag it up or down.
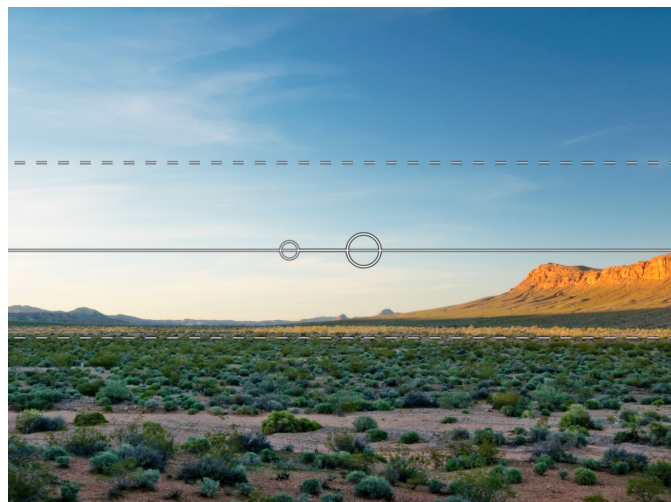
Working with multiple masking bugs

You can have up to six masking bugs per layer. Each bug is re-editable. To add another masking bug, press the Add button or click outside of the current bug while the Masking Bug tool is selected.

Only one masking bug may be adjusted at a time. You will see the overlay controls for the active bug while your mouse is over the preview area. Inactive bugs are marked with a small circle; to select an inactive bug clicking on this small circle marker.

Masking bugs are subtractive. Each bug hides more and more of the current layer. When masking bugs overlay each other they may hide more of the layer too. You can always use the Masking Brush to override and paint areas back in hidden by the masking bugs.

AI QUICK MASK TOOL (MASK GROUP)

Powered by machine learning, the AI Quick Mask tool creates high-quality masks with just a few strokes. To use it, you paint areas you want to keep in green and areas you want to drop in red. Then, using its artificial intelligence, Photo RAW analyses the color, tone and texture of the marked regions to learn what you want to make out and then automatically finds the edges and creates the mask for you. Use it with layers to replace skies or with filters to selectively apply them.
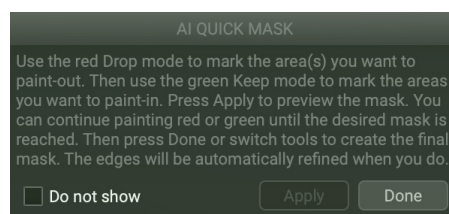
When you first use the AI Quick Mask tool, Photo RAW will display a 'HUD' that explains what you need to do to use the tool.

You can use this tool on a filter in Effects or on a layer. If you wish to use it on a filter, to mask some of the filter's effects out of your photo, first add the filter in the Effects tab, and select the AI Quick Mask Tool. To use it on a layer, make sure that the only thing selected is that layer. In both cases, you'll follow these steps:

1. First, you need to give the tool guidance as to what you want to keep and drop. This is done by loosely painting over the regions in your photo. There is no need to precisely paint the entire photo: just a few representative strokes of red and green are all that are needed. Paint with Drop mode—which is the default brushing mode—over the portions of your image that

you want to remove. These brushstrokes will appear in red. Then change the tool's mode to Keep (via the Tool Options bar, or by holding the Option/Alt key) and paint over the areas you want to keep. These strokes will show up as green.
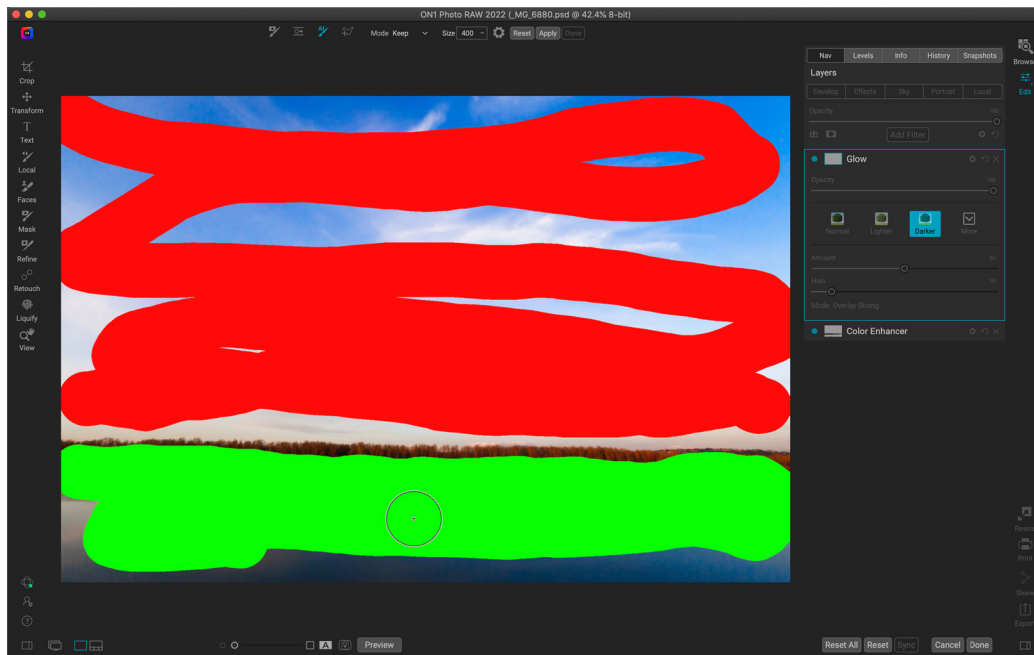
2. Now press the Apply button in either the Tool Options bar or the AI Quick Mask HUD. This will generate a temporary mask to preview the results. Areas that are filled with red will be masked out, areas in green will remain. Keep in mind the edges will appear rough at this point and will be smoothed out when you generate the final mask.
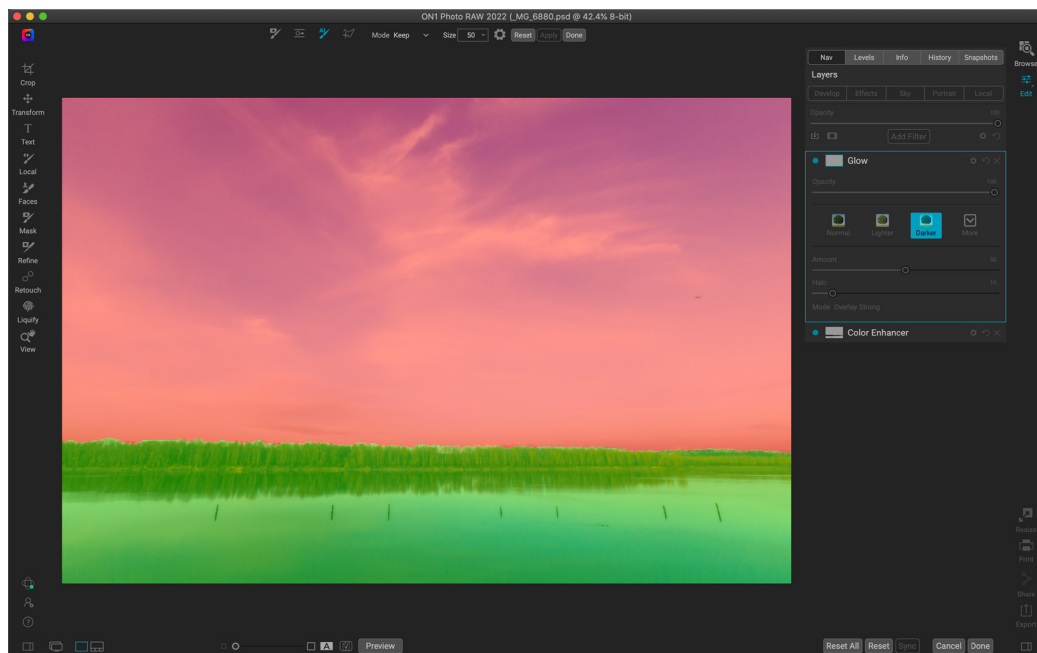
3. If the preview results look good, press the Done button in the Tool Options bar or the AI Quick Mask HUD. If there are areas that are incorrect, you can continue to improve the results by adding more Keep and Drop strokes. Press Apply each time to preview the

improved results. When you press Done, the edges are refined with high precision and ON1 Photo RAW switches to the Refine Mask tool.
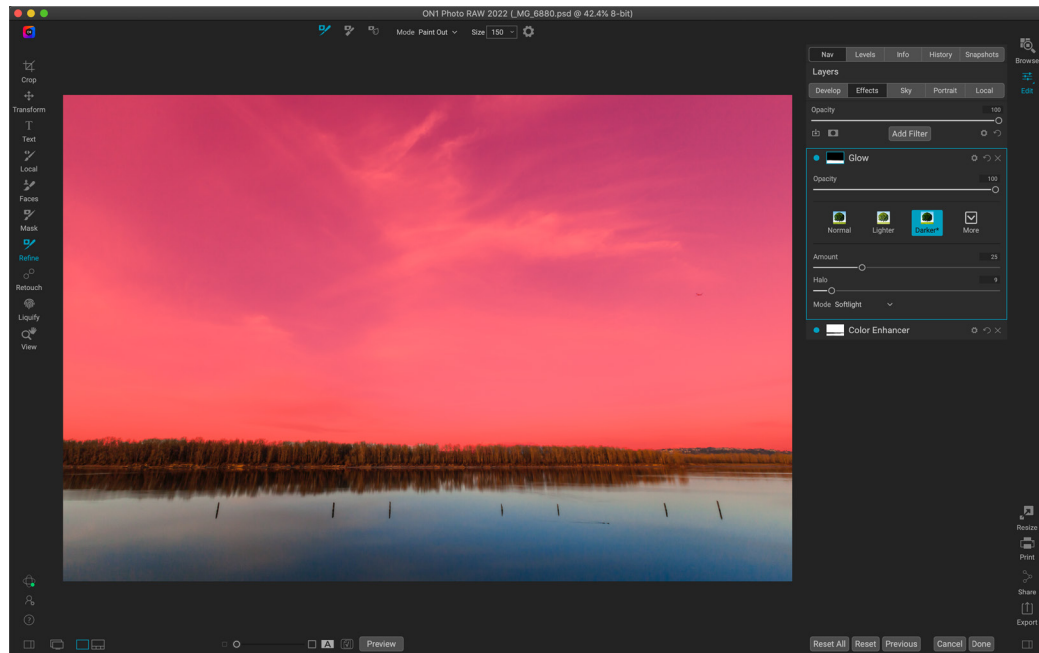
Once you click on the Done button, Photo RAW will create the finished mask (shown here as a red overlay), applied to the current filter. You can refine the mask further with any of the refine mask tools.

AI Quick Mask Tool Options Bar
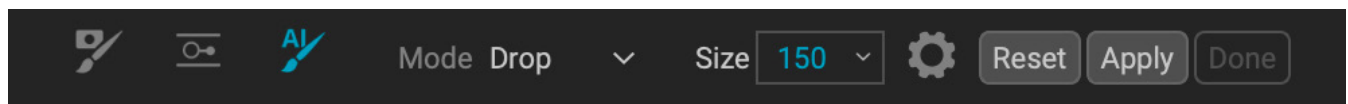
- **Mode:** This controls keeping (painting green) or dropping (painting red). Green areas are protected in your mask, and are the areas of a layer or filter that will remain. The areas marked in red will be removed or masked. In your layer these areas will become transparent. On a filter in Effects, these areas will have the filter's effect removed.

    You can tell your current mode by looking at the plus or minus icon in the center of the AI Quick Mask brush. If the icon is minus, you are painting drop (red) areas; if the icon is a plus, you are painting keep (green) areas. You can change the mode in the Tool Options bar, or by pressing the Shift-X key, or by holding down the Option (Alt) key temporarily.

- **Brush Size:** You can control the size of the brush using the Size pop-up. Use a small brush at high magnification for precise work, and a large brush at fit to screen for general work. You can control the size of the brush several other ways:

    - Use the left and right bracket keys: ' [' and '] ' .

    - Use your mouse's scroll wheel (this option can be set in Photo RAW's Preferences).

    - Use your pressure-sensitive tablet.

Further settings for the AI Quick Mask tool can be found by clicking on the gear icon in the Tool Options bar. There, you can set the following options (shown right):

- **Pressure Adjusts Size:** This option lets you control the size of the brush using a pressure sensitive tablet. The harder you press, the larger the brush becomes up to the current setting of the size slider.

- **Refine Edge:** This applies the Refine Mask Brush automatically to the edge of the resulting mask, creating a more natural transition. This is on by default and is recommended for most photos.

- **Show HUD:** This displays the AI Quick Mask HUD dialog (shown on page 92), which provides guidance on how to use the tool.

- **Overlay:** Sets the transparency of the red and green mask overlays on top of your image. A setting of 100 displays only the mask; the default setting is 50.
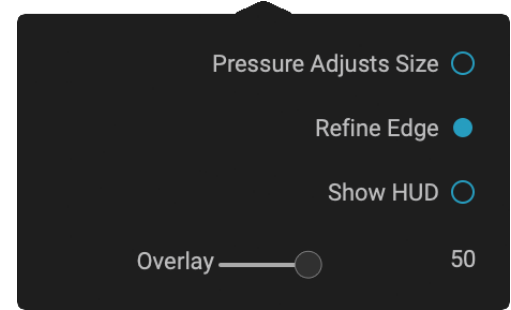
LINE MASK TOOL (MASK GROUP)
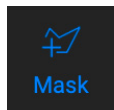
The Line Mask tool lets you create masks by drawing straight lines in your image, with the added flexibility of letting you adjust each individual line segment into curves to better fit the object you want to mask. Masks created with this tool are re-editable, can be copied and pasted like any other mask inside Photo RAW, and you can have multiple Line Mask selections for each mask.

To start, you click and drag along the outline of the area you wish to mask. Clicking your mouse button (or with a pen and tablet) adds a point to the line; you can continue to click along the edges of your desired selection, and the tool will add points along the way. These points will be represented by a small square. When you're finished, hover your cursor over the first point and click on it to close the path created by the tool. This will close the selection and change the cursor to a paint bucket icon; click inside the area and Photo RAW will create and the display the mask.
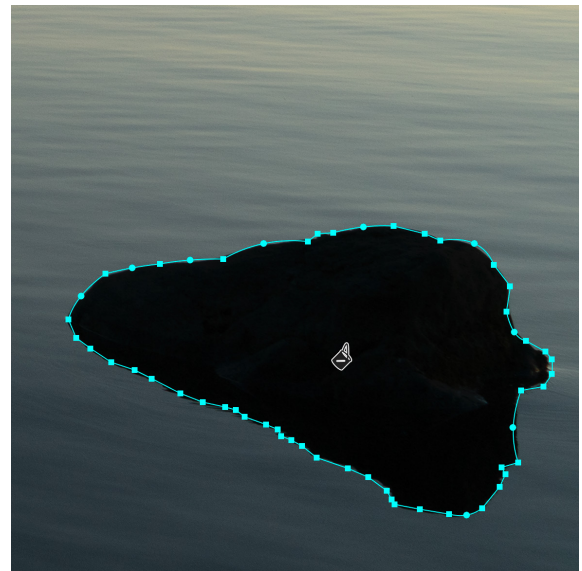
When you complete the mask area by clicking on the original point, the cursor will change to a paint bucket icon. Clicking in the area will generate the mask, and let you adjust any of the points, or add curves for further refinement of the mask edge..

Once you've closed the mask, you can adjust the feather and opacity of the mask, and you can further adjust the points on the line in the following ways:

- You can click on any point in the selection and move it by dragging it.

- If you hover (or click) on a point, you'll see a circle appear between that point and the previous point on the line. This circle can be dragged in all directions to curve the line to better fit the object you are masking.

- Add a point by holding down the Shift key and clicking on the line.

- You can delete any point by right-clicking on it and choosing Delete Point from the pop-up.

- You can delete the entire mask by choosing Delete Line Mask from the pop-up menu.

While you're creating the mask, the curve option is always available for the current point; move the cursor back over the line before the point and the circle will appear. You can then drag the curve in or out, and when you're done, move the cursor and click on the next place you wish to add a point.

When you've made your adjustments to the selection, you can click the Done button in the Tool Options bar to quit the tool, or you can create another mask.

To re-edit the mask at a later time, select the filter, layer, or adjustment layer that has the mask attached to it and choose the Line Mask tool. When you move your cursor over the area that contains the mask, the mask's outline will appear in light blue. Click anywhere on the outline, and the mask's points — both square and circle — will appear, and you can adjust it as you see fit, even the Opacity and Feather settings.

The curve option—visible when you hover over a point in the selection—lets you fine tune the line to make it better fit the object you're masking. (Shown here exaggerated for effect.)

Line Mask Tool Options Bar
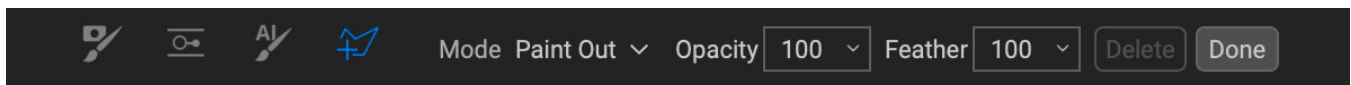
- **Mode**: The mode controls if you are painting out (hiding the effect inside the mask boundaries) or painting in (showing the effect).

- **Opacity**: This controls the opacity, or transparency of the finished mask, from 1 to 100 percent. At 100 percent, all of the effect will be displayed in the mask area; as the opacity level drops, more of the layer underneath the mask will be visible.

- **Feather**: Controls the hardness of the mask edge. The feather has a range from 1 to 100; 1 being a hard edge across the boundaries of the mask, 100 being a soft, wide edge that 'feathers' the transition between the masked and unmasked boundaries.

- **Delete:** Removes the currently selected line mask.

- **Done:** Saves the current line masks ad closes the tool, returning Photo RAW to the View Tool.

REFINE BRUSH (REFINE GROUP)
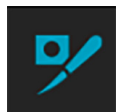
This tool cleans up intricate areas and the borders along a mask, and is helpful for cleaning up a mask created with the Masking Brush. For example, when you wish to apply an effect to a subject, and there are areas such as hair, or tree branches that are difficult to remove with the Masking Brush.

To use the Refine Brush, select the tool in the Options bar and paint along the edges where you would like the mask to be refined. The brush strokes are displayed as a red overlay, and when you let up off the mouse button, Photo RAW will work to make making the mask edge more defined, improving the overall mask.

Refine Brush Tool Options
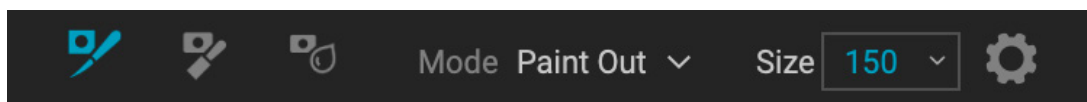
- **Mode**: Controls the refinement mode, either Paint Out, which refines to remove from the mask, Paint In, which refines to add to the mask, or Auto, which does both at the same time. Paint Out is recommended in most cases.

- **Size**: This adjusts the size of the brush. Select a brush size that is just larger than the

intersection of the subject and background. Avoid using oversized brushes it will take longer to process and may yield lower quality results.

- **Pressure Adjusts Size (gear icon)**: If you have a pressure-sensitive tablet you can control the size of the brush with pressure when this setting is turned on.

CHISEL MASK TOOL (REFINE GROUP)

The Chisel tool, accessible vie the Refine Tool Options, bar works to remove fringes or halos along the hard edges of a mask; just click and drag along the edges of a mask you wish to refine. Fringes are common when the background to be removed is brighter than the foreground. The chisel works like a chisel or plane in a wood shop: It removes just a sliver along the edges, and, because it only works on the edges, you don't have to be too careful when using it.

Chisel Mask Tool Options

Mode Remove   Size 20   Amount 10
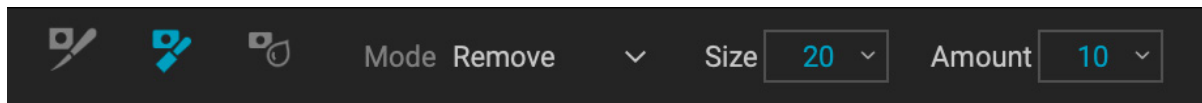
- **Mode**: Select remove or add
- **Size**: Adjusts the size of the chisel tool. Feel free to use a large chisel to make brushing fast. The size of the chisel does not affect how much is chiseled off.
- **Amount**: Controls the amount of pixels that will be removed or added during each stroke.

> **TIP:** Double-click on the Chisel tool icon to apply the chisel to the entire mask.

BLUR MASK TOOL (REFINE GROUP)

The Blur Mask tool softens edges of the mask where you paint; all you need to do is run the tool over the edges you wish to blur. Softening the edges on blurred or semi-transparent subjects like hair can make them blend with a new background in a more realistic manner.

Blur Mask Tool Options

Mode Normal   Size 50   Amount 30
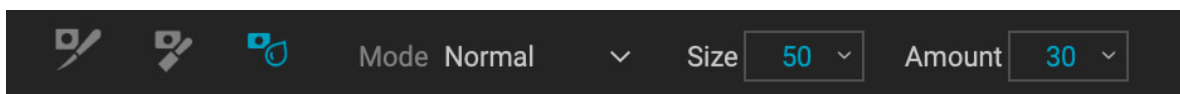
- **Mode**: Remove/Add/Normal lets you adjust what part of the mask edge to blur. Remove blurs and lightens the mask, Add blurs and darkens the mask, Normal blurs both light and darks.
- **Size**: Adjusts the size of the blur tool. Feel free to use a large size to make brushing fast. The size of the brush does not affect the blur amount.
- **Amount**: Controls the amount of blur. Use a low amount to maintain detail.

> **TIP:** Double-clicking on the Blur tool icon applies the blur to the entire mask.

HEALING BRUSH (RETOUCH GROUP)

The Healing Brush is a tool for removing distractions like dust spots, power lines and unwanted people from your photos, using sophisticated content-aware fill technology. Like the other retouching tools, you can apply the brush to multiple portions of an image. Unlike the other tools, however, the Healing Brush is fully non-destructive: each area you apply the brush to is individually editable (and removable).

To use the brush, paint over a distraction and a matching area of your photo will be blended on top to replace it, using content-aware technology. You'll see two circular markers: red, which is the area that has been

Areas that use the Healing Brush will be displayed as a gray marker. Clicking on a specific marker will display the source and area used to fill the source. You can then readjust its placement, or delete the area.

removed, and green, which is the area that was used to fill the source. Each marker is movable by clicking and dragging; sometimes, you'll want to try a different area to match to your source. Non-active markers will be displayed as gray squares until you click on them. (Press the Delete key to remove the current area.)

The Healing Brush has two modes: Heal and Stamp. When you use the brush in Heal mode to remove a distraction it applies content-aware matching from a nearby area to mask the object or area painted out. When you use the brush in Stamp mode, it acts like the Clone Stamp, applying the actual pixels from the area used to mask the object out; unlike that tool, however, this option is non-destructive.

Healing Brush Options
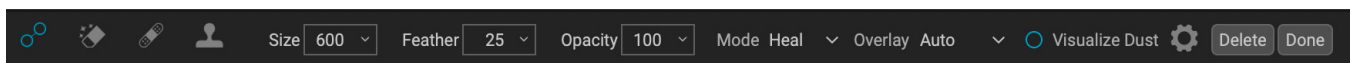
- **Brush Size**: Adjusts the overall size of the brush.
- **Brush Feather**: Adjusts the hardness of the brush.
- **Brush Opacity**: This adjusts how strong the retouching is. Use 100% to completely remove an imperfection. Use a lower opacity to soften it.
- **Mode:** selects either Heal (content-aware) or Stamp (pixel-exact) mode when brushing.
- **Overlay:** Sets the display of the markers designating retouched areas. Auto displays all the markers in the photo, with the current marker highlighted in red and green, and the others as gray. Selected will only display the current marker (in red and green); the other markers will only be visible as you move over the photo with your mouse.
- **Visualize Dust:** Changes the view to a high-contrast overlay, to help view sensor dust spots more easily.
- **Pressure Adjusts Size (gear icon)**: If you have a pressure-sensitive tablet, you can adjust the size of the brush according to the pressure. Click the button to activate.

PERFECT ERASER (RETOUCH GROUP)

The Perfect Eraser can be used to remove distracting elements and blemishes from your image. It uses a content-aware algorithm that replaces the pixels with a natural-looking result within the boundaries that are painted.

Using the tool is easy: paint over the area you wish to remove, making sure you cover the entire area. A red overlay appears where you paint. If the first attempt does not give you a perfect result, paint over it again and it will improve with each pass. You can also fine tune the area after applying the tool by using the Retouch Brush (see below).

Perfect Eraser Options
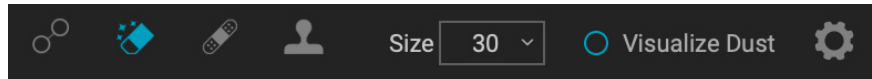
The Perfect Eraser's Tool Options bar consists of three options; brush size, a dust-spot overlay, and pressure-sensitive tablet support.

The default brush size for the Perfect Eraser is 125 pixels; you can make this bigger or smaller by clicking on the Brush Size in the Tool Options bar, or by pressing the right or left bracket keys on your keyboard. The maximum brush size is 500 pixels.

The Visualize Dust check item will display a high-contrast overlay that you can use to help find and eliminate sensor dust spots.

If you have a pressure-sensitive tablet, select the Pressure Adjusts Size item, which is in the gear icon.

RETOUCH BRUSH (RETOUCH GROUP)
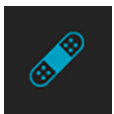
Use the Retouch Brush to remove small imperfections like dust or blemishes. Just dab the brush on areas that contain spots or other imperfections, such as acne, sensor dust, power lines and more. The tool looks at the neighboring areas in your image and fills in the brushed area with an area of similar color and texture.

It is best to use the smallest brush size possible and to work by dabbing rather than making large brush strokes. If you dab with the Retouch Brush and don't like the results, use the Undo command and try using a smaller brush or vary your brush stroke and try again. The Retouch Brush is also great for retouching skin.

Retouch Brush Options
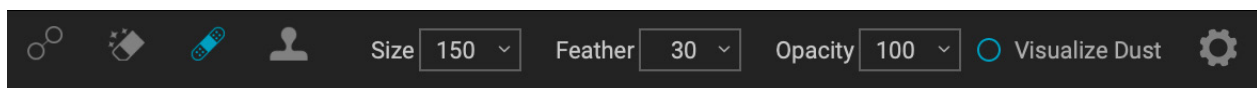
- **Brush Size**: This adjusts the overall size of the brush.
- **Brush Feather**: This adjusts the hardness of the brush. It works best to use a feather larger than 50 to blend and look natural.
- **Brush Opacity**: This adjusts how strong the retouching is. Use 100% to completely remove an imperfection. Use a lower opacity to soften them.

- **Visualize Dust:** Changes the view to a high-contrast overlay, to help view sensor dust spots.
- **Pressure Adjusts Size (gear icon)**: Click on the button to activate the sensitivity controls for your pressure-sensitive tablet.

CLONE STAMP (RETOUCH GROUP)

Use the Clone Stamp tool to replace an area of a photo with an area from a different part. Hold down Option (Mac) or Alt (Windows) and click the area you want to clone from. Then click and drag on the area you want to clone over and it will clone from the point you selected.

Clone Stamp Tool Options

- **Brush Size**: This adjusts the overall size of the brush.
- **Brush Feather**: This adjusts the hardness of the brush. It works best to use a feather larger than 50 to blend and look natural.
- **Brush Opacity**: This adjusts how strong the retouching is. Use 100% to completely remove an imperfection. Use a lower opacity to soften them.
- **Visualize Dust:** Changes the view to a high-contrast overlay, to help view sensor dust spots.
- **Pressure Adjusts Size (gear icon)**: If you have a pressure sensitive tablet, you can adjust the size of the brush according to the pressure. Click the button to activate.

LIQUIFY TOOLS (PUSH, BLOAT, PINCH)

The three tools of the Liquify group all have different warping characteristics, but they share the same options, and all adjustments made with the tools are non-destructive, in a manner similar to the Healing Brush. The "active" marker (the one currently selected) will be displayed as a blue square. Non-active markers will be displayed as gray squares until you click on them to make them active. (Press the Delete key to remove the current area.)

You can easily adjust the individual regions made by any Liquify tool after the fact, by moving the stroke, or by adjusting the Size and Pressure settings for each stroke. You can't apply multiple strokes (or different Liquify tools) over the same region, however.

The Liquify tools can be used to push, enlarge, and shrink areas of a photo to reduce flaws or reshape regions for emphasis. Here, we've used a combination of the Bloat and Pinch tools to reduce the size of some of the background tulips, while enlarging the prominence of the foreground one. All of the regions created by the tools are represented as gray squares; clicking on any of them will let you reshape that region or delete it.

You can use the Liquify tools to move items in a scene slightly, and enlarge or contract elements that need greater or lesser prominence. Like any other adjustment, it can be easy to overdo any of these tools, and you might find that it takes a bit of time to find the best use for each tool, but they can be quite useful for many retouching and editing needs.

Liquify Tool Descriptions

The Push tool lets you reshape areas of a photo by "pushing" and warping the pixels in the region being brushed. The result is akin to finger painting. Of the three Liquify tools, Push is the one that is closest in operation to a brush, where you apply strokes to warp the area being reshaped.

The Bloat tool works to "enlarge" the area under the cursor; you can click and hold the mouse button (or click it multiple times) to increase the effect until it reaches the maximum limit of pressure. While you can apply a brush stroke with the Bloat tool, you might find that playing with the brush size can be more helpful when enlarging an area than creating a larger stroke.

The Pinch tool works to "shrink" the area under the cursor; like the Bloat tool, you click and hold the mouse button to increase the effect until it reaches the maximum limit of pressure. While you can apply a brush stroke with the Pinch tool, you might find that playing with the brush size and using multiple regions can be more helpful when trying to reduce a region with a longer stroke.

Liquify Tool Options
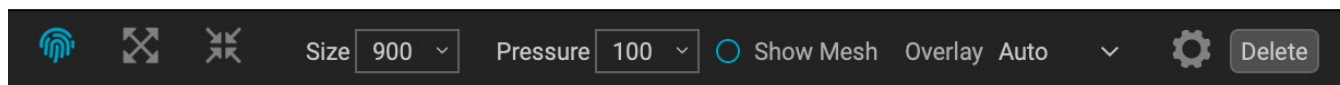
- **Size**: This adjusts the overall size of the brush.
- **Pressure:** Sets the strength of the warped area.
- **Show Mesh:** Displays a grid overlay of the warped area made by the tool.
- **Overlay:** When set to Selected, displays only the currently selected push stroke. When set to Auto, Photo RAW will display all of the Liquify tools' strokes in the image; the selected one will be highlighted in blue, while the others will be represented as gray.
- **Tablet Adjusts Size (gear icon)**: If you have a pressure-sensitive tablet you can control the size of the brush with pressure when this setting is turned on.
- **Tablet Adjusts Pressure (gear icon)**: If you have a pressure-sensitive tablet you can control the pressure amount when this setting is turned on.
- **Delete:** removes the currently selected region.

The Show Mesh grid overlay can be useful as a live map of the Liquify adjustments made to an image. Areas of the grid that have had one of the three tools applied will be distorted, and can help determine whether a region needs additional refinements in either Size or Pressure.

VIEW (ZOOM) TOOL
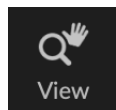
This tool, which is the default tool selected when you open an image in the Edit module, adjusts the magnification of the image in the Preview window. With the Zoom tool selected, click in the Preview window to zoom in and center the image at the location clicked. Hold down the Option/Alt key to display the Hand tool, which lets you pan around the magnified image. You can also double-click the Zoom tool in the Tool well to set the image to 1:1 (or 100%) magnification view, which shows every pixel. This is best when examining small details.

Masking Basics

One of Photo RAW's most powerful features is its masking capabilities. Every filter in Effects, every adjustment panel in the Local tab, and every layer can have a mask associated with it. And, when you're retouching a face in Portrait AI, that face has had a mask automatically generated for it.

At its simplest level, a mask shows or hides the effect of the filter or adjustment. Masks have no color: they are grayscale, and the tones range from pure white to pure black. A mask that is completely white displays the entirety of the effect being used, a mask that is completely black hides that effect. (A common way to remember it is via the phrase "**black conceals, white reveals**.") Shades of gray are in effect the opacity of the mask. Darker shades reduce the effect, lighter shades let more of it through.

The beauty of the masks is that you can paint with black, white or any shade in between, so you can "mask" portions of your photo so that they will not have that effect—or will have a reduced effect. You can also copy masks from one filter and past them into other filters. Using this feature, you can mask out the sky in one filter, copy the mask, paste it into another filter and invert it, applying a different effect to everything but the sky. Photo RAW even lets you create luminosity masks, which are masks that are solely based on the brightness of the pixels in the image. You can view your masks, either as a red overlay or as the grayscale version of the actual mask, which can be helpful when you wish to look at the edges of mask.

Three views of a mask, here shown attached to a Glow filter in Effects. When you first add a filter (or a layer), the mask is empty (top). If you click on the empty mask, Photo RAW will automatically generate the mask, here shown filled with white, which means all of the effect will come through (middle). When you use any of the masking tools, the areas masked out (partially or completely), will be shown in the filter's mask view (bottom). You can use the View Mask options to show the current mask as an overlay or in grayscale to give you a much more accurate display of the mask with your photo.

Creating masks can be as simple as choosing the Mask Sky option from the Mask menu or dropping a gradient on a photo, or as complex as using multiple tools and masking functions. For instance, you can drop a gradient on a photo, use the Masking Brush to paint in places where don't want the gradient applied, or you can use the Color Range tools to select portions of an image based on color.

THE MASKING TOOLS AND VIEW OPTIONS

Inside ON1 Photo RAW 2022, there are four basic tools used to create masks: the Masking Brush, the Masking Bug, and the AI Quick Mask and Line Mask tools. There are variants of the first two that are specific to Local Adjustments (Adjustable Brush and Adjustable Gradient), while the Portrait AI brush is a version of the Masking Brush specifically for use in retouching portraits.

You can use the gradient and masking brush tools cumulatively, meaning that you can add to or subtract from the current mask. However, if you select the AI Quick Mask tool, it will replace any existing masks on that pane or layer.

The Refine group of tools—Blur, Chisel and Refine—are designed to help work with edges and halos that can crop up when you have areas of strong contrast between a masked area and an unmasked one.

In addition to the masking tools, each mask has a set of controls you can use to manipulate the mask to refine it further.

When you add a filter or a layer, the mask is technically hidden. You can create a mask by either using one of the masking tools, or by clicking the Show/Hide Mask icon in the title bar of the pane, to the right of the filter name. The contents of the Show Mask icon will represent the mask on that layer. (Local Adjustment panes automatically create a black layer mask, so you can 'paint in' the adjustment to the image.)
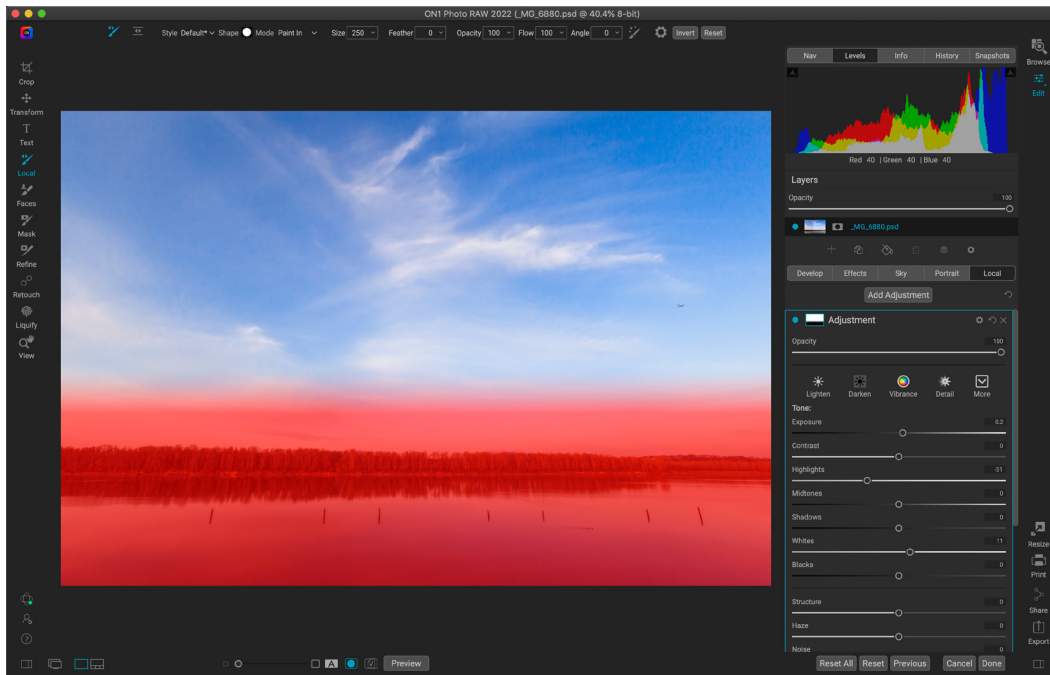
Here is a local adjustment—using the Adjustable Gradient tool—that has been applied to a photo to darken the sky. The Show Mask option has been turned on, so you can see where the effect has been masked out (shown in red). The gradient mask is softer at the top of the gradient, and entirely opaque at the bottom of the gradient. These smooth transitions can create a better look for your photos.

Photo RAW has two primary options for viewing the contents of a mask: either as a red overlay on top of your image (the default) or a view only of the mask itself, represented as grayscale. The grayscale view can be helpful when checking edges, or when refining some of the advanced masking controls. These mask view options are available from the Mask menu; select Show Mask to see the mask, while the View Mode option lets you switch between the two modes. You can also set the app to display the red overlay when you are brushing with the Masking Brush and its cousins. (Photo RAW will remember the previous settings.)
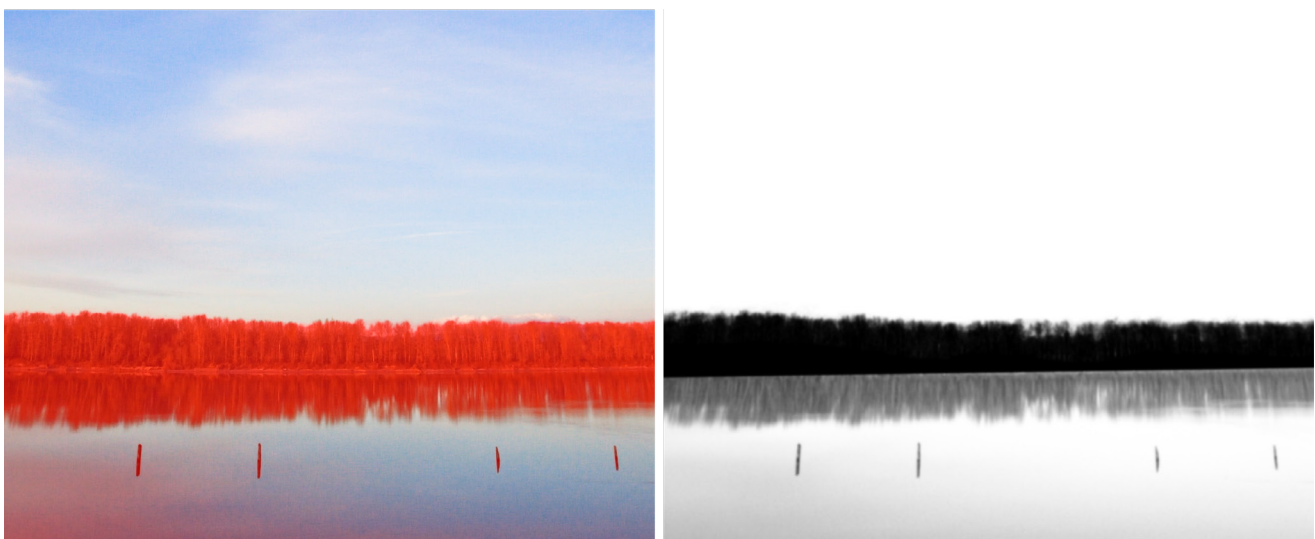
The two Mask View options help in different ways. The Red Overlay option (above left) can give you an idea of what portions of your photo are successfully masked in or out. The Grayscale option (above right) lets you view the mask solely as luminance values, where pure black indicates portions that have been masked out completely, pure white is where the effect is applied completely, and the levels of gray indicate partial application of the effect. The Grayscale option is especially useful when you wish to check the edges along a mask border.

When you're viewing a mask in either overlay or grayscale modes, you have access to all of the tools in the Edit module. You can zoom in, to view the mask in greater detail, you can use the Refine masking tools to adjust the fine edges of your mask, or you can use any of the other the masking options described below.

MASKING CONTROL OPTIONS

When you click on the Mask icon at the top of a pane or in a layer, Photo RAW will display a set of options for that mask. This section has the following contents, as shown, using the Color Enhancer filter as an example:

A. The Show/Hide Mask icon, which displays the contents of the current mask. The default mask contents are white when you add an effect, and black when you add a local adjustment layer.

B. Buttons for opening the blending options, resetting the filter, and removing the filter from the stack.

C. Sets the overall opacity of the effect.

D. Larger display of the current mask, option to invert, reset, copy, paste, create a luminosity mask, and view/hide the mask.

E. Density adjusts the overall mask density from black (100) to white (0). Feather blurs the mask.

F. The Levels and Window settings let you adjust the black and white points of the mask, fine tuning them in different ways.
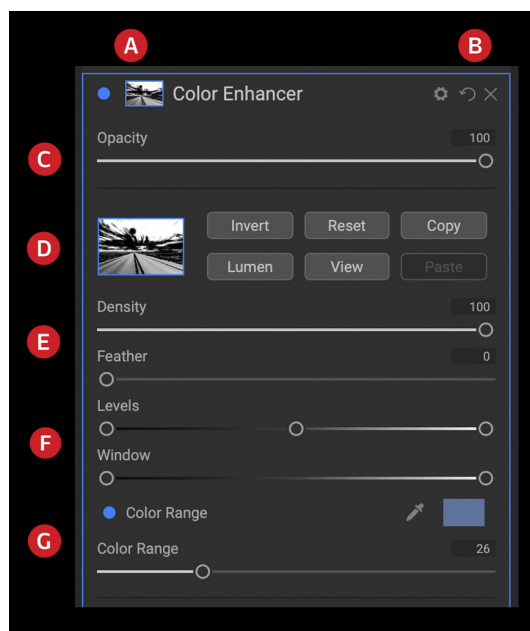
Overview of the Mask Options section of a filter pane in Effects. Mask Options is also applicable when working in the Local Adjustments tab, or on a layer in the Layers pane.

G. The Color Range option lets you choose a color (selected via the dropper tool), and make or tune the mask based on the range of the color selected.

The buttons at the top portion of the Mask Options can be quite helpful, especially when you're working with complex masks, or when you wish to reuse masks in other parts of Photo RAW. There functions are as follows:

- **Invert** reverses the contents of the mask, swapping the tones.
- The **Reset** button erases the current mask, leaving it filled with white.
- The **Copy** and **Paste** buttons let you copy the current mask, to paste it into another filter, local adjustment or layer.
- The **View** button toggles the Mask View on and off.
- The **Lumen** button creates a luminosity mask of the image (see).

Color Range selections

The Color Range option lets you create a mask using a specific color, either one inside your image, or one via your system's color picker. To use this option, click the On button next to the Color Range section, and

click the eyedropper tool to select a color inside your image that you wish to sample. You can then use the slider to expand or contract your mask based on that color: lower numbers means that fewer colors (related to the chosen color) will be selected, higher numbers mean a wider range of colors will be selected.
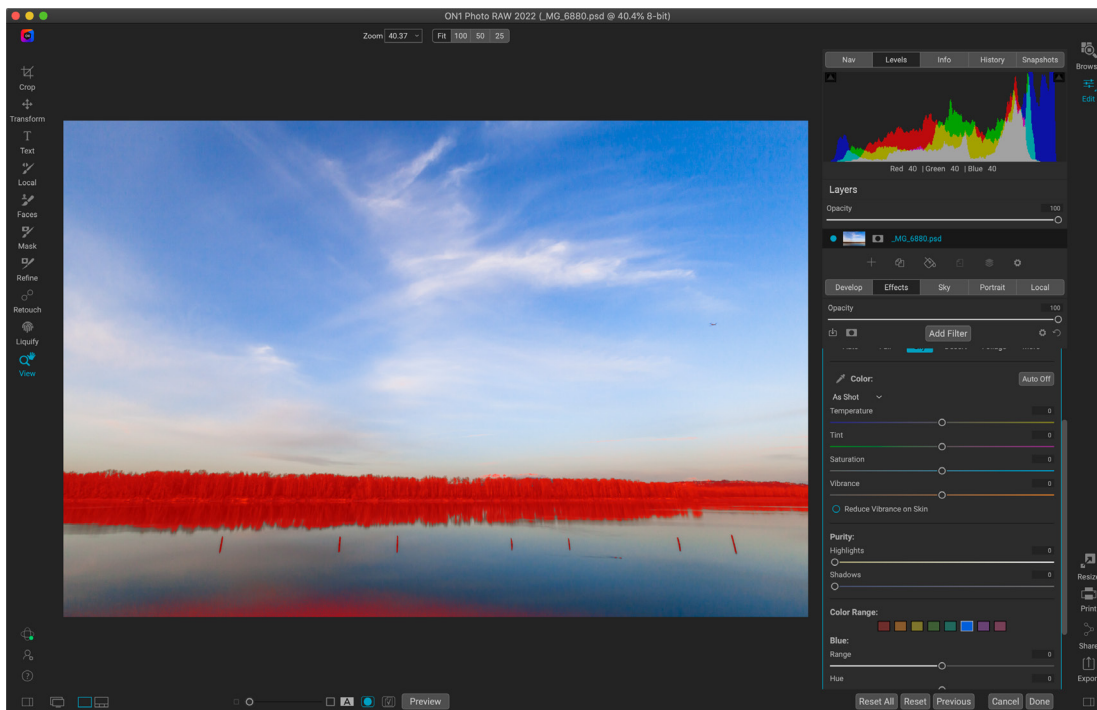
Here, we've created a mask using the Color Range option in the Mask Options section for this Color Enhancer filter in Effects. We clicked on a blue color in the sky to use as the base for the selection range. Adjusting the Color Range slider while viewing the mask lets us fine tune the selection.

The Color Range option found in the Gradient masking tools can be controlled from the Mask Options section of the pane. When you add a gradient mask and click on the Color Range option in the Tool Options bar, the color chosen is sampled from the center of the gradient control, but you can open the Mask Options pane and sample a different color using the eyedropper. Note that if you do this, and move the masking bug, it will resample using the color from the center of the bug.

Luminosity masks

A luminosity mask is a specialized mask type you can create anywhere you can create a mask inside Photo RAW. This mask uses the brightness (or luminance) values in your image to let you target specific tonal ranges with an effect (or to hide the effect from those tones). It is ideal for subtle enhancements to very specific areas of an image. They can be used for targeted sharpening and contrast operations, highlights control, and much more.

To add one of these masks, click on the Lumen button in the Mask options area or choose Create Luminosity Mask from the Mask menu. Because luminosity masks take the brightness levels of a photo, when you view the mask, it will look like a grayscale version of the image. With a luminosity mask, your effect will be applied in an increasing amount depending upon the brightness value of the pixel underneath: if the pixel is black, none of the effect will be applied; if it is white, it will be entirely applied; for all other tones, the effect will get applied as a percentage of the pixel's brightness, from 0 (white) to 100 (black).

You can use the Levels or Window controls to further target tones with your luminosity mask. The Levels setting lets you set the black (left triangle) and white (right) points of the mask, with the midpoint, or gamma, setting being adjusted by the middle triangle. This lets you refine the mask to focus on narrow

bands of luminance values in an image; for example, if you wanted to focus an effect on the midtones, bringing the white and black points into the middle of the Levels slider, and adjusting the midpoint, will achieve this much quicker than you could with the Masking Brush.
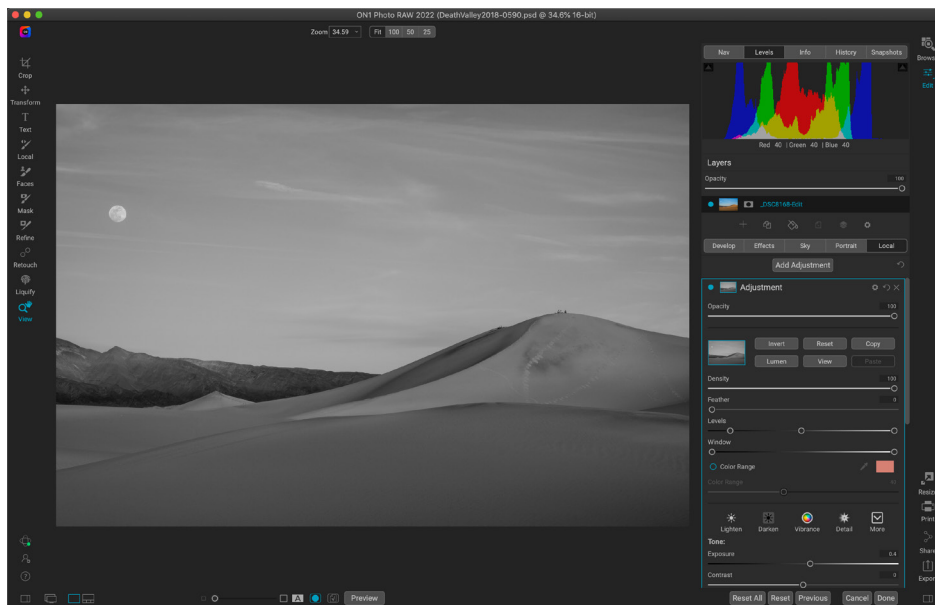
Viewing a luminosity mask is similar to a black-and-white version of your photo; the lighter the tones, the more the intended effect will be, and the darker the tones, the lower the effect.

The Window slider is similar to the Levels slider, in that it works like a black point slider from both sides. When you move the right and left triangles, all of the tonal ranges outside the points will be black, leaving those areas affected that are within the 'window' of the mask. For example, if you wanted only the shadows in your image to have an effect, you would move the right slider over towards the left by about two-thirds.

MASKING TIPS

Here are a few tips for working with the various options in the Mask pane:

- You can use multiple masking tools to create and modify masks. For example, you can start with a luminosity mask, adjust the tonal range of the mask with the Levels or Window sliders, and then further refine your mask by painting in or out with the Masking Brush or Masking Bug. Adding a luminosity mask always overrides the current mask (as is the case with the AI Quick Mask tool), however, so you should start there.

- Use the Feather slider to smooth transitions between masked and unmasked sections.

- Lowering the Density slider helps intensify an effect after you've created a mask. Think of it like a 'reverse fade': at the 100, all of your mask is viewable, at 0, the mask is entirely white.

- Don't forget that masks aren't just for Effects filters and Local Adjustments; you can create a master layer mask that will apply your selection to the cumulative adjustments made in the Edit module. To do this, click on the Mask icon to the right of the layer.

- Because it can sometimes be helpful to use the same mask on different filters, use the Copy button to grab the contents of a mask from one filter and the Paste button to paste that onto the mask of another filter. The Invert command can be invaluable when you wish to apply a filter to the opposite portion of a photo. Think of applying one effect to a sky, and the other to your foreground.

- Because masks are tied to the actual pixels of the current photo (or layer), they cannot be copied from one photo to another, or between layers in a multi-layered document.

Presets

Presets are stored "recipes" that include sets of Edit module adjustments, and can be applied to one or 100 images with ease, in Browse or Edit. Presets are a fast way to get consistent results when editing a group of images, helping you hone your own look. You can also easily create your own presets.
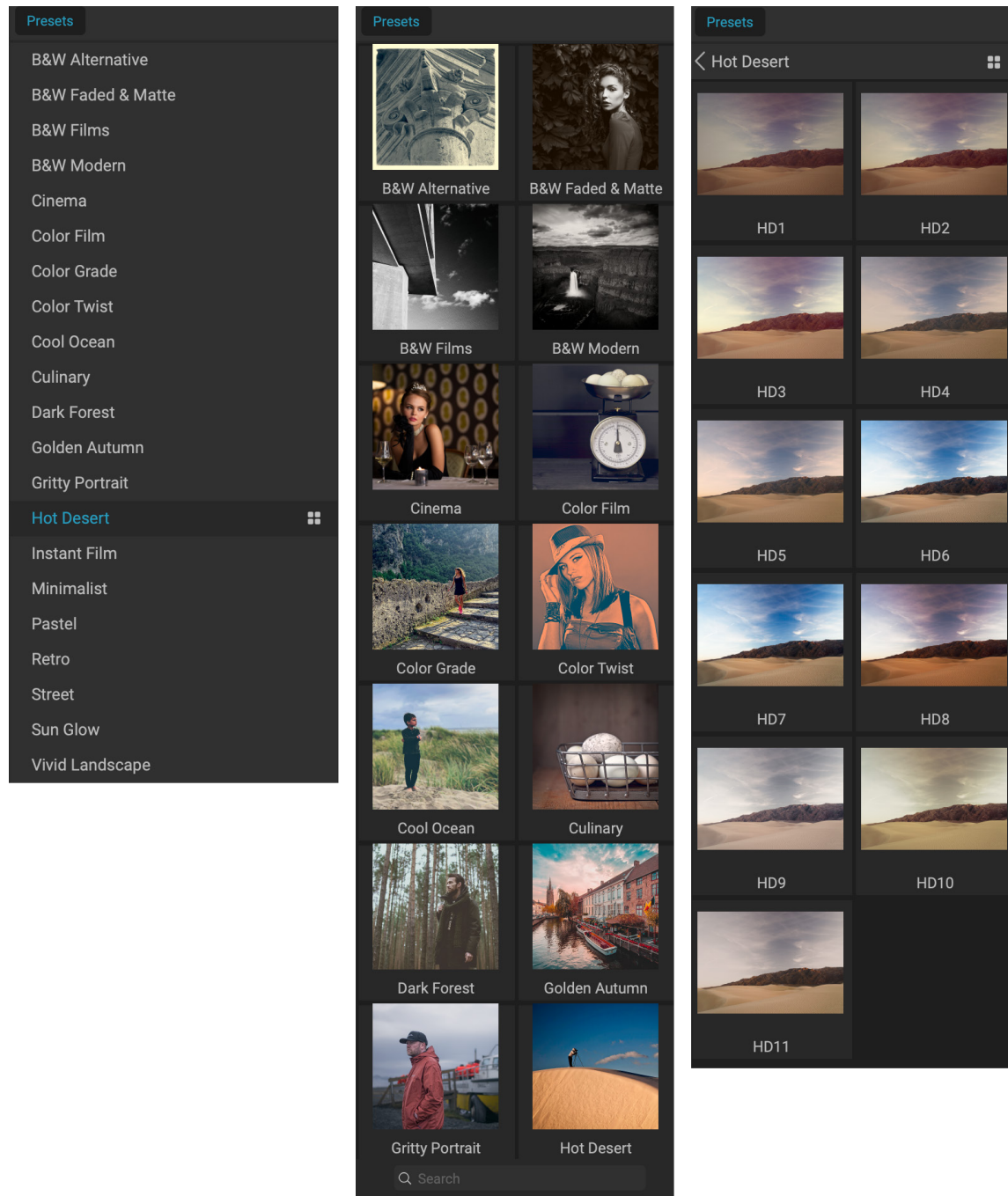
Three different views of the Preset panel. On the left is the List view, in the center is Thumbnail view; these views display the categories of presets. (The view options can be set in the View > Preset Browser submenu.) On the far right is an expanded category, displaying the various presets, with a thumbnail of the current image with the preset applied. From there, you can apply a preset to the current image.

As you hover over a category, the Quick View Browser icon appears on the left side of the category's name.(Hot Desert is shown above in the preset category list.) Clicking on that icon will open a full-screen window showing your photo with that category's presets applied to it. (See the following page for a screen shot of the Quick View Browser.)

Photo RAW lets you create your own custom presets and categories, and you can also create subcategories of presets. (See *"Managing Presets and categories" on page 110* for more.)

ON1 Photo RAW 2022 comes with more than 200 built-in presets, in more than a dozen categories, ranging from landscapes to portraits, color grading, film looks and much more. You can create your own presets, or import presets from other ON1 users and photographers.

You can create presets that apply Develop adjustments, Effects settings, Portrait operations and local adjustments that use the Adjustable Gradient tool, and any combination of these.

Presets can also store the camera profile used, Develop's Auto settings, crop settings and retouching information, as well as masks created with brush tools, Effects' Masking Bug, and the Adjustable Gradient Tool in the Local Adjustments panel. If you apply a preset that contains these options, you should check to make sure that you have the desired result; if not, you can reset the various individual operations via the Settings menu.

APPLYING PRESETS

To apply a preset to an image, click on the Presets panel. There you will see any built-in presets supplied by ON1—ordered by category—as well as any presets you might have created or installed yourself. Clicking on a category name will open it and display any presets within that category, with a tiny thumbnail showing your selected image with that preset applied to it. To change the size of the thumbnails in the Presets panel, select the Browser Mode option from the View menu and choose One, Two or Three Column View.
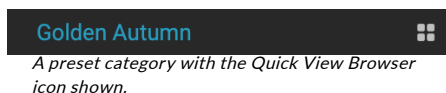
Golden Autumn
A preset category with the Quick View Browser icon shown.

If you'd like to see a larger representation of what your selected photo will look like with a category's presets, click on the Quick View Browser icon in the category's title bar. That will display a window with all of the presets in that category. (Press the Escape key to close the Quick View Browser.)
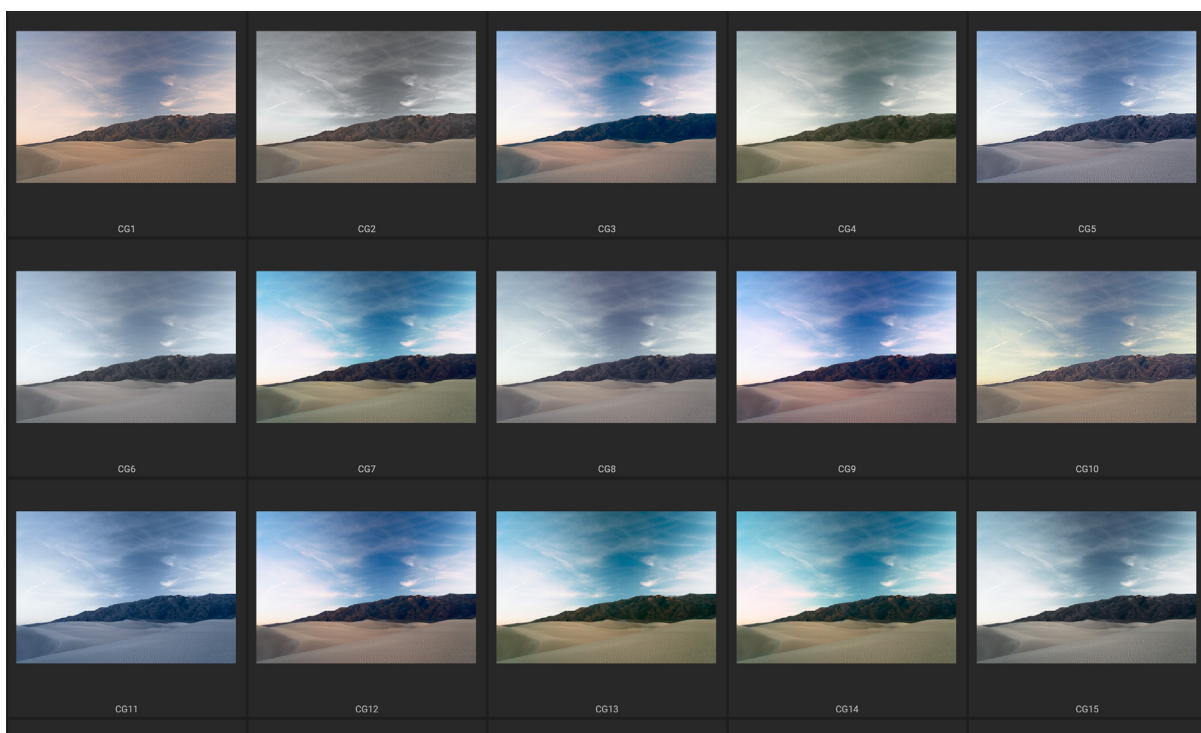
Clicking on the Quick View Browser icon in the Panels pane (or choosing Open Quick View Browser from the Window menu) will open a full-screen representation of that category's presets, giving you a larger representation of how that preset will look on your image.

To apply a preset to a photo, click on the preset in the mini-browser or in the Quick View Browser. Presets are not cumulative; clicking on another preset will remove the previous one and apply the new one.

Once you've applied a preset, you can reduce its overall effect by hovering over the chosen preset. There, you will see a Fade slider, where you can lower the opacity of any Effects filters applied with the preset. (Develop, Portrait, and local adjustments are not reduced.)

After you have applied a preset, you can still make changes to any of the settings—in Develop, Effects, and Local Adjustments—add or remove adjustments, switch to another preset, perform any retouching or more.

If you don't like a preset, clicking on another one will replace the settings of the previous preset with the settings of the new preset. To remove a preset entirely, choose one of the reset options from the Settings menu, or remove the individual settings from the appropriate panes in Develop and Effects. (The latter approach is recommended if you have created masks or local adjustments that you wish to preserve.)

The Fade slider reduces the opacity of Effects filters applied with a preset. To find it, just hover over the applied preset in the Presets pane.

You can save a preset as a favorite by hovering over its thumbnail in the browser, and clicking on the heart icon. This will add that preset to a Favorites category that resides at the top of the Presets panel. To remove a favorite, click again on the heart icon.

Inserting presets (Effects tab only)

When you click on a preset, Photo RAW's default behavior is to remove any existing adjustments and apply the newly chosen preset to your photo. Sometimes, however, you would like to add a preset on top of your adjustments. To do this, open the Presets pane, right-click (Option-click on MacOS) on the preset you wish to add, and choose Insert Preset from the pop-up. This will add the preset's filters above the currently selected filter pane and preserves edits you made in the Develop or Local tabs.
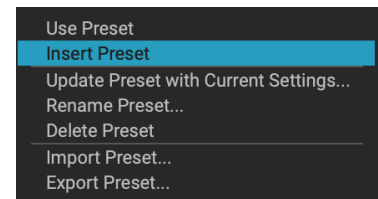
The Inset Preset option is only available when working in the Effects tab.

Inserting a preset will only add that preset's Effects filters to your currently edited photo. Develop adjustments and local adjustment layers will not be added.

CREATING YOUR OWN PRESETS

Once you have a group of edited settings that you wish to save, go to the Settings menu and select Save Preset. The Save Preset dialog will appear, with options for which module's settings you wish to save, naming the preset, and adding it to an existing or new category. Nearly all of the Edit module settings can be saved as a preset, including cropping, retouching, text blocks and masks.

If you have applied a preset to an image, and subsequently updated any of the edit settings (or add or remove adjustments), you can update the preset with the new settings by choosing Update Preset with Current Settings from the Settings menu. This will only change the preset in your app; any images that had the old version of the preset will keep those settings unless you reapply the preset. (You can also update a preset by right-clicking on the preset in the Preset Browser.)
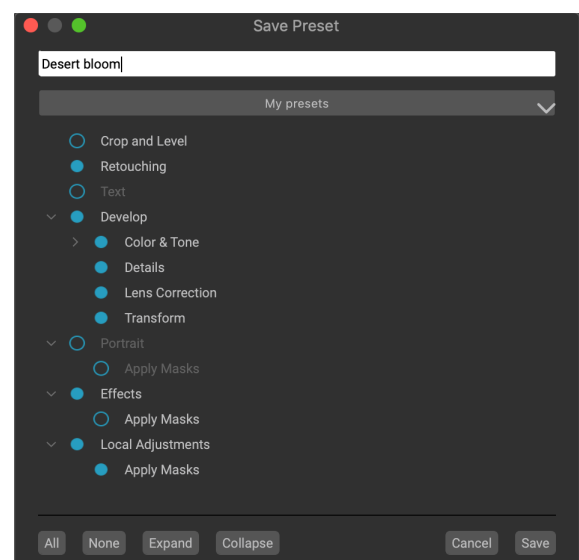
The Save Preset window is similar to the Sync Settings window (see "Copying settings and synchronizing edits" on page 59), and includes all of the operations possible in the Edit module, with the exception of layer operations. Filled circles to the left of a setting mean that the setting will be saved in the preset; click the circle if you don't wish that setting to be saved.

If you would like to create a new preset category—which will be added to the Presets panel throughout Photo RAW—choose Add New Category from the category pop-up.

MANAGING PRESETS AND CATEGORIES

You can perform a variety of operations on presets and preset categories, including importing and exporting presets (individually or by category), deleting individual presets, and hiding categories.

Importing & Exporting Presets

You can import presets you have downloaded from the ON1 website or other source. Some files will be individual presets, while others might be preset "packs," which will include more than one preset.

A preset will have an '.ONP' extension, while a preset pack has an 'ONPreset' extension; all you need to do is double-click on the file—or choose Import Preset from the Settings menu—and Photo RAW will ask you to pick a category where you wish to place the preset or pack, and it will copy the presets into the app. You can delete the downloaded files, if desired.

To export an individual preset, click on it and choose Export preset from the Settings menu. You can also export an entire category of presets, via the category preset menu (shown below).

Deleting presets

To remove a preset if you no longer want to have access to it, select the preset you wish to remove in the Preset panel, and choose Delete Preset from the Settings menu. You can also right-click on an individual preset and click Delete Preset from the pop-up menu.

You can delete any preset, including the presets that came pre-installed with ON1 Photo. If you think you might wish to save a preset, export it first, then delete it.

Managing categories

In addition to creating your own preset categories, which get displayed in the Presets pane, you can also perform other operations on categories, including deleting, renaming or exporting. These options are all available via the Preset Category pop-up menu, which is available when you hold right-click on a category name:
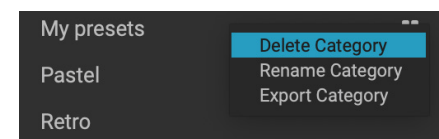
Right-click on a preset category to get the category pop-up menu.

- To remove a category—and its presets—from the Presets panel, choose Delete Category from the pop-up.
- Choose Rename category if you wish to change the name of the category.
- To export a category and all of the presets within it as an ONPreset pack, choose Export Category from the pop-up menu.

> **TIP:** Many preset management options can also be performed by clicking on a preset in the Preset panel and right-clicking on the preset. This is helpful if you want to update, export or rename a preset without applying it to an image in Develop or Effects.

Creating nested presets

To help manage large groups of presets, Photo RAW's Extras Manager lets you nest preset categories. See "Organizing Presets" on page 10 for details on how to create and manage preset category subfolders.

CAMERA-BASED PRESETS

In addition to using presets in the Browse and Edit modules, you can also have Photo RAW automatically apply a preset to any new photos from a specific camera, even down to the serial number.
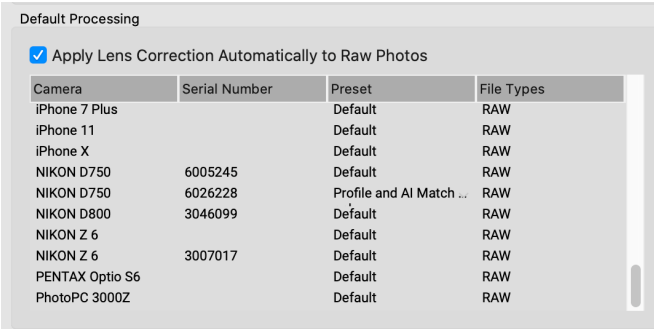
This can come in handy if you have created a custom camera profile or if you have converted a camera to infrared. Camera-based presets are automatically applied to photos in cataloged folders, imported photos, and any time you open a folder in Browse. It's important to note that any photo that has already had any adjustments made in the Edit module will not have the preset applied to it.

So, if you always find yourself making the same basic adjustments to most photos from a specific camera, just make a preset and it will apply to all photos from that camera. You can also choose to have the preset applied to Raw or JPG photos from that camera, or both if you shoot Raw+JPG.

Setting up camera-based presets

To use this feature, first define the preset you wish to use. Because presets are applied globally to all of that camera's images—except for those that have been edited previously—you probably want to keep the adjustments within a narrow range of categories, like a specific camera profile, Develop's Tone and Color and Details settings, and minimal Effects filters, if any at all.

To connect the preset to the camera, open the Files tab of the Preferences screen (page 245). At the bottom of the window is the Default Processing section, which contains a list of all the cameras that Photo RAW knows you have shot with. The list includes the camera name, serial number (if your camera records that in the image metadata), preset and file types. Scroll down to the camera you wish to use and click on the Preset pop-up, which contains a hierarchical list of your presets, and select the one you wish to use. The default file type is Raw; if you wish to apply the preset to JPG files, or both Raw and JPG files, choose the appropriate setting from the File Types menu.

Default Processing

☑ Apply Lens Correction Automatically to Raw Photos

Camera	Serial Number	Preset	File Types
iPhone 7 Plus		Default	RAW
iPhone 11		Default	RAW
iPhone X		Default	RAW
NIKON D750	6005245	Default	RAW
NIKON D750	6026228	Profile and AI Match ...	RAW
NIKON D800	3046099	Default	RAW
NIKON Z 6		Default	RAW
NIKON Z 6	3007017	Default	RAW
PENTAX Optio S6		Default	RAW
PhotoPC 3000Z		Default	RAW

When you close the window, Photo RAW will update your database and apply that preset to all of the photos created by that camera. And from that point on, when you add photos taken with that camera, Photo RAW will apply the preset automatically to all those photos.

Editing photos with camera-based presets

Because Photo RAW is non-destructive, any photo with a camera-based preset applied to it can be edited and changed in the Edit module, or have a new preset applied via Browse. However, you must either apply a new preset, or change the individual settings in the Edit module. You can't choose the Reset All Settings option from the Settings menu, because the default settings for that camera's images are now those applied by the preset.

Copying settings and synchronizing edits

In addition to applying presets, you can copy all of the existing edits—of any operation you can perform in the Edit module—made in one photo and paste them directly onto other images. There are two primary methods for doing this—Copy/Paste and Sync—but they achieve the same end goal: it's more a matter of preference in which operation you choose.

To copy the edit settings from an image, click on the source file and choose Settings > Copy Settings. Then, click on the new image and choose Settings > Paste Settings. A window will appear, giving you the option of applying any or all of the edits on the original photo, or you can select which edits—everything from individual settings in Develop's Tone and Color pane, to masks, cropping, and text if used—you wish to paste into the new photo. (You can also select a group of photos and paste the edit settings onto the group.)

The Copy/Paste Settings commands can be useful when you wish to paste settings across a number of photos in different folders. As long as your Edit session is active, Photo RAW will remember the last copied settings, and you can paste them onto other photos as you wish.

With the Sync Settings command, select the image you want to use as your source. Then, holding down the Shift key (if you are selecting an image or group that is contiguous with the source), or the Command (Mac) or Control (Windows) key, and click on the image(s) that you wish to apply the source file's edits. Your selection should have the source image highlighted in blue, and the target images highlighted in gray. If that is correct, click on the Sync button at the bottom of the Preview area, or choose Sync Settings from the Settings menu. The Apply Settings window will open, and you can follow the same procedure to synchronize your edits.

In the Apply Settings window—accessible from either Paste Settings or Sync Settings—you can apply nearly all Edit module operations to another image or group of images. Filled circles to the left of a setting mean that the setting will be applied; click the circle if you don't wish that setting to be applied.

If you're sure that you want to sync everything from a source photo to another photo or group of photos, the Settings > Sync All Settings command will let you bypass the Apply Settings window. Select your source and destination photos and select the command. Note that all settings—including cropping, text and masks—in the source image will get synced.

RESETTING EDITS

Any edits you have made with ON1 Photo RAW 2022 can be completely reset from within the Edit module. This includes photos you might have pasted or synchronized settings onto inside Browse, or anything done within the Edit module.

The Settings menu offers eight options for erasing edits made to a photo:

- **Reset All Settings**: This removes all adjustments made to a photo in the Edit module. (This option can also be accessed from the Reset All button at the bottom right of the Browse and Edit windows.)
- **Reset Develop Settings**: Removes only the settings applied in the Develop tab.
- **Reset Effects Settings**: Removes only the settings applied in the Effects tab.
- **Reset Portrait Settings**: Removes only the settings applied in the Portrait tab.
- **Reset All Retouching Tools**: Resets any retouching applied anywhere in the Edit module.
- **Reset Local Adjustments:** Removes all local adjustment layers.
- **Reset Crop:** Returns the image to its original, uncropped size.
- **Reset Text:** Removes any text blocks.

You can undo any of these changes immediately after making them; otherwise resetting with the appropriate option will permanently reset the image.

> **NOTE:** When working in the Edit module, the Reset, Copy/Paste and Sync settings work only on the currently selected layer.

Soft Proofing

ON1 Photo RAW's soft proofing feature lets you see how a photo will look when printed, using the color profiles that get installed with your printer. Soft proofing helps you determine where there might be issues when you print, so that you can adjust your tone, color and effects to give you a print that is closer to your editing vision.

Normally, when you're viewing an image in Photo RAW, you are viewing it through the lens of your monitor's display profile. The color gamut of your computer's display is wider than that of most photo printers, which means that some colors you are able to view on-screen are not reproducible when you print. When this happens, the color profile conversion that happens in the print engine will cause substitutions of colors that the printer cannot print to the closest color that it can. This means that your image could have subtle (or broad) shifts in color, especially in certain color ranges.

Soft proofing is turned on via the View menu, or by clicking on the soft proofing icon to the left of the Preview button at the bottom of the main Photo RAW window. You soft-proof various paper types by choosing an installed printer profile from the Profiles submenu. The image will change to approximate the color of the paper you're profiling. You can also turn on an overlay that will display out-of-gamut colors.

The primary soft-proofing options are available underneath the Enable Soft Proofing item in the View menu. The options are as follows:

- **Gamut warning:** When checked, this displays colors in the image (via a red overlay) that don't correspond to the current printer profile being soft proofed.

- **Profiles:** The Profiles submenu lists the currently available printer profiles. Choosing one will change the on-screen display to use that profile. You can also import profiles via this submenu.

- **Intent:** Photo RAW offers two different rendering "intents" when soft proofing, which are
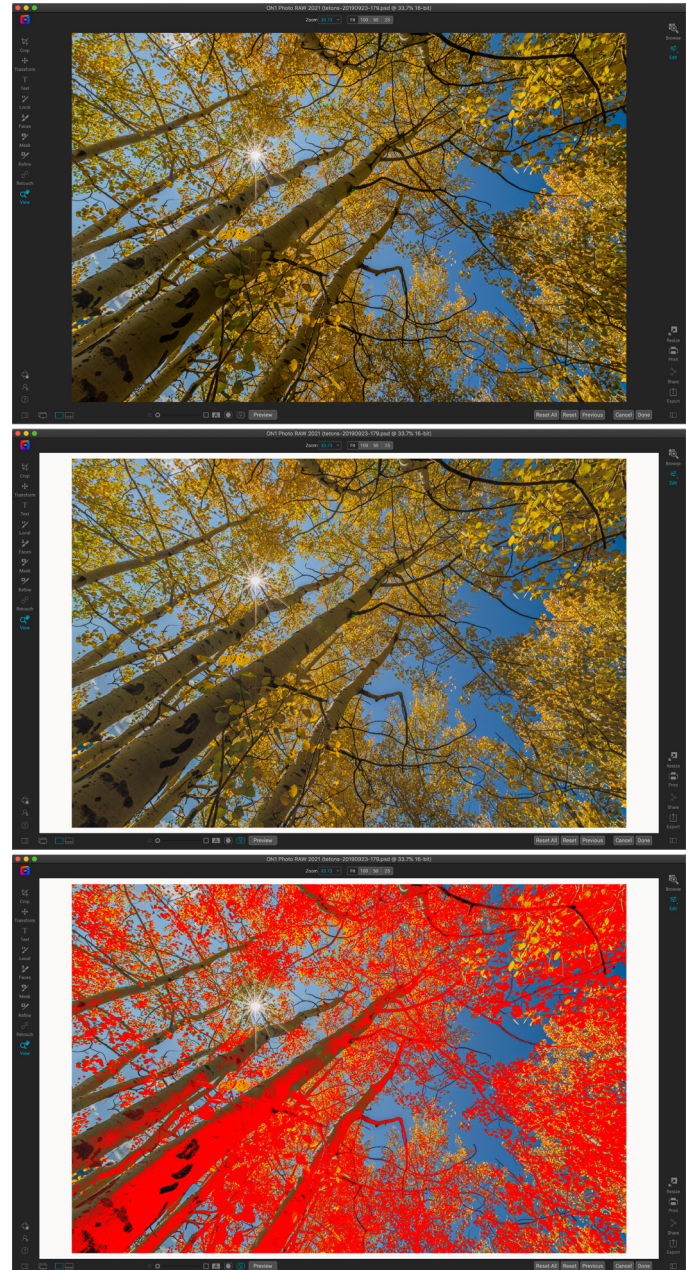
These three screen shots show the results of soft proofing options, as viewed in the Edit module. The top image is with soft proofing off (and is using the display color profile). The middle image is with soft proofing turned on, and using a printer profile for Epson's Exhibition Matte Paper. The bottom image has the Gamut warning turned on; out of gamut colors are highlighted by the bright red overlay.

used to convert the color from display to print. Perceptual shrinks the color gamut during the conversion, which works to preserve the relationship between colors in the image. The other intent type, Relative, only converts colors that are outside the current color gamut, but this can sometimes cause two colors, one in gamut, and one outside, to be identical after conversion.

Neither rendering intent is perfect or desired; it often is a matter of the makeup of the image, your editing intent, the paper being printed on, and so forth. Often, you'll want to switch back and forth between Relative and Perceptual, seeing which gives you a better print.

- **Simulate Paper and Ink:** Turning this setting on will cause Photo RAW to use the white point for the chosen paper type (instead of the white point of your monitor), and the paper's actual black density (instead of the display's black point). If you're trying to match a print, you will usually want this setting turned on.

Adjusting images with soft proofing is often a bit of trial and error. It's easy to get caught up in eliminating out-of-gamut colors, but most modern photo printers—both home printers and online print services—do a pretty good job of properly approximating colors.

The biggest thing you want to be looking for when viewing a soft proof is tone, contrast and color accuracy between screen and print. When using a home printer, use test prints to hone in on the right mix of Edit module adjustments. Photo RAW's Versions feature can be extremely helpful when you're tweaking settings to get a print just right (see page 61 for more on working with Versions).

The Profiles submenu displays the installed printer profiles for any installed photo printer. You can also import your own color profiles.
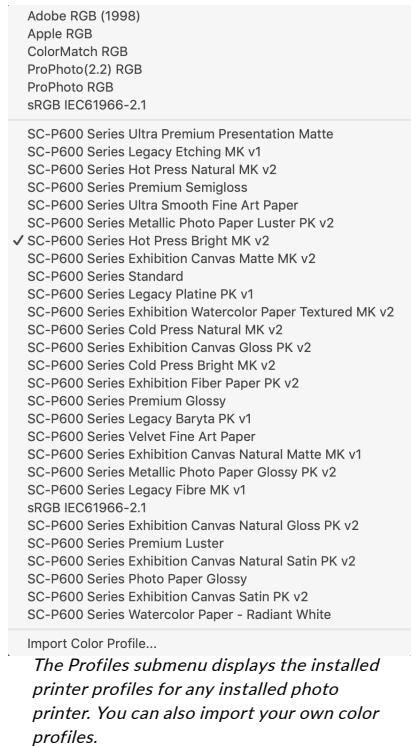
Other Edit Module Preview Options

In addition to soft proofing, ON1 Photo RAW 2022 offers a few other previewing options in the Edit module, which can be found in the previewing section at the bottom of the Photo RAW window. With these options, you can compare the before and after views of a photo—in either split-screen or full-screen views—see the current mask, and turn soft proofing on or off.

The Preview area at the bottom of the main Photo RAW window includes options for adjusting the preview magnification, turning compare (before/after) view on or off, viewing the current mask, turning soft proofing on or off, and for viewing the original photo, with all edits removed.
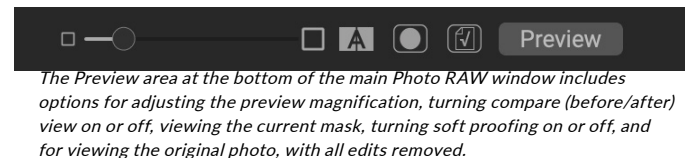
CHANGING THE MAGNIFICATION VIEW

Photo RAW includes various options for zooming in or out of a photo while you're working on it. In addition to the Zoom tool and the Navigation pane (see page 101 and page 74, respectively), you can change the zoom view by moving the magnification slider. You can either click on the control and slide it to the right to zoom in and to the left to zoom out, or you can click on the boxes at the ends of the slider.

BEFORE/AFTER PREVIEWS

As you work in the Edit module, it can be helpful to see how individual edits—via items in the different edit tabs—affect your photo, as well as to see the cumulative changes made to the original image. The Edit module's Compare mode displays a side-by-side view of your photo, with the original version on the left, the edited version on the right. There is a movable slider in the middle of the screen, which lets you view more or less of each view; click on the box at the center of the slider and drag it to the left (to view more of the edited image) or to the right (to view more of the original. While working in Compare view, you can use the magnification slider to zoom in or out of the image, which can be useful when you wish to see the effects of your edits on smaller sections of your photo.
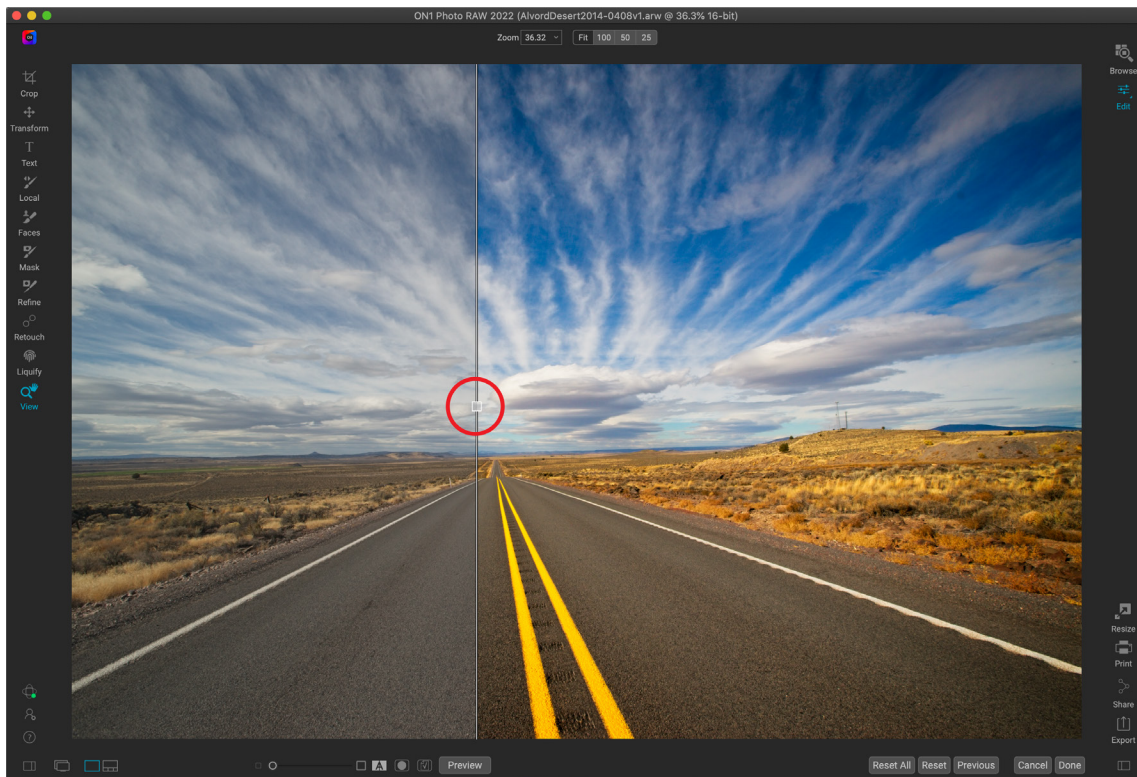
Edit's Compare view displays a before/after view of your current photo, with a movable slider (circled, above) for expanding and contracting the different views.

You can also view your original image full-screen by clicking the Preview button at the far right of the previewing toolbar. When you click this button, the original photo is displayed with a "Preview Off" overlay. To return to your edited version, click the Preview button again. (You can also use the backslash key—'\'—to show and hide the full-screen preview.)

SHOW/HIDE MASK

ON1 Photo RAW 2022 has extensive masking capabilities throughout the Edit module. While you're in the process of creating a mask, you have two options for displaying the contents of a current mask:

- As a transparent red overlay, where the masked sections of your photo are shown in red.
- As a grayscale mask, where you do not see the photo, but see only the mask. Masked areas are shown in shades of gray, with pure black meaning that those pixels are completely masked. Gray values (from 1% to 99%) represent the opacity of the those pixels relative to the mask, and areas of pure white are not masked.

The overlays can be set in the Mask menu's View Mode submenu while you are working in the Edit module. You can also, via this option, show the mask as a red overlay only when you are brushing a mask.

You can toggle the current mask view by clicking on the Show Mask icon in the previewing toolbar, or by pressing the O key.

The two options for viewing a mask are with a red overlay (left), which shows the masked areas in red, and a grayscale mask (right), which shows only the mask, in a range of tones from white (not masked) to black (completely masked). Tones in gray represent varying percentages of the mask's opacity.

For more information on the varying aspects of masking in ON1 Photo RAW 2022, see the details on the respective masking tools, starting on page 71, and "Masking Basics" on page 102.

FOCUS AND CLIPPING VIEWS

Two additional previewing tools that can be quite powerful aids when you are editing photos are the Clipping and Focus Mask overlays. These options can be displayed in any of the Edit module tabs (as well as in the Browse module).

Clipping

Clipping occurs when the shadow and highlight tones in an image are suddenly cut off to completely white or black, rather than fading smoothly. (Large expanses of white pixels in a photo are often referred as 'blown' highlights, and can be quite distracting to a viewer.) One of the benefits of shooting in raw format is that, while many photos will have areas of pure white or black when originally viewed on-screen, there is still recoverable data in the raw image. The Clipping overlay can help determine how big a problem you might have with a photo, and how easy (or difficult) it will be to fix.

Clipping view displays pure white pixels with a bright red overlay, and pure black pixels with a bright blue overlay.

To display the Clipping overlay temporarily, press the J key; to turn it on permanently as you move from photo to photo, choose View > Show Clipping, or press Alt (Windows) or Option (Mac) J on your keyboard.

The Clipping view overlay displays the areas that have either pure white or pure black in them. Those areas with a bright blue overlay indicate pure black pixels, while the areas with the bright red overlay indicate pure white pixels.

Focus Mask

It can often be difficult to view the sharpness in a photo without zooming in to 100% or more, and if you have a lot of photos from a shoot, it can be a bit tedious to check focus at that level. Luckily, Photo RAW's Focus Mask overlay can help winnow your shots down to the sharpest ones.

To turn on Focus Mask, choose View > Show Focus Mask, or press Shift-Alt-J (Windows) or Shift-Option-J (Mac). The sharpest areas in your image will be represented by a bright green overlay. As you move from photo to photo in a folder, you'll be able to tell whether you have an acceptable level of sharpness where you need it by the strength of the overlay. The mask will be displayed even as you zoom in on a photo.

Showing or Hiding Edit Module Adjustments

You can also show or hide many individual adjustments made throughout the Edit module. Most of the panels in the Develop, Effects, Portrait and Local tabs have a Show/Hide control in the upper left-hand corner of the panel. You can make your adjustments, and can click the control to turn the effect on or off.

To turn an effect or other adjustment off, click on the Show/Hide control in the upper left of an adjustment's panel. If the control's circle is empty, that effect is not implemented. Clicking the control will turn it back on.

That this option is not solely for previewing an effect; if the adjustment is turned off, it will not be present in the edited image. This can be helpful if you're trying different filters in Effects, for example, and you want to see if one looks better than another, or if you wish to see if it truly helps the photo or not. To turn the adjustment back on, click on the Show/Hide control so that the circle is filled.

The only adjustment inside the Edit module that cannot be turned off in this way is the Tone & Color panel in the Develop module. If you wish to view your photo without those adjustments, you need to press the Reset icon, which is represented by '↺' at the top right side of the panel.

For a complete description of the controls in most Edit module panels, see "Filter Overview" on page 132.

Saving Your Work

Photo RAW saves your non-destructive settings for the photo you are editing when you return to Browse. If you would like to periodically save your settings without returning to Browse, you can use the Save Settings command. This saves your work in the off chance the application encounters an error. To save the current state of your actions, choose Save Settings from the Settings menu, or press Command-S (MacOS) or Control-S.

BASIC GLOBAL EDITING WITH DEVELOP

Develop is the module for performing basic global editing operations—adjusting tone and color, removing noise, sharpening and applying transforms to a photo. It is the perfect place to begin editing your photos.

Develop Adjustment Panes

To edit your images, the Develop tab has four adjustment panes found in the Overall Settings panel. Unlike the Effects tab, which lets you stack filters in any order, the Develop tab's adjustments are applied in the following order:

1. Tone & Color
2. Noise & Sharpening (which includes ON1's NoNoise AI noise reduction technology)
3. Lens Correction
4. Transform

WORKING WITH PANES

The Tone & Color pane is at the top of the stack, followed by the Noise & Sharpening, Lens Correction and Transform panes. These panes are not removable from the stack, although you do not have to apply any of these operations to a photo. The remaining panes can be applied based upon what you wish to do with your photo. Clicking on the button to the left of the pane's name will turn that pane on or off, which can be helpful if you want to see the effect in the context of other edits you have made. The Reset button—designated by the circular arrow icon at the top right of each pane—will reset that pane's settings to their default state.

TONE & COLOR

This pane adjusts the tonal and color characteristics of an image, letting you correct and enhance exposure, contrast, detail and color. It is split into two sections, Tone and Color, with a Color Profile option at the top of the pane.

Camera Profile

Camera profiles apply alternative interpretations of the raw data in an image based upon different genre types or intents. The pop-up menu displays Photo RAW's built-in profiles: ON1 Standard, Landscape, Portrait, Vivid and Neutral. If your camera has its own embedded profiles, you will see those profiles in the list as well, and you can also import your own custom camera profiles using Photo RAW, and X-Rite's ColorChecker and ColorChecker Camera Calibration software. (See page 129 for more information on how to create and import custom camera profiles into Photo RAW.)

Photo RAW's camera profiles are non-destructive, and work independently of any changes you make to tone or color.

Tone

The Tone sliders control the global tonality, or brightness and contrast of the image. You can adjust each of the following:

- **Manual, AI Match and AI Auto buttons**: The AI Match button uses artificial intelligence technology to automatically adjust the controls in the Tone panel to closely match your photo as you saw it on the back of your camera's display. The AI Auto button performs an automatic tone adjustment on your photo using a proprietary ON1 algorithm. If you don't use either of these options, or if you make subsequent adjustments, the Manual button will be highlighted.

- **Auto Tone slider:** This option is only available when using the AI Match or the AI Auto option. Using this slider will let you 'fade' the effect of those options.

- **Exposure**: Adjusting this slider to the right will lighten your image. Adjusting to the left will darken your image.
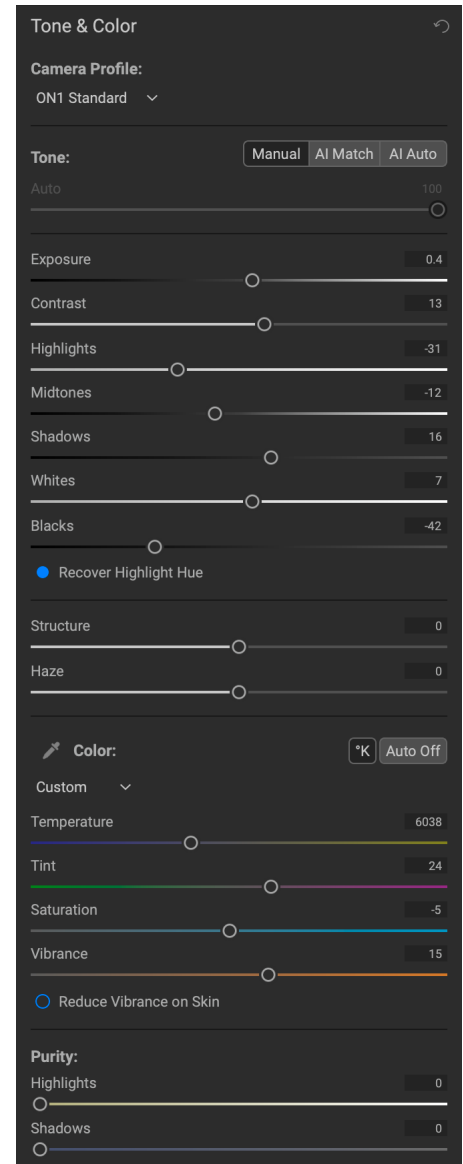
- **Contrast**: Increase or decrease the contrast in your image.
- **Highlights**: Darkens the highlights, recovering detail.
- **Shadows**: Lightens the shadows, revealing details.
- **Whites**: Adjusts the white point, adding or removing contrast in the highlights.
- **Blacks**: Adjusts the black point, adding or removing contrast in the shadows.
- **Recover Highlight Hue:** When checked, Photo RAW will attempt to recover highlights while maintaining subtle hues in areas like the sky.
- **Structure**: Adjusts the detail in your image by changing the local contrast.
- **Haze**: When moved to the left, this will remove haze or fog from your photos; moving it right will enhance fog or haze.

> **NOTE:** The AI Match and AI Auto buttons only affect the tone and saturation of your image; they don't adjust the white balance.

Color

The Color sliders control the Temperature, Tint and Vibrance. They are used to remove a color cast and enhance the color of the image. By default, when working with raw (or DNG) files, the color temperature is measured in degrees Kelvin (°K), which gives you a larger and more accurate range to make adjustments.

The settings in this section of the Tone & Color pane include:

- **Auto Button**: The auto button attempts to detect and remove a color cast. It makes adjustments to the Temperature and Tint sliders.
- **Gray Dropper**: Used to remove a color cast of an image. Click the icon to activate, then click on an area in the image that should be gray.
- **White Balance presets**: This pop-up lets you change the white balance according to common color temperatures (As Shot, Auto, Daylight, Cloudy, Shade, Tungsten, Florescent, Flash, Custom). The default is As Shot, which is the color temperature that the camera recorded when you took the photo.
- **Temperature**: This slider shifts the color either cooler (blue) or warmer (yellow). When editing a raw file, the °K button will be blue, which means that the temperature is measured in degrees Kelvin. Clicking the button will change the slider to a relative color ramp. (The Kelvin ramp is only available when working with raw photos; other formats use the relative slider.)
- **Tint**: Shifts the color either green or magenta.
- **Saturation**: Increases or decreases the saturation of your image.
- **Vibrance**: Increases/decreases the color of muted tones, leaving more saturated colors alone.
- **Reduce Vibrance on Skin**: When turned on, adjustments made with Vibrance slider are reduced on skin colored areas. This allows you to increase the vibrance of clothing and the background without adversely affecting the skin color.
- **Purity – Highlights**: Reduces the saturation in the highlights.
- **Purity – Shadows**: Reduces the saturation in the shadows.

Adjusting Tone & Color settings via hotkeys

When you're working in any tab inside the Edit module, you have the capability to adjust the basic tone and color settings for your current image directly from the keyboard, based on the hotkeys found in the Keyboard Shortcuts window. These include the following sliders: Exposure, Contrast, Highlights, Midtones, Shadows, Whites, Blacks, Temperature, Tint, Saturation and Vibrance.

You can view (and change) the hotkeys for the primary Tone & Color adjustments from the Keyboard Shortcuts window, which is found in the Edit menu.

To use this feature, first invoke the setting you with to change with the appropriate keyboard shortcut. An on-screen overlay label will appear, indicating that you are changing that setting. Use the Up/Down arrow keys to increment or decrement the chosen slider. When you're done, press the Escape key, or click in the window.

This feature can be helpful when, for example, you apply a set of filters in Effects and feel that they caused the shadows to darken in your image. Using the keyboard shortcut for the Shadows adjustment, you can make changes dynamically without having to go back to the Develop tab.

Photo RAW has a set of pre-assigned keys for these adjustments in the Develop section of the Keyboard Shortcuts window, but you can change them easily. See for more.

NOISE & SHARPENING

The Noise & Sharpening pane incorporates the two adjustments that often compete with each other when working on a photo. ON1 Photo RAW 2022 offers two forms of noise reduction in the Noise & Sharpening pane, split into two tabs:

- **Classic**, which offer the traditional noise reduction settings that have been in Photo RAW for years.
- **NoNoise AI**, which uses AI-based machine learning to remove luminance and color noise from photos, while still maintaining fine details. is designed to be applied on those images shot at higher ISOs, for which Photo RAW's traditional noise reduction settings don't work as well.
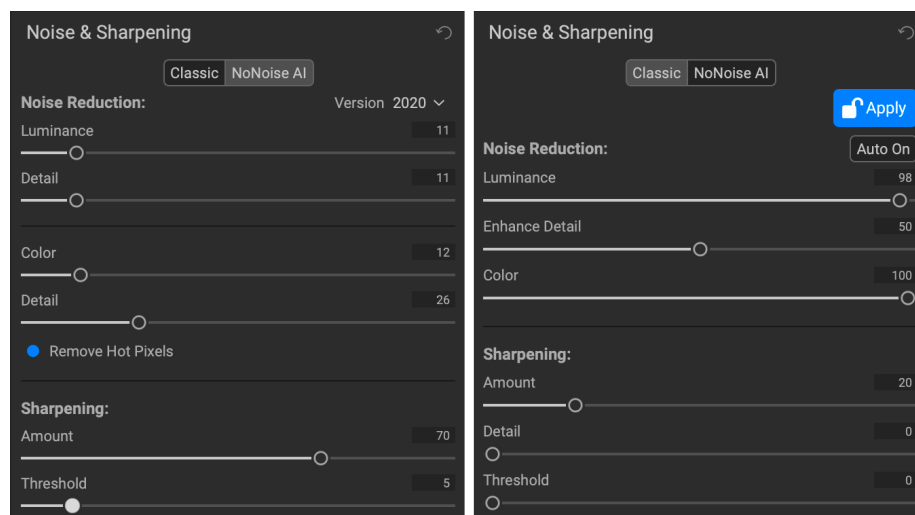
Develop's Noise & Sharpening pane offers traditional noise reduction and sharpening options in the Classic tab (above left); the NoNoise AI (above right) tab incorporates ON1's new AI-based noise reduction and sharpening technology for eliminating noise and optimizing sharpness from high ISO and other images that present editing challenges due to noise.

These two options work in different ways: the Classic sliders are applied in real time on your image, while NoNoise AI is applied at the base image level, demosaicing each image from its raw data and applying its noise reduction and sharpening to the base image. When it does this, NoNoise then determines the correct amount of noise reduction for your photo. Because it is applied at the raw level, you must process the image and then apply it, which 'locks' the settings to the base image, although you can adjust the settings at any point in time. It also takes a bit longer to process a photo in NoNoise than the Classic method.

For most images, you'll want to use the Classic option first, unless you know that the images were shot at high enough ISOs that noise will be a problem in your final edit.

Using the Classic tab

For most images, you'll want to use the Classic tab in the Noise & Sharpening pane; which is the default tab in the pane when you open it.

> **NOTE:** When you are adjusting the sharpening or the noise in a photo, it is best to be working at 100% view. To do this, you can click on the 100 button in the Navigator pane, choose View Actual Pixels from the View menu, or press Command-Option-0 (Mac) or Control-Alt-0 (Windows) on your keyboard.

Noise Reduction

The Noise Reduction section reduces luminance and color noise, while maintaining image detail. By default, Photo RAW applies a small amount of noise reduction on your photo, based on the camera type used. You can then further refine both luminance and color noise, as defined below:

- **Luminance**: Adjusts the overall strength of the noise reduction applied to the luminance or detail of the image. Hold down the Alt/Option key to see just the luminance while adjusting this slider.

- **Color:** Controls the amount of noise reduction applied just to the color noise or chroma, of the image.

- **Detail**: Controls how much edge detail is protected for each type of noise reduction (Luminance and Color). Hold down the Alt/Option key to see the edge mask while adjusting this slider.

- **Remove Hot Pixels:** If you have any individual, blown-out pixels in your image, turning this setting on will remove them, changing that pixel's color to one that blends in with the surrounding pixels. This setting can also be helpful in reducing noise in long exposures.

- **Version:** The Version pop-up in the Classic tab is set by default to 2020, which was when ON1 last revised its Classic noise reduction algorithms. In order to provide editing compatibility, photos that have been edited in previous versions default to the 2017 noise reduction model, while new photos that are edited in ON1 Photo RAW 2022 will default to the new model. You can change any image to the other model via the Version pop-up.
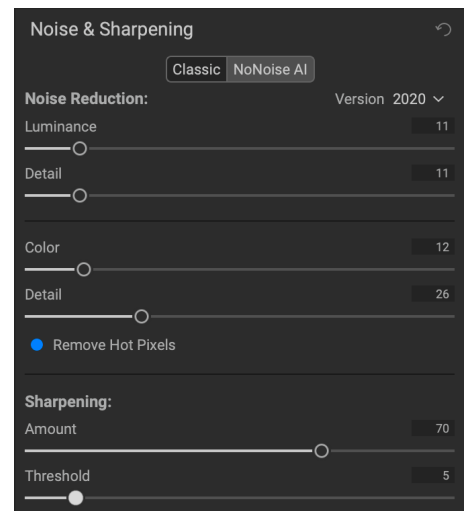
Sharpening

The sharpening section of the Details pane is designed to visually sharpen an image based on its initial state from your camera—for example, to bring back some sharpness that might have been lost. It has two basic controls: Amount and Threshold. Amount controls the strength of the sharpening applied, while Threshold reduces sharpening in areas of low detail via a threshold mask.

Hold down the Option (Mac) or Alt (Windows) key as you adjust the Amount slider to display your photo in grayscale, which can make it easier to view the degree of sharpening you're applying.

With the Threshold slider, a setting of 0 means that the sharpening amount gets applied to every pixel. As you increase the amount, it focuses the sharpening only where there is a difference between neighboring pixels. To help you determine which edges are sharpened, you can use the same Option/Alt key trick mentioned above. In this view, as you adjust the Threshold slider, everything that is white will get sharpening applied to it; everything displayed as black will not have sharpening applied.

The Classic tab is intended to adjust the base-level sharpening and noise reduction of a photo. If you wish to apply further sharpening for printing or other output uses, you can add more targeted sharpening and noise reduction in the Effects tab, or the Resize module, if you wish to sharpen for output.

Using NoNoise AI

To get started, click on the NoNoise AI tab in the Noise & Sharpening pane. When you click on the NoNoise AI tab, Photo RAW analyzes your image and applies ON1's AI-driven noise-reduction technology, based on the contents of the image. NoNoise initially presents your image at 100% view, with a split screen displaying your original file on the left side, and the denoised version on the right (shown below).
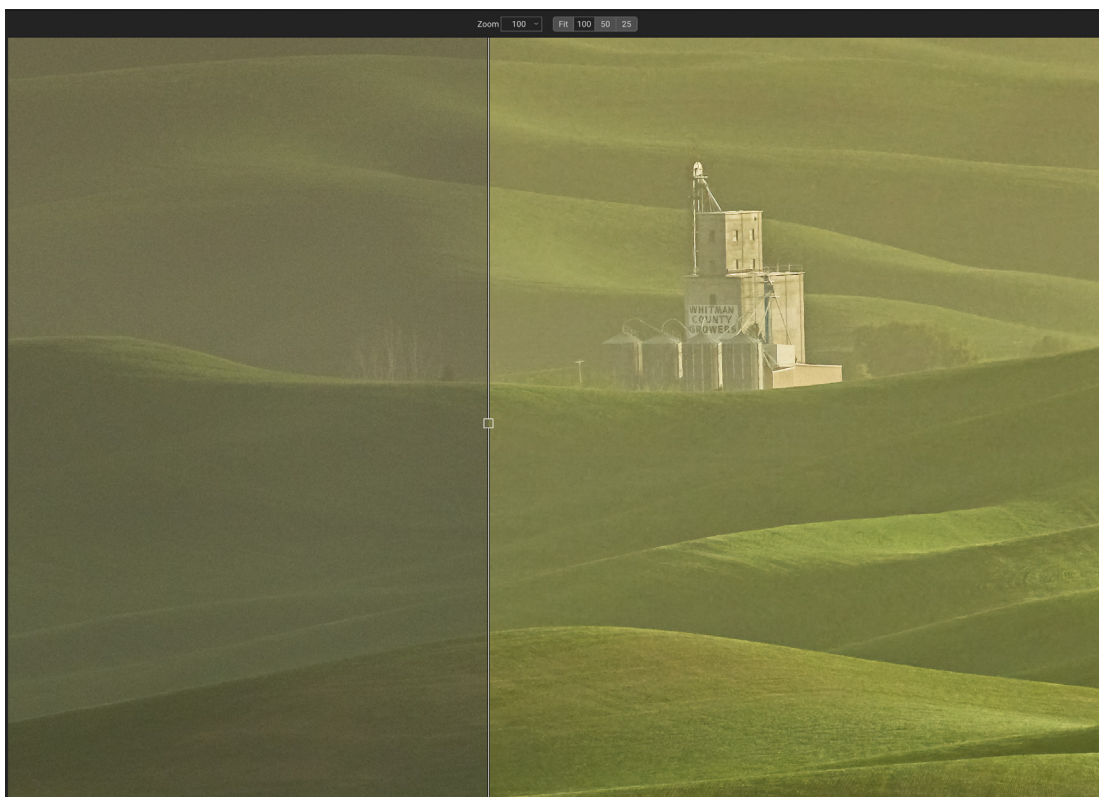
When you open a raw image for processing inside NoNoise AI, the app will apply initial noise reduction based on the contents of the image and your noise-reduction preferences (High, Medium or Low). The image will be displayed at 100%, with a preview slider that can be dragged left or right; the original image is on the left side of the slider, while the right side displays the denoised image with the current settings in the NoNoise AI tab.

The advanced AI neural networks behind NoNoise AI work at the deep raw level. They are trained to detect and reduce the noise before the raw data is even converted to a photo, preventing noise from propagating further up in the image processing pipeline. As a result, NoNoise can clearly differentiate between what is noise and what are small details, helping to maintain sharper details and reduce false color.

NoNoise AI automatically applies noise reduction based on the contents of your image and your preferred level of reduction, but you can adjust the amount of noise reduction and detail preservation—as well as add sharpening—to your taste, by adjusting the sliders in the Noise & Sharpening pane. The controls consist of two primary sections in the main section of the pane, and an action area on the top right side of the pane:

A. **Noise Reduction:** This section adjusts the amount of Luminance (brightness) and Color noise reduction on the current image. Enhance Detail works to preserve details that would have been lost in traditional noise-reduction processes. Color is always set to 100, but the amount of Luminance reduction is set based on the image contents and your Auto settings level (see below).

B. **Sharpening:** This adjusts the amount of progressive sharpening applied to the processed image. Amount controls overall strength of the sharpening. Detail manages sharpening of small details (higher numbers apply more sharpening). Threshold controls the sharpening effect based on contrast in your photo; larger settings means that smoother areas do not get sharpened.

The Noise & Sharpening pane, with NoNoise AI active.

C. **Reset:** The top button resets the Details pane to its default state. Click this if you would like to reset any changes you've made here.

D. **Apply/Adjust:** This button has two states: Apply (blue) and Adjust (red). Apply is the default state when you open the image: NoNoise has applied noise reduction, and you can fine tune the settings as you'd like. When you're done, clicking the Apply will 'lock' your settings in, changing the state to Adjust. To re-edit your settings, click Adjust, and the button will revert to Apply, with the current settings available.

E. **Auto On/Off:** When you have applied NoNoise to an image with the default reductions settings, this button will read Auto On. If you adjust the Luminance slider, the button will change to Auto Off, meaning that the slider has been adjusted from the auto value. Clicking the button in this state will return the Luminance setting to its original value.

NoNoise's Default Noise-Reduction Settings

We know that noise reduction is as much about personal taste as it is about technology. Some people prefer a light touch, while others like a much more processed result. You can configure NoNoise AI to use one of three automatic noise-reduction settings—Low, Medium or High—when it first processes an image. This setting only affects the Luminance slider; the Color slider's default is always set to 100, the Enhance Detail's default setting is 50, and the Sharpening Amount is 20.

The default Auto setting is High, but you can change it to Medium or Low in Photo RAW's Preferences window; click the General tab, and choose the desired setting in the NoNoise AI Default pop-up.

Our recommendation would be to play around with a group of representative images from your library, looking at the types of noise reduction that work best for you, and then change your setting to the range that you like best.

Fine Tuning the Image

Work the Noise Reduction section of the Noise & Sharpening pane first, if you need to. When thinking about adjusting the noise reduction amounts, detail enhancement and sharpening, use the Preview window at a zoom level that lets you see the important details, and use the Hand tool to move you around the image. Then, work with the Luminance and Enhance Details sliders to zero in on the best look.
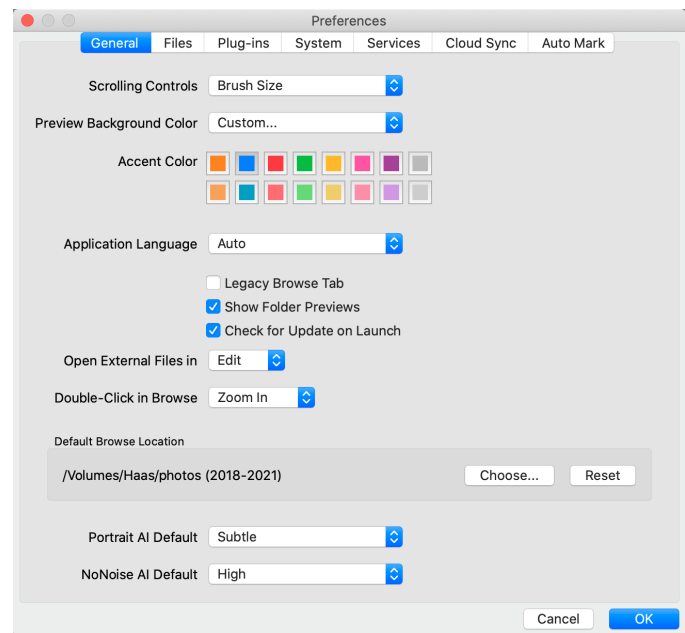
Photo RAW's General Preferences pane has an option to configure NoNoise AI's automatic noise-reduction settings—to Low, Medium or High—based on your taste. The default is High.

A good methodology, especially as you are getting to know the app and its settings, is to set the Luminance, Detail Enhancement, and Sharpening all to zero. Then start by adjusting the Luminance slider up, examining an area that has both detail and smooth areas. Adjust the Luminance until you see the desired amount of noise reduction in the smooth areas. Depending on your tastes, this will usually be in the 80 to 100 range.

Next, increase the Detail Enhancement slider until you have the desired amount of enhancement. Values between 20 and 50 are common. High amounts on this slider may bring back some noise in the smooth regions, so you may need to balance how much you use by comparing high-detail and low-detail areas.

Last, adjust the Sharpening Amount in the same fashion as the Enhance Detail slider. Values between 20 and 50 generally give the best results.

If you want to apply sharpening to the image, make sure you're working at 100% or higher, so you can see the results of the three sharpening controls. Watch out for halos generated from oversharpening, and use the Threshold slider to keep large, smooth areas from getting sharpened; the higher the Threshold amount, the more your sharpening is focused on edge detail. Typically, a Threshold setting of 2-4 will give the best results

When you're done with NoNoise AI, click the Apply button to lock the settings.

> **NOTE:** Because NoNoise AI works best at the raw image level, we recommend that you process your images in NoNoise before you apply basic editing (exposure, color balance, etc.) or finish editing. Ideally, you want to work with the raw data as much as possible. Processing non-raw files, even high-resolution, 16-bit formats like PSD files or TIFFs, won't benefit as much from the noise-reduction capabilities in NoNoise as raw files will.

LENS CORRECTION

The Lens Correction pane detects the lens used in a photo (from its metadata), and searches Photo RAW's internal lens database for an appropriate profile. If found, the profile will be applied automatically, reducing distortion, chromatic aberration and peripheral fall-off.

Photo RAW also detects embedded lens profiles in modern lenses from Panasonic, Fujifilm, Canon, Nikon and Sony; providing high-quality corrections automatically.

Lens profiles can only be applied to raw photos that are opened via Browse. If you use Photo RAW as a plug-in, lens profiles will not have any effect on your photo, although adjustments made in the Manual section of the pane will get applied to your final photo.

If Photo RAW doesn't have a built-in profile for your lens—or you wish to apply further correction to a photo—you can make manual adjustments by clicking on the Manual triangle. There, you can adjust lens distortion—either pincushion (where lines in a photo curve inward) or barrel (lines curve outward)—by moving the slider to the right or the left. The Manual section also can help remove any purple or green color fringing that might occur along edges, and can reduce the light fall-off (vignetting) that can occur at the outer edges of a lens.
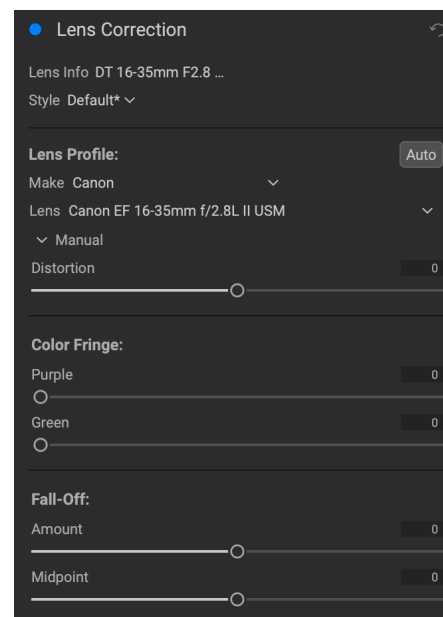
> **TIP:** If you have a lens that doesn't have a profile, open a photo shot with it and adjust the Lens Correction pane's Manual settings to fix any lens abnormalities. Click on the Style pop-up and choosing Save New Style. When you open additional photos shot with that lens, choose that Style from the Style pop-up.

A list of the currently supported lens profiles can be found on the ON1 support website, via this link.

TRANSFORM

Transform applies distortion and perspective correction to your image, and offers rotation and scaling options as well. You can use these settings to make small adjustments to perspective or distortion.

The three icons at the top of the pane let you apply specific transforms to the current photo:

- **Keystone** lets you project your image as if it were on an angled surface. This type of effect is often used to help adjust the perspective in architectural photos. Selecting the Keystone option will give you a box with four handles at the corners. You can extend the handles in any direction. Once you're done, click on the Apply button at the center of the keystone box.
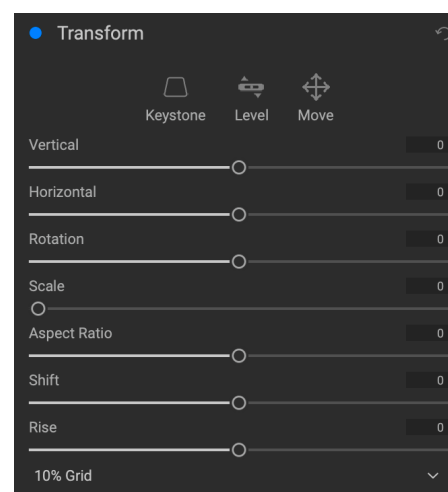
- **Level** works in a similar fashion to the one found in the Crop tool (found on page 71). Select the tool and click and drag across an element in your image that should be level.

- **Move** lets you adjust the image's position on the canvas. Click and drag to reposition.

The Transform pane's Keystone option can help with perspective issues in a photo. Clicking the Keystone icon gives you a box that you can use to align the four corners of an object that should have parallel lines (above left). Once you have the edges of the object aligned, click the Apply button in the center to create the transform, and apply a crop as necessary. (Sometimes, you'll find that using the manual section of the Lens Correction pane can help reduce some of the distortion that the Keystone operation can create.)

Keystoning can be helpful when you want to adjust the perspective in a photo; just adjust the four corners to align with an object that should have parallel lines, like a window or door, then click the Apply button. The Transform pane doesn't apply a crop when you apply a transformation; use the Crop tool to do that.

In addition to the above tools, the following options will apply specific transform operations:

- **Vertical**: Adjusts the vertical perspective.

- **Horizontal**: Adjusts the horizontal perspective.

- **Rotation**: Rotates the canvas up to 45° clockwise or counterclockwise.

- **Scale**: Scales your image up from the center, to 100%.

- **Aspect Ratio:** Stretches your image horizontally (slider moves to the left) or vertically (right).

- **Shift:** Translates the image left or right.

- **Rise:** Translates the image up or down.

The Grid pop-up menu at the bottom of the Transform pane lets you displays a grid overlay while you are

adjusting the pane's sliders. The default for the pane is No Grid, but you can also choose between 10% (large), 5% (medium) or 1% (fine) grid settings.

The Transform tool works best most of the time in small amounts. It's not necessarily going to fix a photo with an extreme perspective, but it can often help with slight adjustments, especially if you fine-tune them with some of the Transform panel's other controls or the Manual section of the Lens Correction panel. In addition, the tool does not apply a crop after an operation; if you are happy with the transform results, use the Crop tool to finish your work.

CREATING AND ADDING CUSTOM CAMERA PROFILES

As noted in the section on the Tone & Color panel (page 120), you can create your own custom camera profiles and import them into Photo RAW. Custom camera profiles can help improve the fidelity of color reproduction in your photos, and for some photographers, this can be a useful tool.

To build a new profile, you'll require a color profiling target and special software that creates the profile. ON1 worked with X-Rite Inc. during the development process to create a workflow that helps ease this process and ensure consistent results when building camera profiles. In addition to ON1 Photo RAW 2022, you'll need a reference target, such as one of the ColorChecker series, and X-Rite's ColorChecker Camera Calibration app.

> **NOTE:** You can find the different ColorChecker options on the X-Rite website at xritephoto.com/camerasolutions.

The process for creating a custom profile is as follows:

- Turn off automatic white balance on your camera; set it to the lighting conditions—daylight, tungsten, flash, fluorescent—in which you are shooting the target.

- Place the color reference target in the center of your scene, with even light. Take the photo.

- Open the photo in Photo RAW's Develop tab.

- In the Camera Profile section of the Tone & Color panel, choose the Linear Raw profile from the pop-up.

- Click on the dropper icon in the Color section of the Tone & Color panel (see page 121), and click on one of the light gray patches in the target. This will neutralize the image.

- Using the Export feature, export your photo as a TIFF, selecting the Camera Calibration color space from the pop-up under the file type option. (See page 208 if you need help with exporting photos from Photo RAW.)

- Using X-Rite's ColorChecker Camera Calibration software, open the exported TIFF file. The app should find and align the target; if so, click the Create Profile
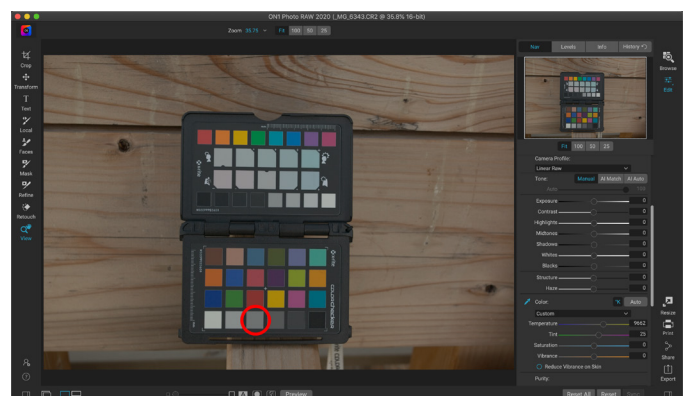
When you open the photo with the color target, set the camera profile to Linear Raw, and use the gray dropper to neutralize the photo, by clicking on one of the light gray targets (circled, above).

button, and save the exported profile. If it doesn't find the target, follow the guidelines in the software to help improve your chances with a new photo.

- In Photo RAW, go to the Develop module with a photo created with the camera you profiled. In the Tone & Color panel, click on the Import Profile item in the Camera Profile pop-up menu. Find the exported profile and choose Open. Your profile is now installed.
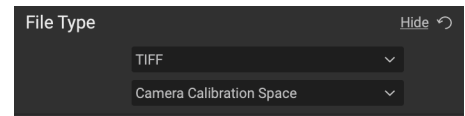
When exporting your neutralized target, set the file type to TIFF, and the color space to Camera Calibration Space.
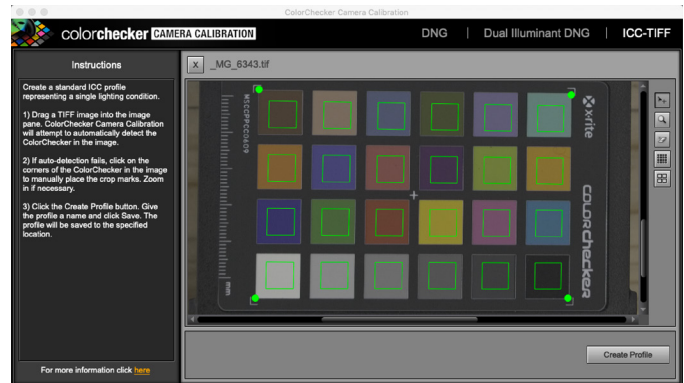
Using X-Rite's ColorChecker Camera Calibration app, you can open the exported TIFF file, and create your own custom camera profile. Then, import the profile via the Camera Profile pop-up in Develop to use it with any photos taken with that camera.

STYLIZING WITH ON1 EFFECTS
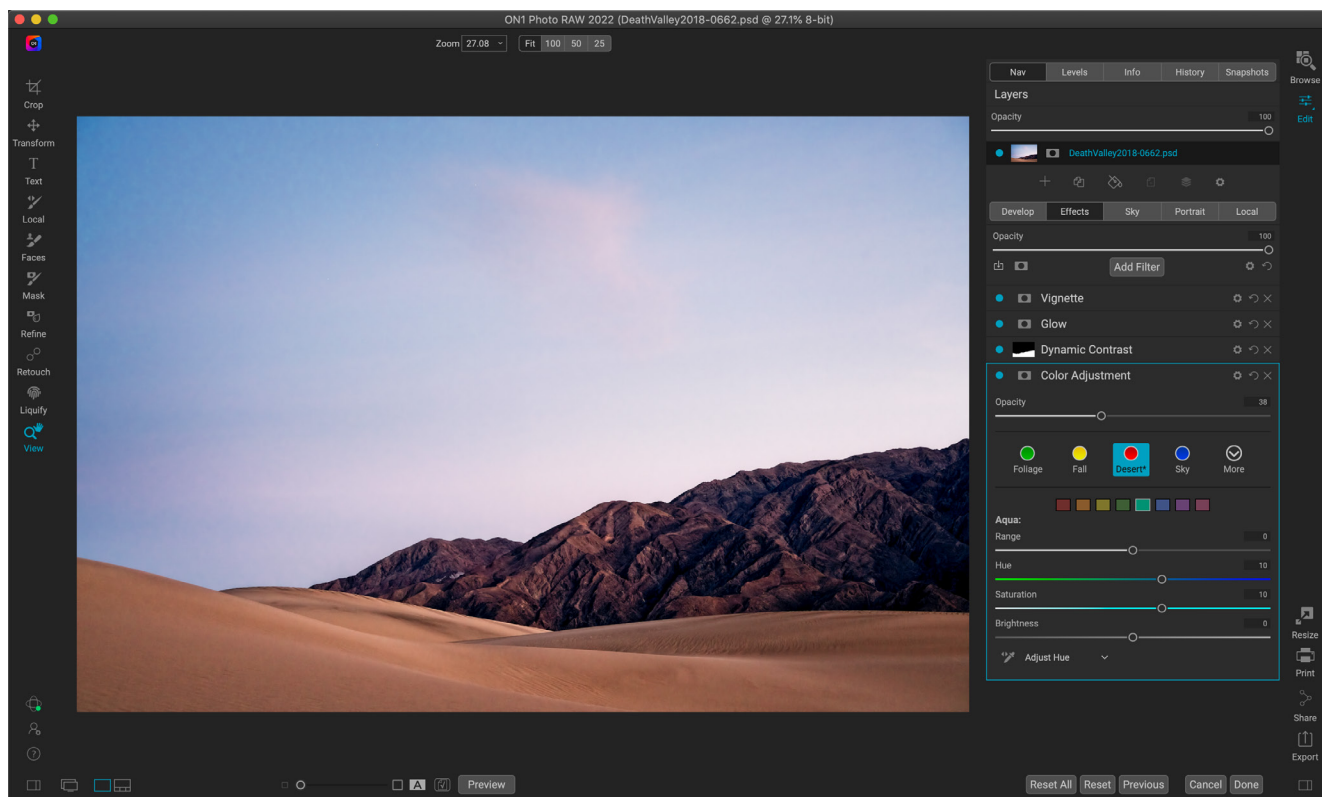
If Develop is the base from which you start editing your photos, Effects is the finishing school. With 31 filters that can be stacked in any order, and with extensive blending and masking options, Effects lets you create stunning, pro-level photos with ease. And, since it is built upon ON1 Photo RAW 2022's non-destructive editing engine, you can go from Browse to Develop to Effects and back again, preserving your edits, masks and more without having to worry about saving multiple versions of your files.

While Develop and Effects share the same tools, Effects is much more customizable in how adjustments—called filters in Effects—are applied. The editing stack inside Develop is fixed, while the stack in Effects is extremely flexible. Here are just a few of the things you can do with an image in Effects:

- You can add filters in any order (even multiple instances of the same filter).
- Move filters up and down in the stack.
- Add blending options to all or some of the filters and set the opacity of each filter individually.
- Create complex masks for each filter you add, letting you selectively apply a filter to specific portions of an image.

In addition to creating and using presets, you can copy and paste Edit module settings from one file to another, or alternatively, synchronize the edits on one photo to a group of photos. These operations can all be performed in any of the editing modules, as well as in Browse, adding to ON1 Photo RAW 2022's extreme flexibility. (See for details on how to copy edits between photos.)

Filters

Filters are the building blocks of Effects' editing power. Each filter is an adjustment type, much like the basic adjustment panes inside Develop, but Effects filters have much more functionality than the Develop panes. Each filter is like a movable, editable layer over the base image you are working on. You can use Effects' masking tools to apply a filter to only part of an image and can change the blending mode (and opacity of the filter) to alter the way the filter interacts with those above and below it in the stack.

The Effects tab has 30 filter types, added either by the Add Filter button found at the top of the Effects tab, or via the Filters pane on the left side of the window. You can apply filters in any order, and you can have more than one instance of a filter in the stack. (This can be helpful when you are creating complicated masks on an image and wish to apply the same filter differently in parts of the photo.)

FILTER OVERVIEW

Each filter pane has a different set of adjustment options and controls, but every filter pane has the same five sections:

A. Filter on/off button (left); Show/Hide Mask (right)

B. Displays blending mode options (left); Resets filter (middle); Deletes filter from the stack (right).

C. Filter opacity setting.

D. Styles pane for filter presets.

E. Control area for adjusting that filter's specific settings (dependent upon the filter chosen).
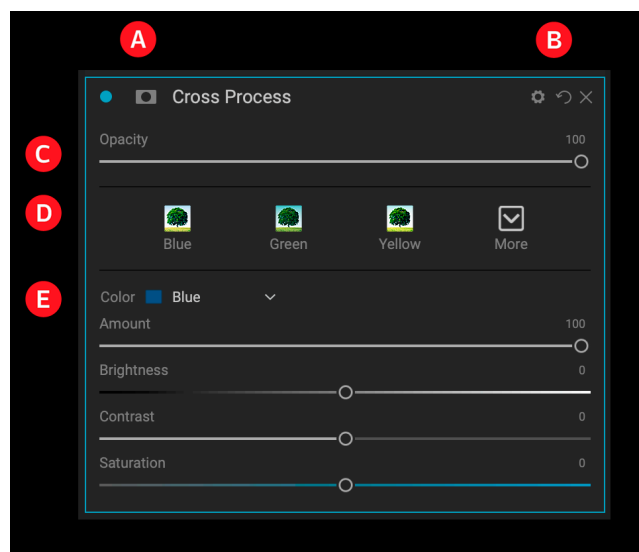
Overview of a filter—in this case, the Cross Process filter—inside Effects.

APPLYING FILTERS WITH THE ADD FILTER BUTTON

If you click the Add Filter button at the top of the Effects tab, the Filters window opens up, with a list of all 30 filters. If you run your cursor over a filter name, the right side of the window will have a small before/after thumbnail, a short description, and a list of keywords that relate to that filter. To add a filter, click once on the filter name, and it will add it to the stack, above the current filter. If there aren't any filters in the stack, the new filter will be at the top of the stack. You can click and drag the title bar in any filter to move it up or down in the stack.

If you're not sure what you might looking for,
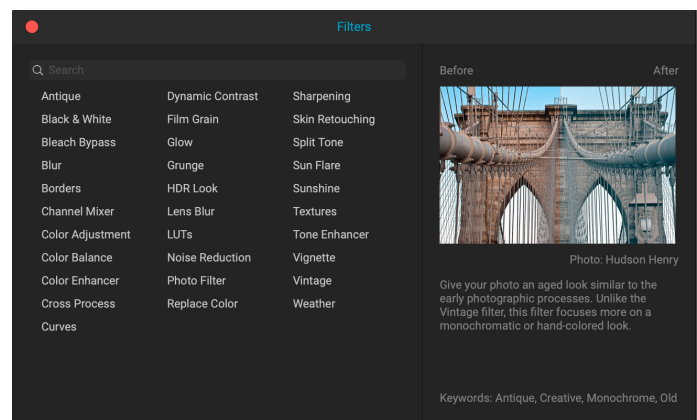
The Filters window opens when you click on the Add Filter button at the top of the Effects tab.

you can search for filters using keywords, like "monochrome," "contrast," "sharpening," and so forth. Photo RAW will then narrow down the search to those filters that match your search terms.

APPLYING FILTERS WITH THE FILTER BROWSER

In addition to the Presets panel found throughout the Browse and Edit modules, Effects has an additional Filter panel on the left side of the screen. This panel lets you browse all of the filters inside Effects, and display previews of the available styles for that filter.

To choose the Filters panel, click on the Filters tab. A list of the filters will appear, and clicking on a filter will display thumbnails of your image with that filter's available styles. To choose one, click on the style, and Effects will add that filter to the Overall Settings pane. Note that this will replace the currently selected filter in the stack; to add a new one on top of the stack, click the Add Filter button at the top of the Effects tab on the right, then choose a filter from the list. (You can also click and drag the title bar of any filter and move it up or down in the stack.)

If you'd like to see a larger representation of what your selected photo will look like with a filter's styles, click on the Quick View Browser icon in the category's title bar. That will display a window over the entire Photo RAW interface with all of the presets in that category. (Press the Escape key to close the Quick View Browser.)

To change the size of the thumbnails in the filter styles panel, select the Browser Mode option from the View menu and choose One, Two or Three Column Thumbnail View. (If you choose Thumbnail from the Browser Mode submenu, the Filters and Presets panels will display as thumbnails.)

The Filter Browser has a list of all the filters available in Effects (left). Clicking on a filter will display thumbnails of the filter's styles using your photo (right).

If you'd like help with what the different filter operations do, click on the Info button at the top right of the panel. With that button checked, when you hover over a filter, Photo RAW will display a small pop-up window containing the same description (with before/after thumbnail) found in the Add Filter window. Click the Info button again to turn off this display.
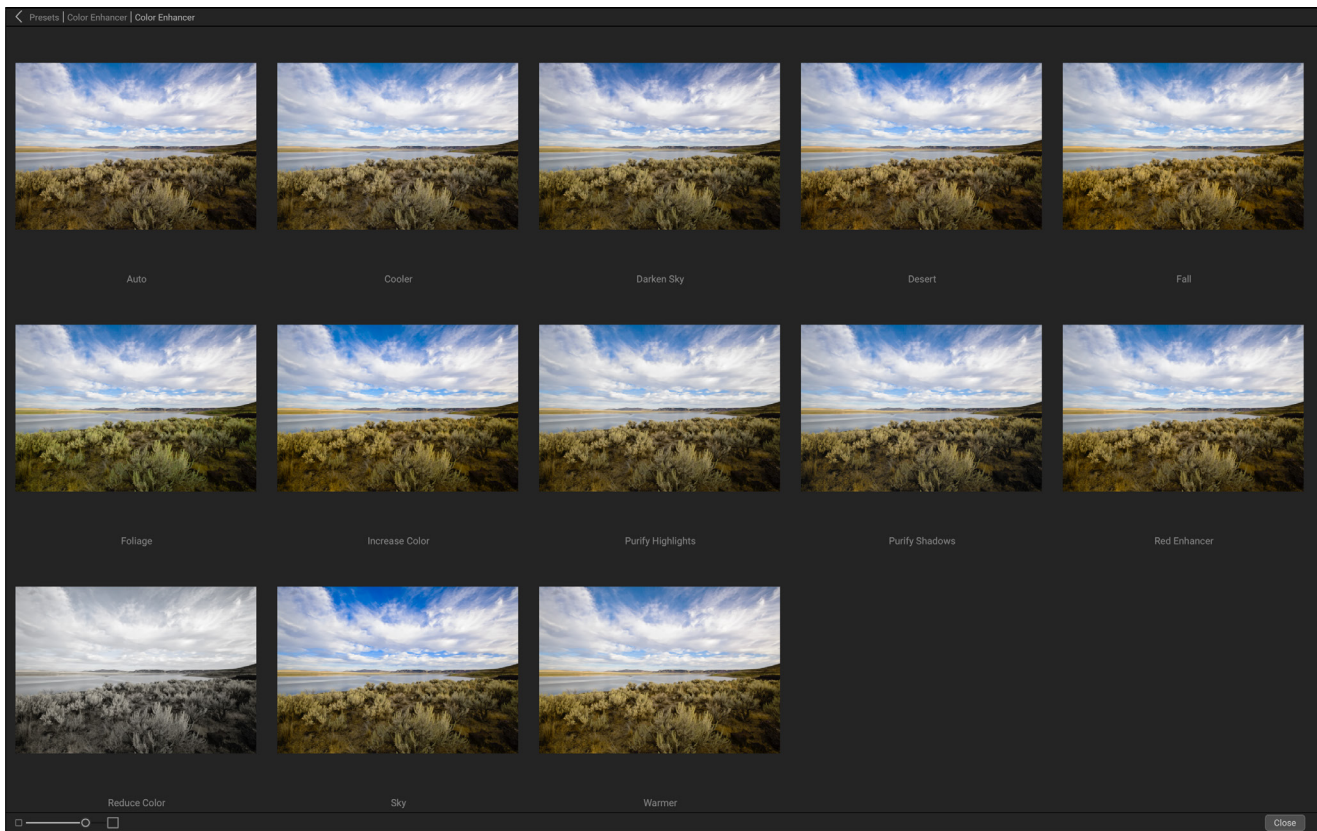
The Filter panel's Quick View Browser option works identically to the one for the Presets panel: click on the icon to the right of the filter name, and Photo RAW will display the current photo with that filter's styles applied.

Searching for filter styles inside the Filter Browser

To search for styles inside the Filter Browser, type in the name you're looking for in the search field at the bottom of the panel. The search results will appear in a new sub-folder called search results, which will be selected automatically.

Saving filter styles as favorites

If you hover over a filter style's thumbnail in either the Filter Browser or the Quick View Browser, you'll see a heart icon. Clicking the icon will fill the heart in and add that style to your Favorites category. This category resides at the top of the filter list, and contains all filter styles you have selected as a favorite. To remove a favorite, open the Favorites category, and click again in the heart icon.

To apply a filter style to a photo, simply click on the style in either the Filter Browser or in the Quick View Browser.

WORKING WITH FILTER PANES

By default, the filter stack is empty, although, if you have applied a preset that uses filters from Effects, you will see those filters in the stack. Clicking on the button in the top left corner of the filter pane will turn that effect on or off, which can be helpful if you want to see the effect in the context of other edits you have made. If you don't like the effect, click on the 'X' icon in the pane's title bar to get rid of it. The Reset button, which is next to the Delete button, represented by '↺,' will reset that pane's settings to their default.

To move a filter up or down in the stack, click on the pane's title bar and drag it up or down. A heavy white line will appear between panes as you drag; let go of the mouse at the location you wish the filter to go.

> **TIP:** Each pane can be collapsed, by clicking in the pane's title bar (a Hide/Show link is visible when you move your cursor over the title bar, but the entire title bar is clickable). If you don't want to have to scroll up and down the filter stack when you have a lot of open panes, go to the Window menu and choose Solo Mode. This will leave the current pane open, and will hide all the other panes. Clicking on another pane will open that one and collapse the previous one.

STYLES

All of the Effects filters have a set of built-in styles in the top part of the pane. Styles are like preset adjustments for a pane: they provide a group of settings to help you get started in the pane, or to apply a specific effect.

You use a style by clicking on the style's icon in the pane, and then can adjust the sliders as desired to get the right effect for your photo.

Styles for the Split Tone filter.

You can also save your own settings as a style. Simply click on the More icon on the far right side of the styles list for that pane, then choose Save New Style from the pop-up. Name your style, and it will then be added to the top of the More menu (see right). To apply a saved style, choose the style from the More pop-up menu. To adjust the settings for a saved style, apply it, make any changes you would like to the sliders or other options, then right-click on the More pop-up and choose Update Style with Current Settings from the menu.

Saved styles appear at the top of the More menu.

FILTER MASKS

Every filter has a mask associated with it, which lets you apply that filter's effect to specific areas of an image, using the Masking Brush and Masking Bug tools. By default, the mask is white, which means that the effect is visible in every part of the image. Using the Masking Brush, for example, you can 'paint out' the effect in areas that you wish not to be affected by the filter. Alternatively, you can invert a filter's mask and choose to 'paint in' the filter where you would like it to be.

When you add a filter, the mask is technically hidden. You can add one by either selecting and using one of the two masking tools, or by clicking the Show/Hide Mask icon in the title bar of the filter pane (this icon will initially be represented with a plus sign in the middle of it). When you add a mask in either way, the contents of the Show Mask icon will represent the mask on that filter layer.

Photo RAW has two options for viewing the contents of a mask: either as a red overlay on top of your image (the default) or a view only of the mask itself, represented as grayscale. These options are available from the Mask menu; select Show Mask to see the mask, while the View Mode option lets you switch between the two modes. (Photo RAW will remember the previous settings.)

The Mask section of any effect or local adjustment has the following contents, as shown below (using the Color Enhancer filter as an example):

A. The Show/Hide Mask icon, which displays the contents of the current mask. The default mask contents are white when you add an effect, and black when you add a local adjustment layer.

B. Buttons for opening the blending options, resetting the filter, and removing the filter from the stack.

C. Sets the overall opacity of the effect with the mask.

D. Larger display of the current mask, with buttons to invert, reset, copy, paste, create a luminosity mask, and view/hide the mask contents.

E. Density adjusts the overall mask density from black (100) to white (0). Feather blurs the mask.

F. The Levels and Window settings let you adjust the black and white points of the mask, fine tuning them in different ways.

G. The Color Range option lets you choose a color (selected via the dropper tool), and make or tune the mask based on the range of the color selected.
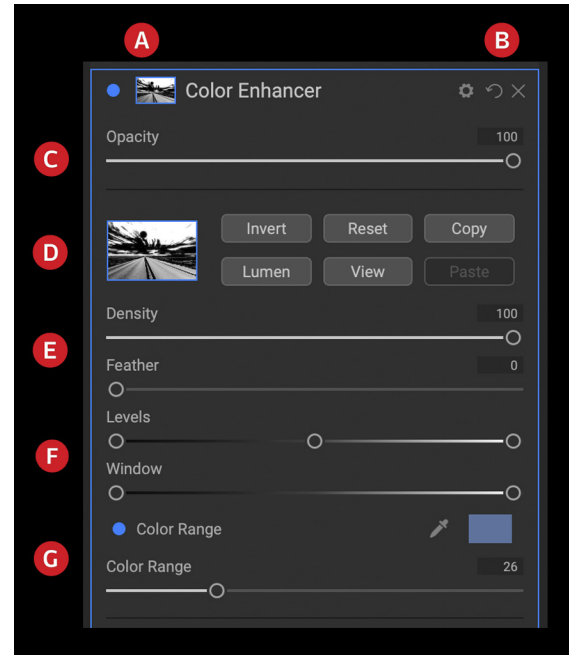
Overview of the Mask Options section of a filter pane in Effects, showing a luminosity mask. Mask Options is also applicable when working in the Local Adjustments tab, or on a layer in the Layers pane.

For more details about creating and manipulating masks in Photo RAW, see "Masking Basics" on page 102; information on the Masking Brush and Masking Bug tools starts on page 88.

DELETING A FILTER

You remove a filter by selecting it and pressing the 'X' icon in the top right area of the filter's pane.

FILTER OPACITY

Every filter has an opacity setting, which effectively adjusts the strength of the filter. The Opacity slider, which is found at the top of each filter's pane, ranges from 0 (no effect) to 100 (full effect). What this means is that at 100, all of the filter is applied to the image in the stack. At 50, the filter strength is half, and the effect is much less strong. Playing with a filter's opacity can often help soften an effect in a way that you wouldn't be able to get otherwise.

For example, if you add a Black & White filter to an image, but would like a faded, muted color effect, simply reduce the opacity of that filter. The more you reduce the opacity, the less effect the Black & White will have.

By default, when you add a filter, the opacity will be set to 100. You can create presets, however, with whatever opacity you wish for a given filter.

BLENDING MODES

In addition to opacity, you have one other very powerful option for adjusting the strength and effect of a filter: blending modes. Blend modes determine how a filter interacts with the filters below it in the image stack. Blend modes can darken or lighten an image, depending upon the mode chosen, while others adjust contrast or color. ON1 Photo RAW 2022's blend modes also let you apply a blend mode to specific colors or tones in your image, making them a very useful tool for precision editing of your images. You can apply sharpening, for example, only to the midtones in an image, which can be very helpful in a landscape image.

To see the blending modes, click on the Blending Options gear icon at the top of a filter's pane. The Blending Options area will drop down from the top of the panel. The blending option controls are:

- **Blending Options**: A pop-up list of blending modes. There are 24 common blending modes available in the list, including Normal, Lighten, Darken, Screen, Multiply, Soft Light, Hard Light, Overlay and Color.
- **Apply To**: This lets you apply the blending mode to a specific color or tonal range. The options are; All (the default), Highlights, Midtones, Shadows, Reds, Greens, Blues, Magentas, Cyans, Yellows, Flesh Colors, Vivid Colors and Neutrals. (You can also manually choose a color range by selecting the Dropper Tool in the pane and clicking on a color in your image.)

When you choose one of the options in this menu, the adjustment is only applied to that part of the image that is based on the lightness, hue, or saturation range specified. The Range slider expands or contracts the selected option, and the Highlights, Shadows, and Skin sliders protect those settings from your adjustments.

How blending modes work

At their basic level, blend modes determine how the pixels on one layer interact with the layers below it. With 24 blend modes in ON1 Photo RAW 2022, it might be difficult to know which ones to use in any given situation, but they can easily be grouped into Normal (the default mode) and five categories: Darken, Lighten, Contrast, Comparison, and Color/Luminosity.

Normal is the most widely used: it simply applies the effect to all of the pixels in the adjustment (or effect), assuming the layer opacity is 100%.

The other modes apply different levels of that category's effect using various mathematical formulas, and sometimes it can be hard to know which mode will work best with what photo. Most often, when you know how you want to apply an effect —by darkening, for example— you'll need to perform a bit of experimentation with the different modes in that category to determine which mode works best.

ON1 PHOTO'S BLEND MODES

DARKENS

LIGHTENS

ADDS CONTRAST

ADJUSTS BASED ON COMPARISON

AFFECTS COLOR OR BRIGHTNESS

Normal
Darken
Multiply
Color Burn
Linear Burn
Darker Color
Lighten
Screen
Color Dodge
Linear Dodge (Add)
Lighter Color
Overlay
Soft Light
Hard Light
Vivid Light
Linear Light
Pin Light
Hard Mix
Difference
Exclusion
Hue
Saturation
Color
Luminosity

MASTER OPACITY, BLENDING AND MASK OPTIONS

Effects also has master opacity and master blend mode options for the entire image stack, and includes a Master mask option. The Master Opacity slider, found at the top of the Effects tab, controls the strength of the composite filter stack against the original image—if you haven't performed any other editing operations on it—or against the image as it has been inside the Edit module.

The Master Blend Mode options can be accessed via the gear icon at the top of the Edit tab. It has the same blending options found in the individual filter panes, although it does not have the more advanced options, such as Density and Feather.

To create a Master mask, click on the mask icon next to the Save Preset icon in the Edit tab. This mask works on the entire effects stack.

Filter Types

Effects has 30 filter types available for you to use inside ON1 Photo RAW 2022. Each filter has a set of styles in the top row, providing a range of popular or useful options for using that filter. You can also save your own preset styles by clicking the More pop-up at the end of the Styles row.

ANTIQUE

The Antique filter gives your image an aged look; unlike the Vintage filter, this filter focuses more on a monochromatic or hand colored look.

- **Color**: Displays a list of color options that are similar in tone to the Split Tone filter, providing a duotone-style effect.
- **Brightness**: Adjusts the overall brightness of the image.
- **Fade:** Adds a white fill to the image, giving the illusion of a faded photograph.
- **Saturation**: Adjusts the color saturation. Moving the slider to the left decreases the saturation; moving it to the right increases it.
- **Film Grain**: Amount controls the strength and size dictates how large the grain appears.
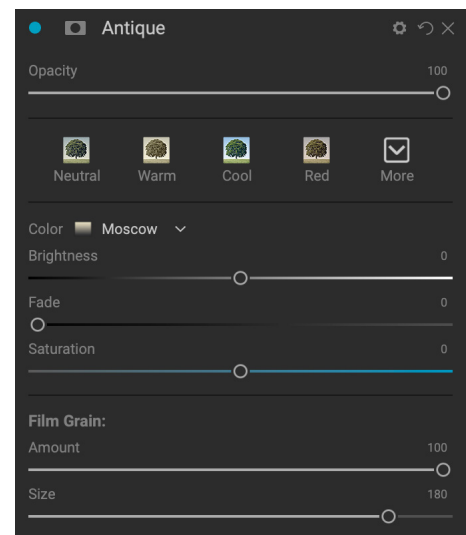
BLACK & WHITE

This pane is used to turn a color image into a monochromatic image, and, includes additional toning features. The styles at the top of the pane represent different filter types often applied to an image, while the Auto button selects the black and white points of your image automatically. To manipulate the tones manually, move the color range sliders to the right (increasing brightness) or the left (decreasing). Alternatively, you can choose the Channel Mixer option from the Conversion pop-up, and use the slider to choose a look that accentuates the color tones you are most interested in.

To change the tones directly inside a photo, choose the Color Response tool in the pane: click on it to select the tool, then click and drag in the image to increase or decrease the brightness of the selected color range.

Tone

The Tone section of the Black & White pane lets you adjust brightness, contrast, highlights and shadows, whites and blacks, and detail directly within the filter pane.

Toner

The Toner section of the filter is designed to approximate many traditional and popular darkroom-based paper toners, from sepia tones to platinum, selenium, coffee and more. You can choose from more than 20 toning options via the Type pop – up menu, and adjust the combination of paper (which is represented by the Highlights section of the pane) and silver (represented by the Shadows). To tune your options, you can adjust the Hue or Amount of each setting, and use the Swap tones icon (next to the Highlights color well) to swap the highlights and shadows colors. The Preserve Whites and Blacks button keeps the pure whites and pure blacks neutral, instead of taking on the color of the toner.

Film Grain

The last section of the Black & White pane is Film Grain, which, like the Toner section, is designed to add a classic film grain look to your photos. To add film grain, choose from the drop-down list of popular black and white films. The Amount slider controls the strength of the effect, while the Size slider adjusts the scale of the grain.
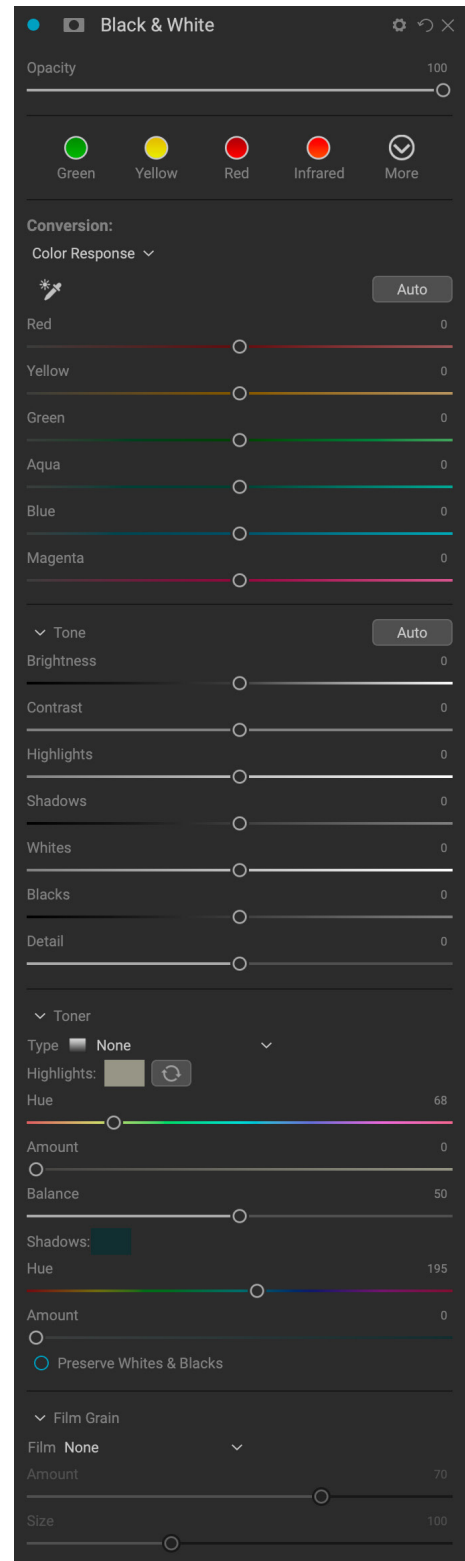
BLEACH BYPASS

This filter is based upon an old color film processing technique where the bleaching step was skipped. It reduces the saturation and increases the contrast.

- **Amount**: Controls the strength or amount of the bleach bypass appearance.
- **Brightness**: Adjusts the overall brightness of the image.
- **Contrast**: Increases or decreases the global contrast.
- **Detail**: Enhances the details by increasing the micro contrast.
- **Saturation**: Adjusts the underlying saturation.
- **Tint**: Choose a new color by clicking in the color icon or by using the Hue slider.
- **Amount**: Adjusts the strength of the tint.
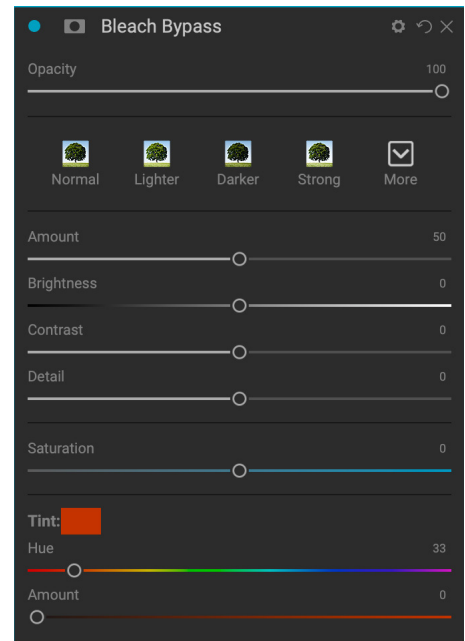
BLUR

This filter has five options for adding blur to your images: Gaussian, Motion, Radial, Surface and Box. Each blur has its own look:

- **Gaussian**: This is a simple Gaussian blur applied to your image. It has one slider, Amount, which controls the strength of the blur by adjusting the radius.
- **Motion**: This adds the appearance of movement.
    - The Amount slider controls the strength of the blur, and Distance controls the blur relative to the subject and camera. Angle sets the angle of the blur, and the Smoothing slider softens the lines created by the motion.
- **Radial**: These blurs are circular, zooming out from a central point.
    - Amount controls the strength of the blur. Quality controls how noisy the blur is, with 1 being grainy and 100 smooth. Smoothing softens the lines created by the motion.
    - The Radial blur type includes a center spot selector at the bottom of the pane. Click on the icon, then click on the part of the image you want to make the center of the blur.
- **Surface**: These blurs preserve edges while blurring the rest of the image. This blur type can give you a "simplified" effect. The Amount slider controls the strength of the blur, while Threshold sets how similar colors are grouped.
- **Box**: A Box blur is similar in concept to a Gaussian blur, but it bases the blur on contrasting edges. Box blurs tend to retain edges a bit more clearly than Gaussian blurs.
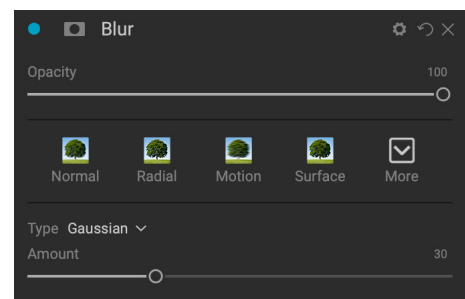
> **NOTE:** Do not use the Opacity slider when trying to reduce the strength of a blur; use the Amount sliders instead.

BORDERS

ON1 Photo RAW 2022 has a large collection of pre-made borders and edges that you can add to your photos. These borders range from classic film borders to viewfinders to artistic effects to emulsion transfers and many more.

The Borders filter also has an extensive set of controls for manipulating the size, color, and blending mode of the borders you choose.

You can also import your own borders, either directly into the Borders filter pane, or via the Extras Manager (available in Browse). Border files need to be a standard PNG file type with a large central transparent area

The Category and Border pop-ups at the top of the pane are used to select the border category and the specific borders within each category. There are 8 built-in categories, sorted by type. Any user-imported borders will also appear in this list.

Once you have chosen a border to add, you can adjust its blending mode and opacity, and, if the border has color, you can adjust its hue, saturation and brightness. Alternatively, if the border is black or white, you can colorize it.

The Transform section at the bottom of the Borders pane lets you scale the border up or down in size, to help you get the look you're after, and the Fit Image slider adjusts the size of the image under the border.

You can rotate or flip the currently selected border by clicking the buttons at the bottom of the screen.
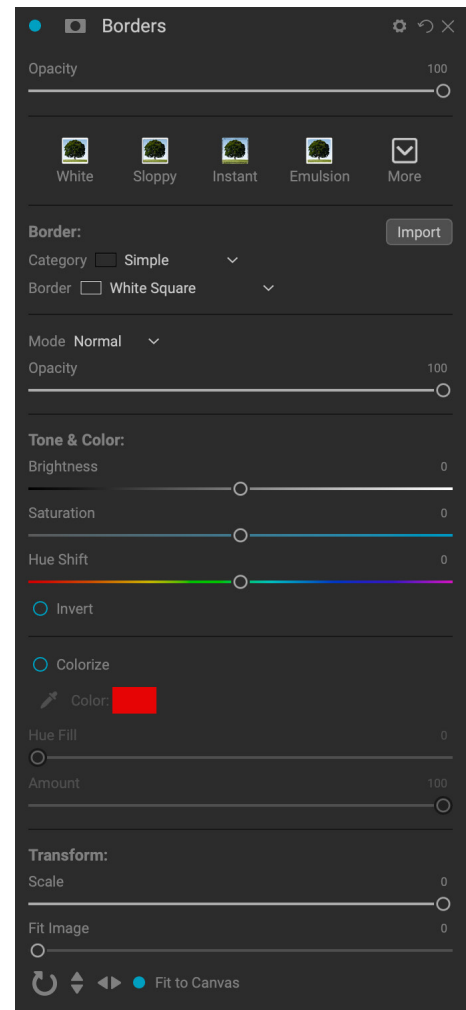
> **NOTE:** See "Extras" on page 9 for information on how to use the Extras Manager to import borders, textures and other extras, along with additional information for preparing files for the Borders and Textures filters.

CHANNEL MIXER

The Channel Mixer filter adjusts the intensity and color of the individual red, green and blue channels in a photo. You can use it for black and white conversions, channel swapping for infrared shots, or to shift entire color ranges.

Click on the channel icons to select a specific channel, and use the Red, Green and Blue sliders to increase or decrease the pixel values for that channel.

The Constant slider affects the luminosity of the currently selected channel.
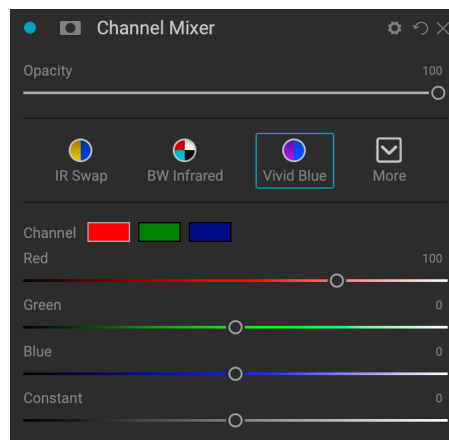
COLOR ADJUSTMENT

This pane lets you adjust specific ranges of color in your photos. The styles at the top of the pane are designed to help enhance specific scene types (Foliage, Fall, Desert, Sky).

In the pane underneath are color swatches for eight colors: red, orange, yellow, green, aqua, blue, purple and magenta. Clicking on one of the colors will let you adjust the hue, saturation and brightness of the selected color range. Other settings include:

- **Range**: This slider lets you narrow or widen the range of the selected color.
- **Hue**: Changes the hue for the selected color range.
- **Saturation**: Adjusts the saturation of the selected color range.
- **Brightness**: Adjusts the brightness of the selected color range.
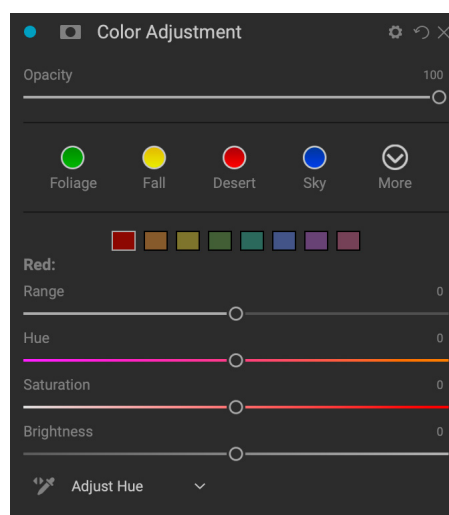
You can also use the pane's Targeted Dropper tool to adjust the hue, saturation or brightness dynamically. To do this, click on the tool and choose which parameter you would like to adjust. Then click in your image on a color you would like to adjust and drag the cursor to the left or right to decrease or increase the effect.

COLOR BALANCE

This filter lets you adjust the colors in a photo's highlights, midtones and shadows tones. This can be useful when you wish to color grade a photo, remove color casts from shadows or highlights, or to create duotone- or tritone-style images.

To use the pane, click on the tone you wish to adjust (Highlights, Midtones, Shadows) and raise the Amount slider. After that, use the Hue and Brightness controls to adjust the look you wish to achieve.

The Color patch, which will originally be represented as 18% gray, will change, representing the combination of all three sliders for that tone.
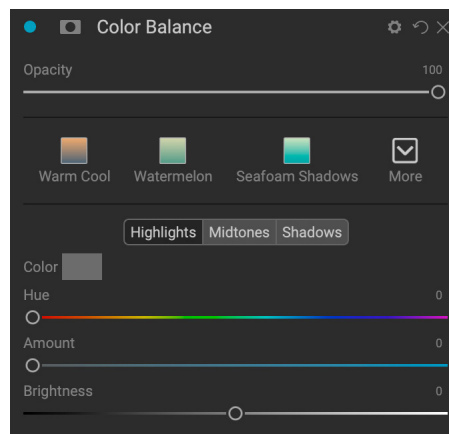
COLOR ENHANCER

The Color Enhancer is designed to give you complete control over color manipulation in your image, whether it is on a globally across your entire image, or by adjusting different color ranges.

The styles at the top of the pane are designed to help enhance specific scene types (Foliage, Fall, Desert, Sky). To adjust global color in an image, work in the Color section of the top half of the filter pane; to work with individual color ranges, use the Color Range section at the bottom of the pane.

Color

The Color sliders in the top half of the pane control Temperature, Tint and Vibrance. They are used to remove a color cast and enhance the color of the image. The settings in this section of the Color Enhancer pane include:

- **Auto Button**: The auto button attempts to detect and remove a color cast. It makes adjustments to the Temperature and Tint sliders.

- **Gray Dropper**: Used to remove a color cast of an image. Click the icon to activate, then click on an area in the image that should be gray. The sliders will automatically adjust according to the sample you have selected.

- **White Balance**: This pop-up lets you change the white balance according to common color temperatures (As Shot, Auto, Daylight, Cloudy, Shade, Tungsten, Florescent, Flash, Custom). The default is As Shot, the color temperature that the camera recorded when you took the photo.

- **Temperature**: This slider shifts the color either cooler (blue) or warmer (yellow).
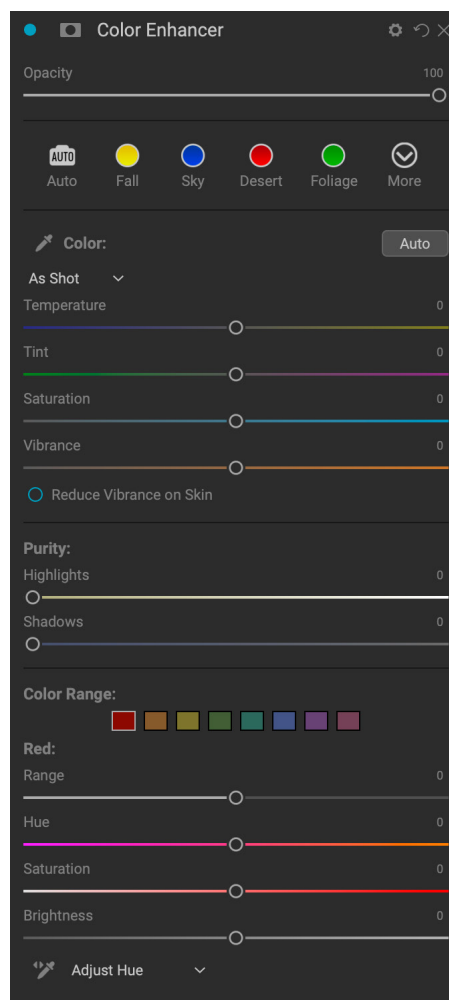
- **Tint**: Shifts the color either green or magenta.

- **Saturation**: Increases or decreases the saturation of your image.

- **Vibrance**: Increases or decreases the color of muted tones, leaving more saturated colors alone.

- **Reduce Vibrance on Skin**: When turned on, adjustments made with Vibrance slider are reduced on skin colored areas. This allows you to increase the vibrance of clothing and the background without adversely affecting the skin color.

- **Purity – Highlights**: Reduces the saturation in the highlights.

- **Purity – Shadows**: Reduces the saturation in the shadows.

Color Range

In the Color Range section of the pane are swatches for eight colors: red, orange, yellow, green, aqua, blue, purple and magenta. Clicking on one of the colors will let you adjust the hue, saturation and brightness of the selected color range. Other settings in the pane include:

- **Range**: This slider lets you narrow or widen the range of the selected color.

- **Hue**: Changes the hue for the selected color range.

- **Saturation**: Adjusts the saturation of the selected color range.

- **Brightness**: Adjusts the brightness of the selected color range.

You can also use the pane's Targeted Dropper tool to click on a section of your photo and adjust the hue, saturation or brightness dynamically. To do this, click on the tool and choose which parameter you would like to adjust. Then click in your image on a color you would like to adjust and drag the cursor to the left or right to decrease or increase the effect.

CROSS PROCESS

This filter simulates the effect of processing film deliberately with the incorrect chemistry. It creates unnatural colors and high contrast.

- **Color**: A drop-down list of cross-processing types (Blue, Green, Yellow, with Strong options).

- **Amount**: Controls the overall strength of the filter.

- **Brightness**: Adjusts the overall brightness.

- **Contrast**: Adjusts the overall contrast.

- **Saturation**: Adjusts the underlining saturation.
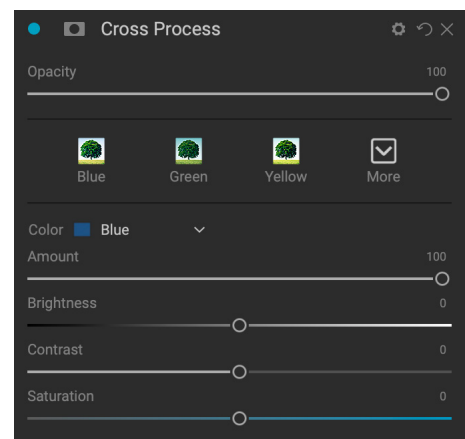
CURVES

The Curves pane is a powerful—and advanced—tool for adjusting contrast, tone and color in your image. The buttons at the top of the pane let you adjust the composite RGB channel (All), or you can adjust the individual Red, Green or Blue channels independently, creating a number of targeted or special effects.

In the main part of the pane, the left side of the X-axis represents the dark tones in your image, while the right side represents the light tones. By clicking on the line at the center of the pane and dragging it up or down, you adjust those specific tones making them lighter or darker. (It is often helpful to keep an eye on the Histogram when making adjustments with Curves.)

The Style pop-up for the Curves filter has a number of options, including settings for color negatives, matte-style looks, and more.
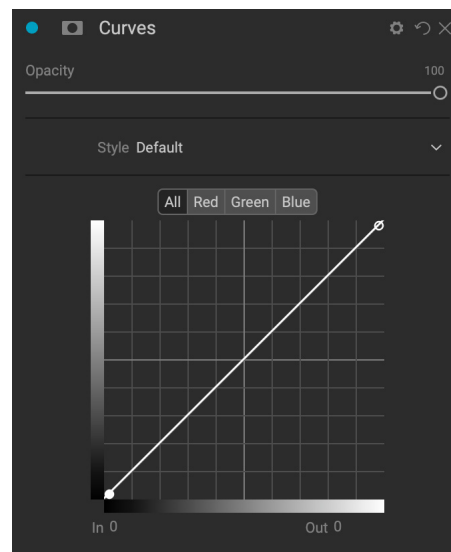
DYNAMIC CONTRAST

Dynamic contrast adds clarity—also known as tonal contrast—to your image, making it pop. It can be a strong effect, so it is often combined with masks to help lessen the effect in certain areas of an image (clouds in a sky, for example, often look surreal with too much Dynamic Contrast applied to them).

The top portion of the pane adjusts the contrast in areas of small, medium and large detail; moving the slider to the left decreases the contrast, while moving the sliders to the right increases them.

Because adjusting the contrast in extreme ways can affect an image's tonal qualities, the bottom section of the pane lets you make adjustments to the highlights and shadows to recover detail, in the white and black areas, and increase vibrance.
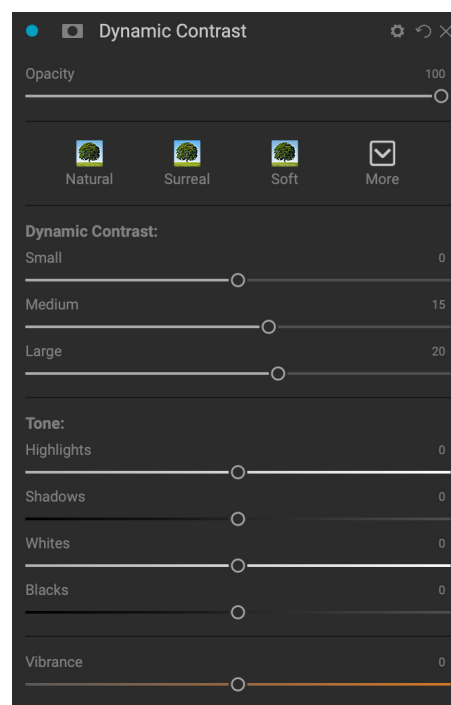
FILM GRAIN

The Film Grain filter is designed to add a classic film grain look to your photos. It operates identically to the section found in the Black & White filter, but lets you add grain without having to convert your photos to black and white.

ON1 Photo RAW 2022 has a wide range of grain types from classic black-and-white negative films from Kodak, Ilford and Fujifilm. To add grain, choose from the Film drop-down menu.

The Amount slider controls the strength of the effect, while the Size slider adjusts the scale of the grain.
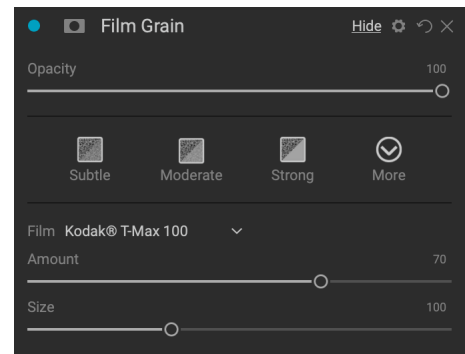
GLOW

This pane adds a soft-focus glow to the image, which can be accentuated by using different blending modes. The Styles section and the More pop-up include a number of different glow types. Adjustable settings for the Glow pane include:

- **Amount**: Controls the overall strength of the glow.
- **Halo**: Sets the radius of the glow effect; higher numbers create more 'fuzziness' to your image's edges.
- **Mode**: Lets you set the blending mode for the glow effect.
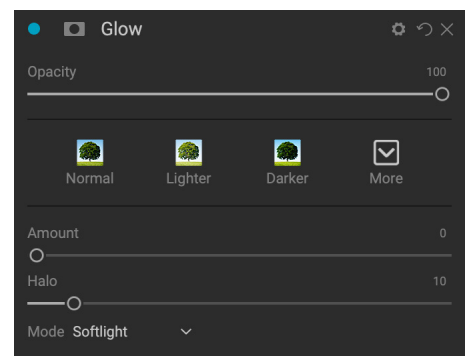
GRUNGE

This filter is used to add a dirty or grungy look to your image. Settings in this pane include:

- **Amount**: Adjusts the overall strength of the grunge.
- **Brightness**: Adjusts the overall brightness of the image.
- **Saturation**: Adjusts the underlying saturation.
- **Detail**: Adjusts the amount of detail.
- **Glow Amount**: Adds a glow to the grunge.
- **Mode**: Selects the glow blending mode.
- **Film Grain Amount**: Adds film grain to the image.
- **Film Grain Size**: Controls the grain size.
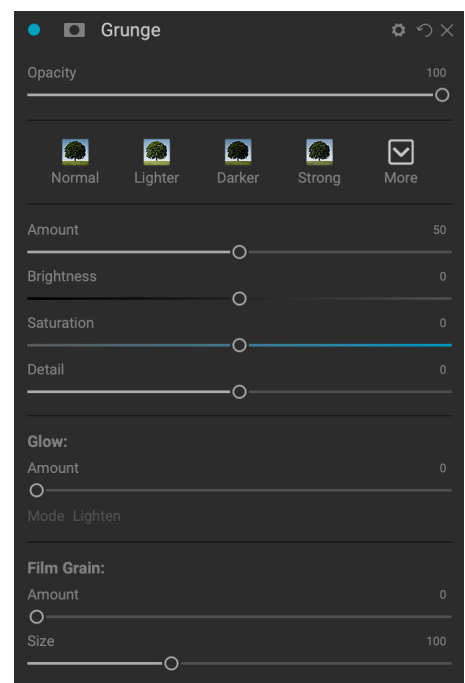
HDR LOOK

This filter recreates the HDR style of tone mapping, with accentuated edges and sharpening. Like the Dynamic Contrast filter, HDR Look will often benefit from masking or via blend modes. Settings include:

- **Compression**: Compresses the tone to reveal highlight and shadow detail.
- **Detail**: Increases the local contrast of details and edges.
- **Clarity**: Increases the global contrast.
- **Highlights**: Recovers detail in the highlights.
- **Shadows**: Recovers detail in the shadows.
- **Vibrance**: Adjusts the vibrance of muted colors.
- **Glow**: Adds a bright glow.
- **Grunge**: Adds a dark gritty look.
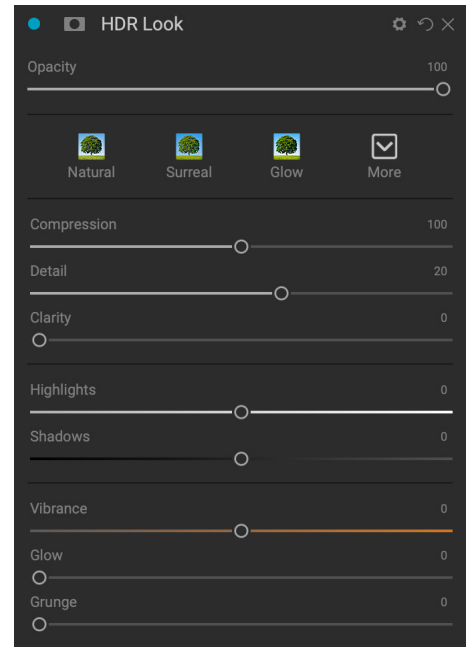
LENS BLUR

This filter creates a blur, based on a camera lens such as a tilt-shift or a shallow depth of field look. You can use the Masking Bug to adjust the amount of blur through your image, or brush in or out the effect where you want it. The filters settings include:

- **Amount**: Adjusts the overall strength of the blur.
- **Optic Quality**: Controls the aperture shape in the inner and outer feather.
- **Sides**: Sets the number of blades in the lens aperture, which changes the shape of the bokeh.
- **Curvature**: Sets the curvature of the aperture blades.
- **Blooming**: Adjusts the highlight bokeh.
- **Brightness**: Controls the overall brightness of the blur.
- **Contrast**: Controls the contrast of the blurred areas.
- **Noise**: Adds simulated film grain to the blurred areas.
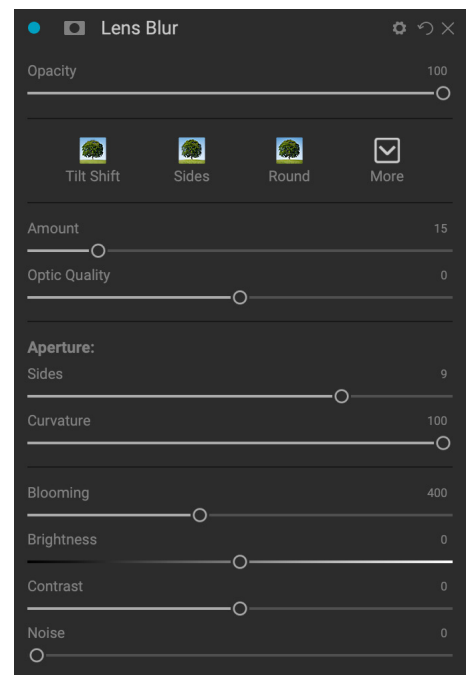
> **NOTE:** Do not use the Opacity slider when trying to reduce the strength of a blur; use the Amount sliders instead.

LUTS

The LUTs filter applies a color look-up table (LUT) to transform the underlying color of an image. LUTs were first used with video applications to provide color-grading (and other) effects to film, and they are increasingly popular in still photography. The Styles section has a few default effects you can apply, and you can also import your own LUTs, by clicking the Import button inside the filter.

Photo RAW can import common LUT file formats, including .3DL and .CUBE file types.

- **Category:** This pop-up menu lets you choose from one of the pre-installed LUT categories, or any categories you have imported into Photo RAW.

- **LUT:** Displays the available LUTs within the chosen category.

- **Contrast:** Lets you adjust the underlying contrast.

- **Saturation:** Adds or reduces saturation.
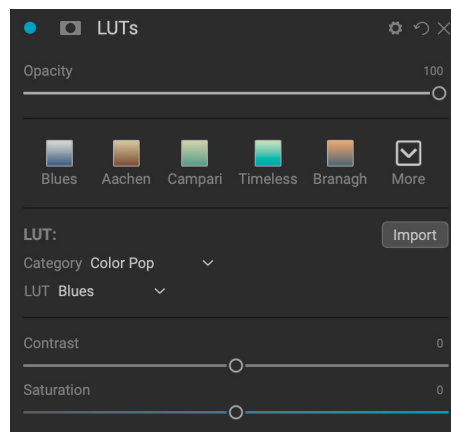
> **NOTE:** See "Extras" on page 9 for information on how to use the Extras Manager to import LUTs into Photo RAW.

NOISE REDUCTION

Use this pane to reduce luminance and color noise, while maintaining image detail. The styles section includes a number of different noise reduction options, based on the type of image you're working on.

- **Luminance**: Adjusts the overall strength of the noise reduction applied to the luminance or detail of the image. Hold down the Alt/Option key to see just the luminance while adjusting this slider.

- **Color**: Controls the amount of noise reduction applied just to the color or chroma of the image.

- **Detail**: Controls how much edge detail is protected. Hold down the Alt/Option key to see the edge mask while adjusting this slider.

- **Apply to**: Allows you to limit the noise reduction to just a portion of the image based on color or brightness values. Options include highlights, shadows and midtones, as well as color ranges. To set a custom color range, click the Dropper icon and click on a color area that has the noise you wish to remove. Use the Range slider to adjust the range (or 'fuzziness') of the color range to apply the noise reduction to.
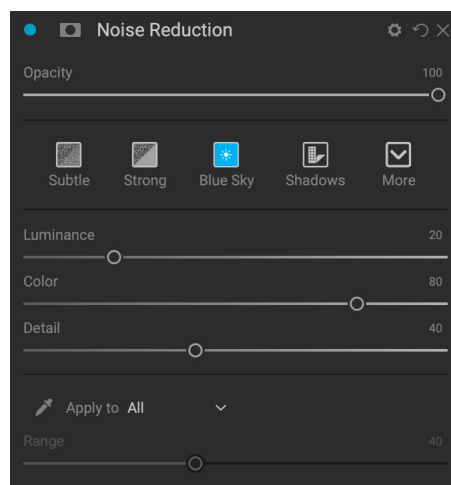
PHOTO FILTER

This filter recreates traditional color lens filters used for warming, cooling, gradients and more. You choose the filter type from the pop-up menu at the top of the pane, then adjust the settings to your liking. Each type offers different options for selecting a filter color (or colors, in the case of the Bi-Color type), adding saturation or polarization, and more.

There are four Filter Types: Solid, Graduated, Bi-Color, and Center. The Solid option includes a section for choosing the single color you wish the filter to be, and an Amount slider for how strong you want the effect, as well as a Saturation slider for boosting or reducing overall color. The Polarizer slider adds a polarization effect, which can sometimes help clear haze or enhance the blues and greens in an image.

The Bi-Color and Graduated filter types let you choose filter color (or colors), feather for the filter transition, and a direction for the effect.

The Center type works much like the Graduated option, with the difference being that the filter radiates from the center of your image, and you can choose the center to be either clear or colored.
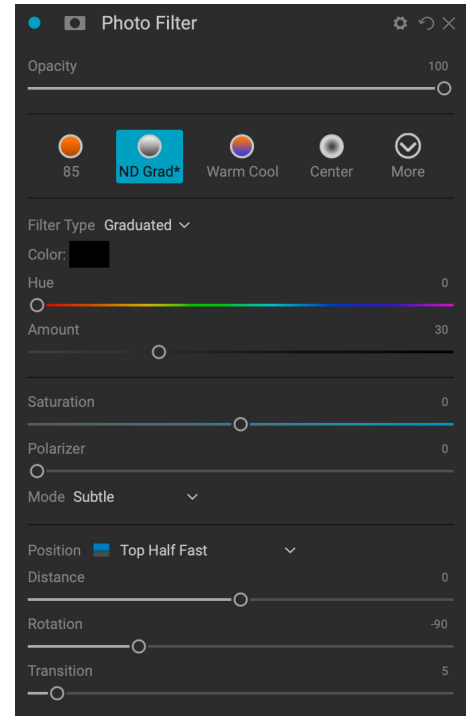
REPLACE COLOR

This filter lets you select a color range and replace that range with one of a completely different color. When used with filter masks, you can achieve targeted color changes in a photo with ease, while retaining the other colors in the image.

The top section of the filter is used to select a target color, and the bottom section is where you pick a replacement color.

First, use the eyedropper tool to select a color from your photo, or click on the color swatch to pick one from the color wheel. Adjust the Range slider to add or remove colors similar to your target. The Amount slider is similar to an opacity setting: anything less than 100 (the default) will blend the new color with the original color. You'll see the results in real-time, so you can get a good idea of the selection.

In the Color Change section, click on the swatch to set a new color, or use the Hue, Saturation and Brightness sliders to get the color you're after. If you have areas where you don't want the source colors changed, use the masking tools to paint the effect out.
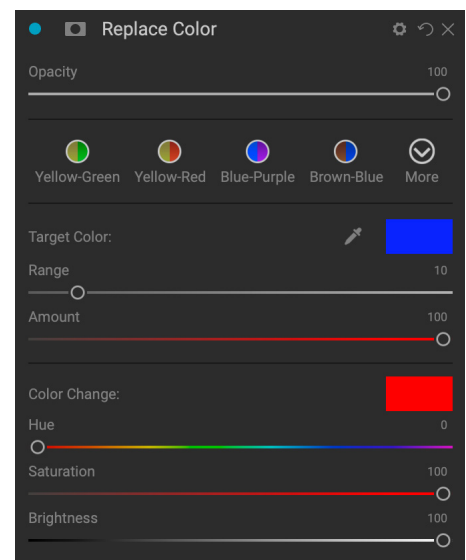
SHARPENING

This pane helps add sharpness to your photos, to compensate for a moving subject or a slightly out-of-focus camera, or for an illustrative effect. ON1 Photo RAW 2022 offers three algorithms for sharpening, High-Pass, Progressive and Unsharp Mask. Which one you use depends upon the image or your personal preferences. The styles section and the More pop-up have a wide range of sharpening styles to help you get started.

- **Type**: Chooses the sharpening method. Each sharpening method has its own set of sliders.

- **Amount (all types)**: Controls the overall strength of the sharpening for each sharpening type.

- **Halo (Unsharp Mask, High Pass)**: Sets the radius of the sharpening effect. Smaller amounts keep fine detail, while larger amounts can exaggerate edge detail.

- **Threshold (Unsharp Mask, Progressive)**: Controls the sharpening effect based on contrast in your photo. Larger settings means that smoother areas do not get sharpened.

- **Detail (Progressive only)**: Controls sharpening in small details.

- The **Protect** section protects highlight, and shadow areas and skin tones from having sharpening applied.
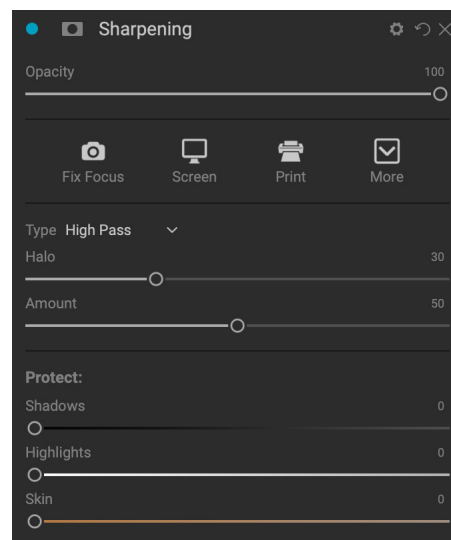
SKIN RETOUCHING

The Skin Retouching pane is used to reduce blemishes, smooth skin and reduce shine on skin. The styles at the top of the pane represent a range of adjustments, from subtle to strong, and the More pop-up menu has a number of additional styles for you to choose from, depending upon your image. Other settings include:

- **Blemishes**: Adjusts the strength of acne, pores and fine lines.

- **Smoothing**: Adjusts the strength of smoothing similar to makeup foundation.

- **Shine**: Adjusts the strength of the skin shine.

- **Evenness**: Adjusts skin color consistency across the entire face. It is great for correcting overly yellow highlights, shadows that may be green or reducing redness in noses and ears.

- **Skin Color**: Use the Color Dropper icon to select the skin color. Click the icon to activate it and single click again on the color of the skin in the image.

- **Color Well**: This will display the color you have chosen with the Color Dropper. Clicking on the well will let you choose a different color to represent the skin.

- **Range**: Adjusts the precision of the color selected.
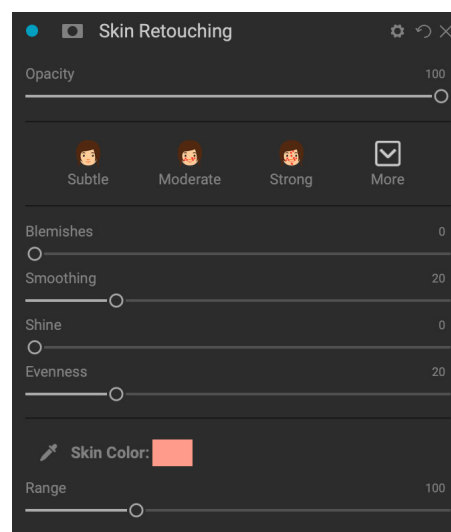
SPLIT TONE

This filter applies a duotone-style effect by using a gradient map that tints the dark and light portions of the image in different hues. This can be used to age an image and give it an antique or vintage look. The styles section has a selection of popular split-tone effects, and you can create your own by manipulating the sliders to choose a map for the highlight and shadow colors.

To use the pane, you can use the Hue slider in each of the sections to choose the colors you want for highlights and shadows. The Amount slider controls the strength of the color, and Balance sets the balance between the shadow and highlight colors, letting you make one of the colors more dominant. You can swap the Highlight and Shadow Colors by clicking the button to the right of the Highlight color.

The Mode pop-up sets the blending mode for the split tone. The options you can choose from are Normal (no blending), Color, Lighten, Darken, Multiply or Screen.
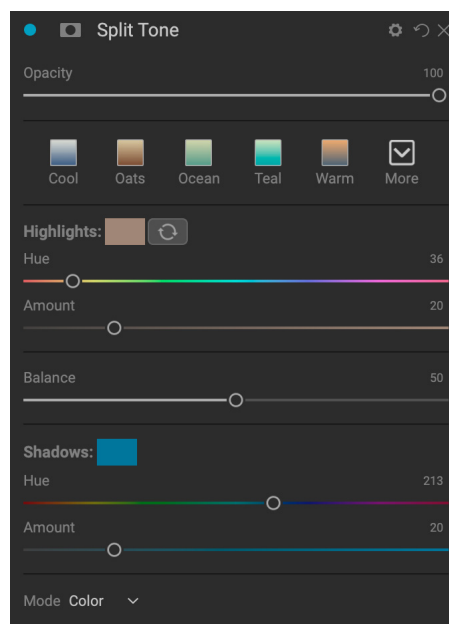
SUN FLARE

This filter adds realistic-looking sun flares, sun stars and bokeh overlays to a photo. You can resize, move and adjust the tone and color of the effect, and can also add toning similar to the standalone Sunshine filter. The Type pop-up lets you choose between the three options (bokeh, flare or star), and the Texture menu displays a range of options for the chosen type.

The Tone & Color section of the filter lets you adjust the brightness, saturation and hue of the current texture.

To move the position of the texture, click the icon next to the Transform label, then click and drag on the overlay to the desired spot. You can use the Scale slider to enlarge the overlay, and you can rotate or flip it by clicking on the icons to the left of the Fit to Canvas button.

The bottom of the Sun Flare pane includes a version of the Sunshine filter, letting you adjust the warmth and saturation of the overall effect. The Fade slider gives a matte look to the final effect.
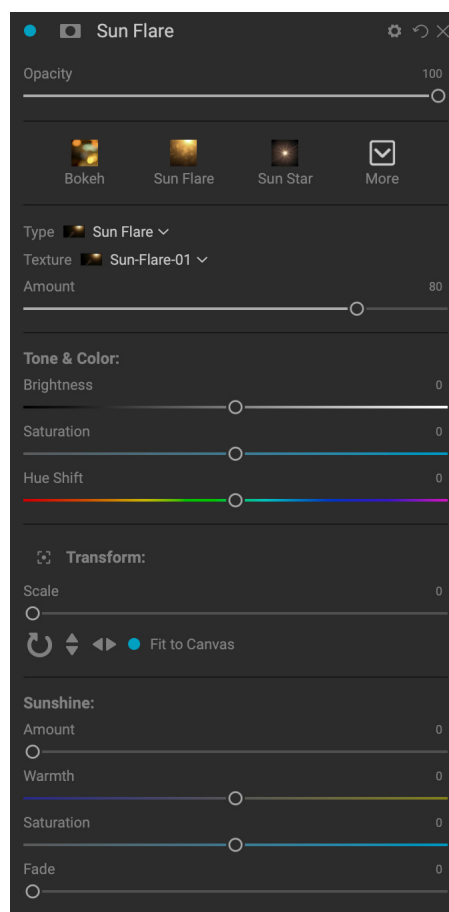
> **NOTE:** See "Extras" on page 9 for information on how to use the Extras Manager to import Sun Flare files into Photo RAW.

SUNSHINE

This filter increases the appearance of sunshine in a photo, and can help to make a flat, cloudy day more vivid. The controls are fairly straightforward, including adjustments for the strength (Amount), warmth and saturation. You can use the Glow slider to add a bright glow to your image.
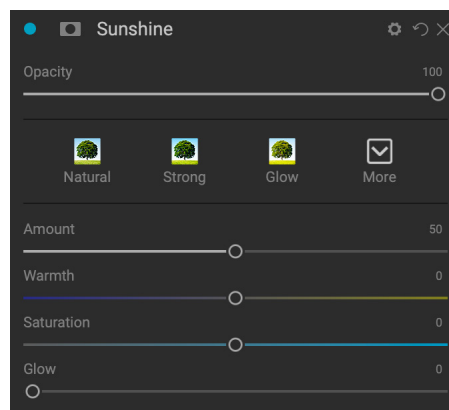
TEXTURES

The Textures filter places a texture over the image to add a stylized look and is similar to the Borders filter in scope and functionality. ON1 Photo RAW 2022 comes with an extensive set of textures that you can add to your photos, ranging from fabric, metal, stone, text and more. You can also import your own textures directly into the Borders filter pane, or via the Extras Manager (available in Browse). Texture files can be almost any image format (JPEG, TIFF, Raw or Photoshop).

When loading a texture file, it will be rotated automatically to match the orientation of your image. You can override this with the rotate and flip tools, and use the Transform option to scale the texture's size over your image.

The Textures pane has Category and Texture pop-ups at the top of the pane, used to help you narrow your texture search. There are nine texture categories, sorted by type, and any user-imported textures will also appear in this list.

Once you have chosen a texture, you can adjust its blending mode and opacity, and, if the texture has color, you can adjust its hue, saturation and brightness. Alternatively, if the texture is black or white, you can colorize it by clicking on the Colorize button in the bottom half of the pane.

The Transform section at the bottom of the pane lets you scale the texture up or down in size. You can also rotate or flip the texture by clicking the buttons at the bottom of the screen, which can be helpful to achieve the look you desire.
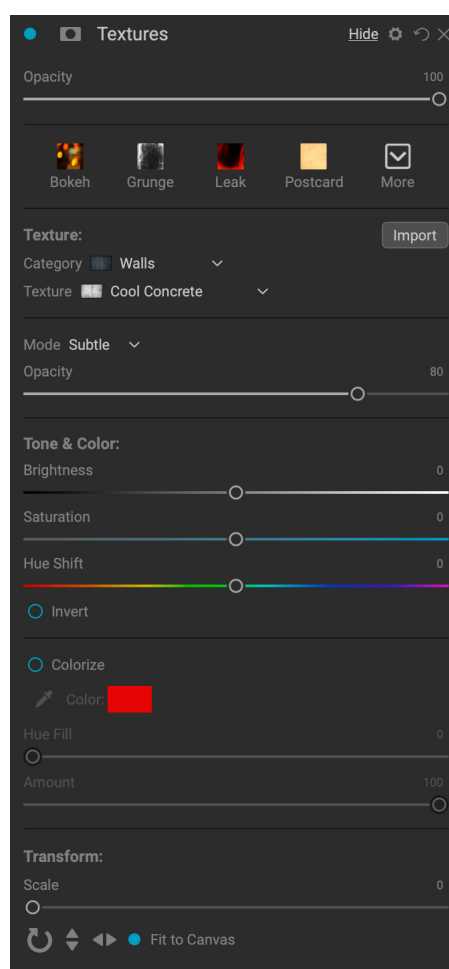
NOTE: See "Extras" on page 9 for information on how to use the Extras Manager to import textures (and other extras), along with additional information for preparing files for Borders and Textures.

TONE ENHANCER

The Tone Enhancer controls the brightness and contrast, or tone, of the image and lets you recover detail in the highlights and shadows, and adjust the white or black point. It offers similar controls to the Tone section of the Tone & Color pane, and also includes a curves dialog.

- **Auto Button**: The auto button sets the white and black points automatically, adjusting all of the primary tone settings to balance the histogram.

- **Exposure**: Adjusting this slider to the right will lighten your image. Adjusting to the left will darken your image.

- **Contrast**: Increase or decrease the contrast.

- **Highlights**: Darkens or lightens the highlights.

- **Shadows**: Darkens or lightens the shadows.

- **Whites**: Adjusts the white point, adding or removing contrast in the highlights.

- **Blacks**: Adjusts the black point, adding or removing contrast in the shadows.

- **Compression**: Compresses the tone to reveal highlight and shadow detail.

- **Detail**: Increases the local contrast in the image.

- **Clarity**: Enhances large edges to add clarity.

- **Curves**: The curves dialog is a powerful, advanced tool for adjusting contrast and color. (See the section on Curves in the Develop section, on page , for more on adjust the curves.)
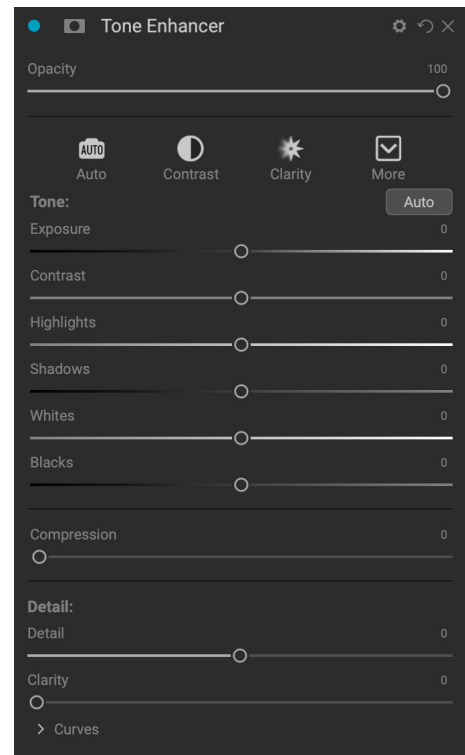
VIGNETTE

The Vignette pane creates flexible vignettes which focus a viewer's eye toward the center of the image by darkening the edges of the frame. The buttons at the top of the pane let you quickly apply a vignette and then customize the look with the advanced controls. Styles apply common vignette types.

- **Brightness**: Controls how light or dark the vignette is.

- **Size**: Controls the size of the vignette.

- **Feather**: Controls the hardness of the edge of the vignette.

- **Roundness**: Controls the shape of the vignette from square to round.

- **Type**: This menu lets you select a Normal, Subtle, or Soft vignette effect. The Priority option will let you preserve highlights when applying the vignette.
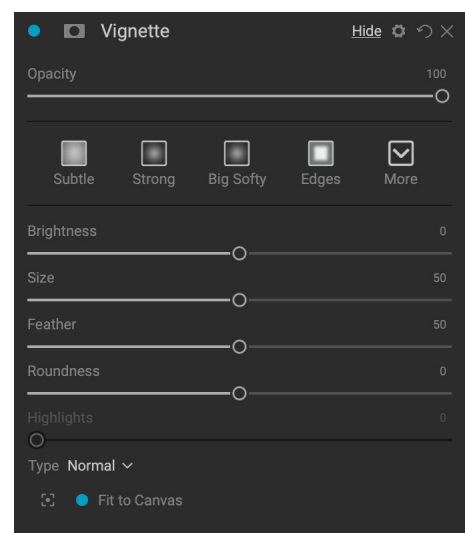
The Center Tool at the bottom left of the pane lets you to select the center point of the vignette. Click on the tool icon to activate and then click on the area in the image you wish to make the center of your vignette.

VINTAGE

The Vintage filter is for adding an aged, vintage look reminiscent of films and photographic papers from the mid-to-late 20th Century.

- **Color**: A drop-down menu of various color styles to apply to your image.
- **Amount**: Controls the overall strength of the filter.
- **Saturation**: Adjusts the saturation of the original image.
- **Film Grain Amount**: Adds film grain to the image.
- **Film Grain Size**: Controls the grain size.
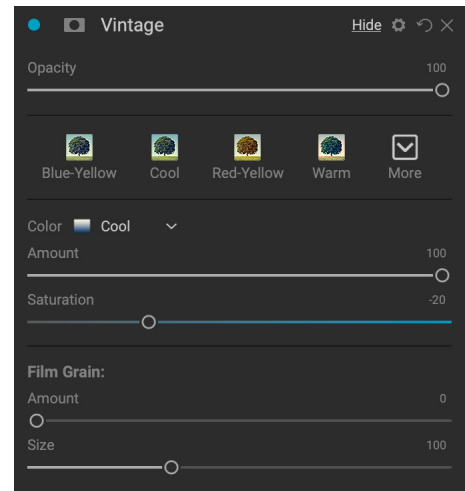
WEATHER

This filter adds weather-inspired overlays to a photo. The Precipitation section at the top lets you add rain or snow overlays, by choosing a type from the Texture pop-up menu. You can adjust the opacity of the effect, and can scale, flip or rotate the overlay via the Transform section of the panel.

You can also add fog effects to a photo. To turn this effect on, raise the Amount slider in the Fog section at the bottom of the pane. The Position pop-up menu includes a number of gradients for applying the effect (choose All to apply the effect to the entire image). Choose the one that is the best starting place for your photo.

The Distance and Transition sliders act upon the gradient, letting you choose the intensity and length of the Position gradient, while the Rotation slider lets you adjust the angle.
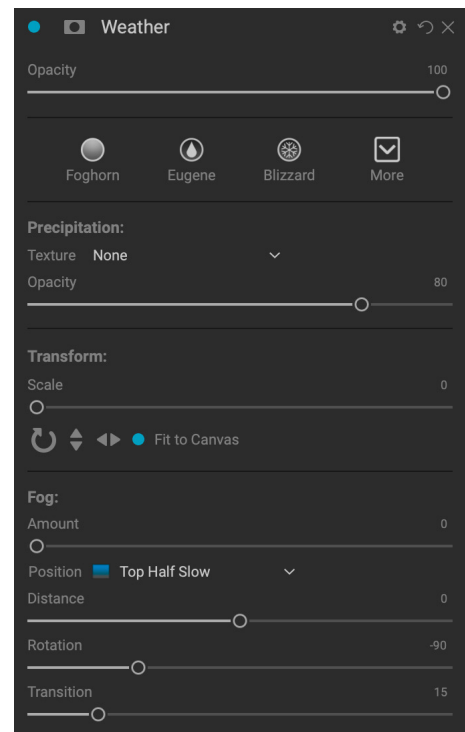
REPLACING SKIES WITH SKY SWAP AI

Replace a lackluster sky (above left) with a beautiful replacement (right) in the Sky tab of the Edit module.

The Sky tab makes replacing or enhancing a dull sky a breeze, by automatically detecting the sky in your photo and masking it out. Once the mask has been built, you can select a replacement from one of the over 100 skies included with Photo RAW, or you can or import your own directly from within the Sky tab.

Photo RAW gives you full control over the mask used to blend the sky and you can use any of the other the masking tools to adjust it as needed. You can adjust the sky to blend better with your foreground, even blur the sky to simulate a long exposure. Not only does it replace the sky, but it can adjust the foreground lighting and color as well as add a reflection of the sky to water found in the foreground.

It's easy to get started with swapping out a sky: in Browse, select an image you would like to put a different sky into and choose Edit in Sky from the File menu, or, if you're in the Edit module, click on the Sky tab. Photo RAW will automatically generate a mask of the sky, and opens the Sky Swap AI panel. There, you can choose from multiple categories of sky images, ranging from sunsets, storms, night skies and much more. If you have your own sky that you'd like to use, you can click the Import button to add it.

Once your original sky has been masked, and you've added a replacement that you like, you use the controls in the Sky Swap pane to fine tune the placement, intensity foreground, lighting (and reflection, if desired). If there are portions of the mask that you'd like to work on, all of Photo RAW's masking tools— with the exception of the AI Quick Mask, which overwrites any mask—are at your disposal.

Lastly, if you would like to continue to work on the sky and foreground separately, just copy the Sky Swap AI mask and paste it into an Effects filter mask, new layer, or local adjustment.

Inside the Sky Swap AI Pane

When you click on the Sky tab, Photo RAW automatically generates a mask of the sky in your current photo and opens the Sky Swap AI pane, which consists of the following sections:

A. **Pane controls:** on/off button (left) turns the replacement on or off; Mask view (right) opens the Mask options section for fine-tuning the mask. (See "Masking control options" on page 104 for more.)

B. **Reset button:** returns the Sky pane to its original state.

C. **Styles section:** for choosing a specific preset sky from within one of the categories, or create and apply your own style via the More menu.

D. **Sky selection area:** includes pop-up menus for the different sky categories, and the skies that are part of the currently selected category.

E. **Import button:** launches the Extras Manager (see page 9) for importing skies directly into Photo RAW.

F. **Position:** lets you shift the horizon line of the new sky, set the opacity of the sky, fade and shift the edge of the mask, and scale the size of the new sky to better fit the final image.

G. **Appearance:** sets the warmth and brightness of the replacement sky, applies dehaze, and lets simulate motion by blurring the clouds and setting the blur angle.

H. **Foreground Lighting:** lets you adjust the intensity and color of the light on the foreground.

I. **Foreground Reflection:** when working with images that have bodies of water in the foreground, you can add a reflection, adjusting both the blending mode and the amou
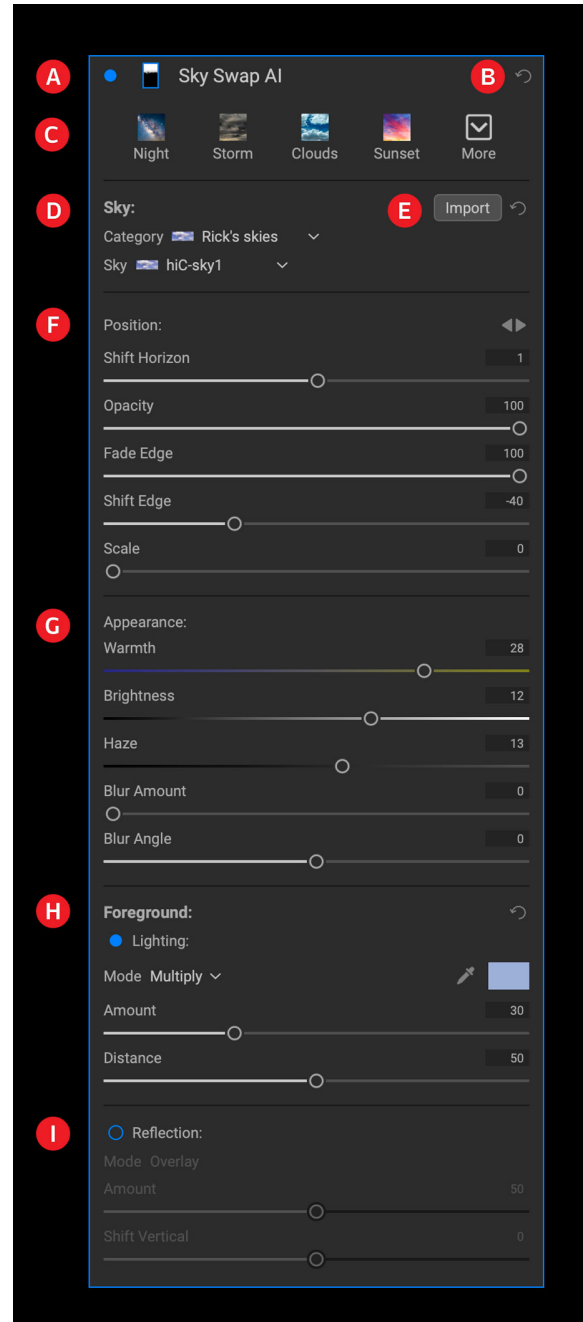
THE POSITION SLIDERS

After you've chosen your sky from the Category and Sky pop-up menus, use the Position section to adjust the placement and the blending of the new sky. You can flip the sky horizontally—which can be helpful when you wish to change the direction of the light in the sky to match the foreground—by clicking on the triangles to the right of the Position label. The Shift Horizon slider will move the imported sky up or down inside the masked area, while the Fade Edge and Shift Edge sliders can be used to blend the new sky more

realistically with the foreground. The Opacity slider will default to 100, which means that none of the original sky will show through, but you can lower the opacity to blend the new sky into the image as well.

The Scale slider will enlarge the new sky's size inside the mask, which you might do because you want to add some drama with larger clouds, or want to emphasize a specific group of clouds, or because the size of the size of imported sky doesn't quite meet the boundaries of your original image.

THE APPEARANCE SLIDERS

The sliders in the Appearance section adjust the look of the replacement sky to help better match the sky with the existing foreground, and their purpose is straightforward. The Warmth slider lets you apply a warmer or cooler look to the new sky, while Brightness adjusts the luminance of the sky, making it brighter or darker. Moving the Haze slider to the left removes haze or fog from the sky (by adding contrast), while moving it right will enhance it.

The Blur Amount and Blur Angle sliders let you apply a motion-blur-style effect to the clouds in the replacement sky, to simulate a long exposure.

THE FOREGROUND SLIDERS

As the name of the section implies, the Foreground Lighting and Reflection sliders apply their settings to the foreground and help further blend the new sky realistically into the scene. To turn on one of the groups, click the on/off button to the left of the Lighting and Reflection labels.

The Lighting sliders attempt to apply some of the color of the light in the replacement sky to the foreground. By default, when you turn the Lighting section on, Photo RAW will automatically sample a color from the sky and apply a slight color fill effect to the foreground. If you'd like to change the color, click on the eyedropper icon next to the color patch, and choose another. The Amount slider sets the intensity of the light, while the Distance slider adjusts the effect to fill more or less of the entire foreground, almost like a gradient.

There are two blend mode options you can use when adjusting the lighting: Multiply and Screen. Multiply will darken the lighting effect, while Screen will lighten it.

The Reflection group is designed for those times when you have a body of water in the foreground, and wish to blend in a slight reflection of the sky into the foreground.

This option includes a few more of Photo RAW's blending modes, and you'll find that different modes work better than others, depending upon the scene. (See "Blending Modes" on page 137 for more information on the various blending modes used in Photo RAW and their usage.

The Amount slider adjusts the intensity of the reflection, while the
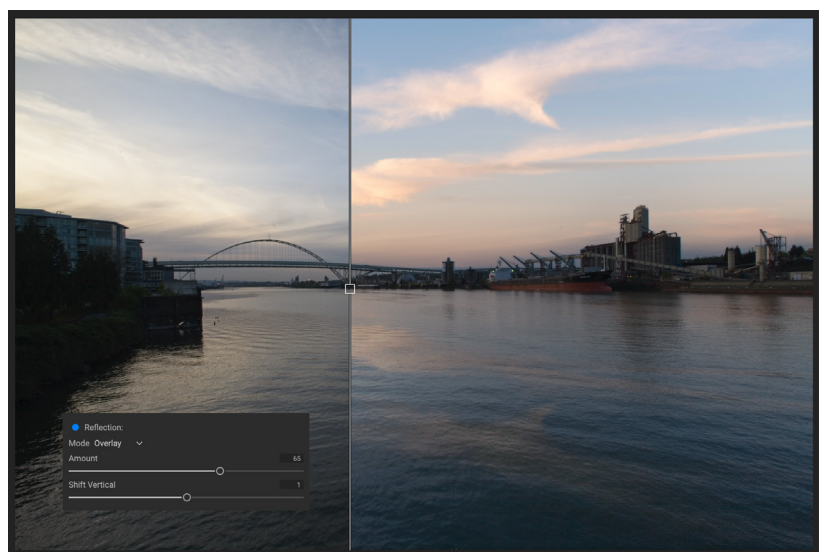
The Reflection option in the Foreground section of the Sky Swap AI pane is designed to add a reflection of your replacement sky to water in the foreground (shown on the right above in split-screen preview mode), even if it's not completely calm.

Shift Vertical slider works in a manner similar to the Shift Horizon slider does in the Position section of the Sky Swap pane: it moves the reflection of the replacement sky up or down across the foreground area.

Generating Realistic Sky Replacements

Adding a new sky to an image is easy, but getting a sky that looks like it belongs in the image is another thing. Here are a few tips for creating realistic-looking sky replacements:

- Quite often, the biggest issue in replacing a sky is matching light, whether it be the direction of the light cast by the sun, or the time of day. As you work through the list of skies looking for a replacement, ask yourself if the movement of light makes sense in the blended pair. Sometimes, you can use the Flip Horizontal toggle in the Position section of the Sky Swap pane to fix a directional issue; other times, the potential replacement sky, as much as you wish it to work, will just look out of place.

Paying attention to light, and its direction, is one of the keys to getting realistic-looking sky replacements. As pretty as the as the sunset sky is (top left), the direction of the light in the foreground (from behind and to the left) is all wrong for the sunset. The sky on the top right is a bit better fit, but the sky's light is coming from the right, which clashes with the foreground. Flipping that sky (bottom left) makes it feel more integrated, but it still feels a bit dark for the scene, even when adjusting the Brightness slider. Choosing a sky taken at roughly the same time of day (bottom right) feels more harmonious with the foreground, and, with a little bit of adjustment in the Sky Swap pane, ends up looking fairly realistic.

- It will be rare that you pop a sky into an image and that it works perfectly. If the light does seem to fit, play with the controls in the Position, Appearance, and Foreground sections to get a better sense of how the sky works in the scene.

- As you play with different skies and are trying to get a sense of how one works better than another, make use of Photo RAW's Undo capability; better yet, work with the History pane (see page 76) to jump back and forth between different places during your editing session.

- Don't forget to pay attention to the mask. While the Sky Swap AI technology is excellent, it won't be perfect in every instance. Use Photo RAW's masking tools to refine and adjust the mask in places where your sky might intrude into the foreground or vice versa.

- Use the mask! Copy the mask and use it in your finish editing elsewhere in Photo RAW. For example, you might want to apply a Dynamic Contrast filter to your foreground, but know that the filter will not look great on the sky. Copy the mask from the Sky Swap AI pane by choosing Copy Mask from the Mask menu, then open the Dynamic Contrast filter in the Effects tab and choose Paste Mask from the Mask menu. Because the mask's contents are set to the sky, you'll want to also choose Invert Mask from the menu. Once you do that, the filter's settings will only be applied to the foreground. You can copy, paste and invert the mask as many times as you'd like.

You can easily copy and paste your Sky Swap AI mask and apply it to other places inside Photo RAW. Here we pasted the mask into a Dynamic Contrast filter in Effects, and inverted the mask so that the filter would only be applied to the foreground.

- Shoot your own skies and import them via the Extras Manager. When you're out and see a gorgeous sky, photograph it with as much of the sky as you can catch. Because you'll have shot the sky, you'll have a better idea of the lighting direction and time of day, which will be quite helpful when you are trying to match a sky.

- Finally, remember that, like all other aspects of Photo RAW, everything done in the Sky tab is non-destructive and re-editable. If you don't like your replacement, or need to tweak its settings as you apply other edits, click on the Sky tab and your work will still be there. (And you can always get back to your original image's sky by resetting the Sky Swap AI pane.)

RETOUCHING WITH PORTRAIT AI
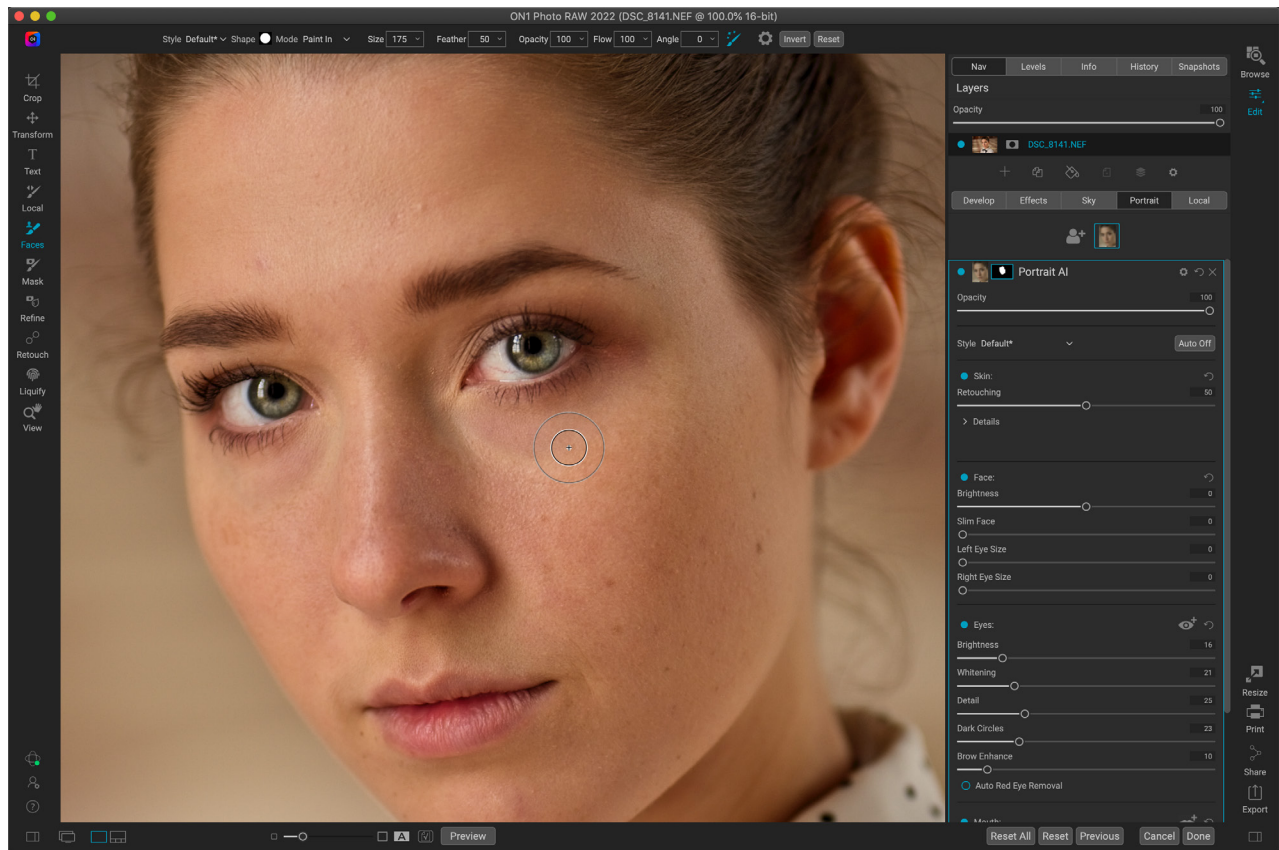
Portrait AI was designed to help you retouch faces quickly and naturally, and with as little user intervention as possible. When you open a photo in the Portrait tab, Photo RAW automatically finds each face in your photo, analyses it individually, and adds just the right amount of retouching, based on your preferences.

Despite all the automation, you have full control over all aspects of retouching and finishing. Each face in your photo has independent settings and adjustments. You can manually adjust eye and mouth positions in each face, paint to refine the skin mask and use brushes to remove blemishes.

Portrait AI's skin retouching uses frequency-separation techniques, which help to maintain natural skin texture while reducing color and tonal changes across the skin. It creates flawless, natural-looking skin.

In addition to skin smoothing and blemish removal, you can use Portrait AI to correct common errors in lens choice and lighting by adding fill-light to brighten the face or resculpt the face to thin the jawline. You can even adjust the eye size on each individual face.

The whites of eyes can be brightened and the iris can be sharpened, and there are automatic red eye removal options as well. You can easily brighten the smile and adjust the color and saturation of the lips.

Portrait AI is easy to use: Faces tool in the Tool Well can be used to paint skin in or out—and the Portrait pane that contains settings for adjusting the skin, eyes and mouth in a face. Each face in your photo has its own pane, so you can adjust each face on an individual basis.

Inside the Portrait Pane

Each face in a photo will have its own Portrait pane, which contains the mask for the face, and settings for smoothing the skin, and adjusting aspects of the face, eyes and mouth.

You can view a face's pane by clicking on the appropriate photo at the top of pane. (You can change the name of each pane by double-clicking on the 'Portrait AI' label at the top.) The top of the pane has the following items:

A. **Face selection:** This includes the Add Face button and any faces found (or added) in your photo. Clicking on the face will select that face's portrait pane.

B. **Face and mask icons:** The first icon is a small representation of that pane's face, to help with identification in photos that have many faces in them. The mask is for that person's face. To turn off all of the settings for that pane (to preview that face before and after, for example), click the control circle to the left of the face. If the circle is empty, it means that the adjustments are not currently applied.

C. **Blending options, Reset and Delete:** These icons are for changing the blend mode, to reset the pane to its original state, or to delete that portrait layer altogether.

D. **Opacity:** Sets the overall opacity of the pane's settings.

E. **Style:** Pop-up list of preset settings for that pane. The Default style uses Portrait's Auto AI technology applying either Subtle or Strong retouching. (Subtle is the default AI approach, but this can be changed to Strong in the General Section of the Preferences window.) You can also save your own styles, based on individual preferences.
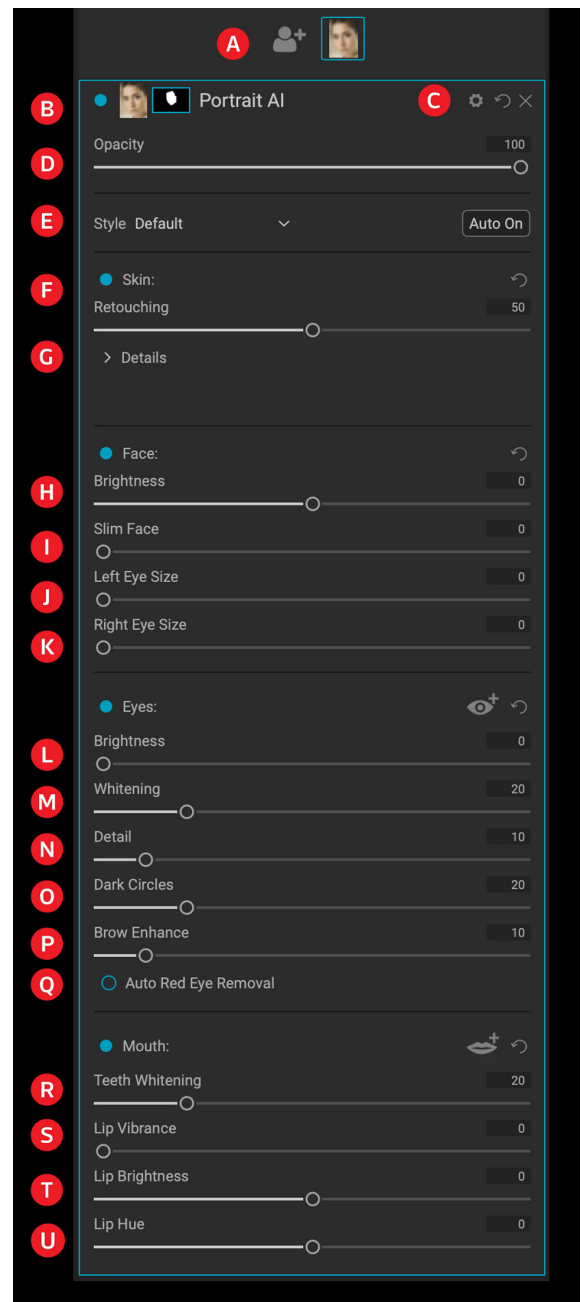
The bottom part of the Portrait pane includes four sections: Skin, Face, Eyes and Mouth. Each section has an on-off control circle immediately to the left of the label, which can be helpful if you don't need to retouch the skin or the eyes, for example. The Skin section settings include:

F. **Retouching:** The amount of skin retouching, based on Portrait's AI analysis of the face.

G. **Retouching Details:** Clicking the triangle will give options for further adjustments to the overall skin retouching. (See for information on the options in the Details section.)

The Face section has four adjustments:

H. **Brightness**: Adds to or removes brightness from the current face.

I. **Slim Face**: Resculpts the face, slimming it along the jawlines.

J. **Left Eye Size**: Increases overall the size of the left eye.

K. **Right Eye Size**: Increases overall the size of the right eye.

The Eyes section has five adjustment options:

L. **Brightness:** Brightens the entire eye area; can be helpful when your subject is wearing a hat.

M. **Whitening:** Whitens the eyes.

N. **Detail:** Adds sharpness to the pupils.

O. **Dark Circles**: Brightens circles and/or bags under the eyes.

P. **Brow Enhance**: Darkens the eyebrows.

Q. **Auto Red-Eye Removal:** Clicking this button will apply red-eye removal to the eyes.

Clicking the icon to the right of the Eyes label will display an overlay with the eye control points when you move your cursor over the face. (See page 165 for information on adjusting the eye overlays.)

The Mouth section has four settings:

R. **Teeth Whitening:** Whitens the teeth.

S. **Lip Vibrance:** Increases the color in the lips.

T. **Lip Brightness:** Adjusts the brightness of the lips.

U. **Lip Hue:** Adjusts the hue of the lips.

Clicking the icon to the right of the Mouth label will display an overlay with the mouth control points when you move your cursor over the face. (See page 165 for information on adjusting the mouth overlay.)

DETAILS

Most of the time, Portrait's automatic AI-based skin-retouching algorithms should do a good enough job that you shouldn't have to do much more than adjust the strength of the Retouching slider to dial in your final settings (if at all). If you wish to adjust some of the parameters in the Skin section, click the Details triangle, and you'll see a set of controls under the Frequency Separation section.

These options include:

- **Blemishes** smooths facial elements, like fine lines and wrinkles.

- **Detail** brings back some detail that might have been lost in the smoothing process.

- **Smoothing** applies additional skin smoothing.
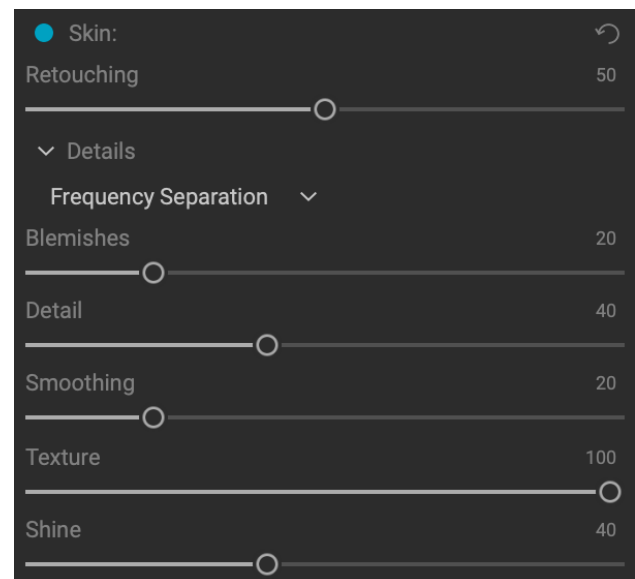
Clicking the triangle to the right of the Details label will open an additional set of controls you can use to fine tune the smoothing of the currently selected face.

- **Texture** controls the amount of artificial texture applied as an overlay to the face.
- **Shine** lessens hot spots, evening out the skin's tones.

> **NOTE:** The Details pop-up contains two options, Frequency Separation and Surface Blur. The Surface Blur option is based on previous versions of ON1 Photo RAW, and is solely included to provide backward-compatibility with presets created for those versions.

Portrait AI Workflow

Portrait AI was designed to automatically give you perfect retouching every time you open an image. As such, the basic workflow, for most images you will work with, is relatively simple:

1. Perform basic global edits in Develop (or your chosen image editing app, when using Photo RAW as a plug-in). This includes tone and color adjustments, as well as any noise reduction and lens correction. It's best to leave sharpening to the final stages of editing.

2. Go to the Edit module and click on the Portrait tab, or, when using as a plug-in, choose Portrait AI from the appropriate menu in your editing app.

3. Go through each individual's portrait pane and adjust individual settings as desired.

4. Use the retouching tools to remove or repair blemishes.

5. Apply any manual adjustments to the skin mask, or reshape the eye and mouth overlays, if necessary.

SUBTLE VS. STRONG PROCESSING OPTIONS

When Portrait AI applies its automatic retouching to a face in a photo, it uses one of two AI-based processing options, Subtle and Strong. As its name implies, the Subtle setting—which is the default option—opts for a lighter touch when retouching. Strong applies a bit more processing than Subtle, but it still shouldn't be over the top. Some situations might call for the Strong setting, or you might find that you prefer that setting.

To change the default option, go to the General tab of the Preferences window, and choose the option you wish to use in the Portrait AI Default pop-up (see).

WORKING THE INDIVIDUAL PORTRAIT PANES

Once Portrait has found the faces in your photo, select each face in turn by clicking on it in the face section at the top of the Portrait AI panel, or click on the pane itself. Work your way down the pane from the Skin section at the top, down to the Face section, and on to the Eyes and Mouth at the bottom. Making broad movements of the different sliders can give you an idea of how a setting gets applied, but be careful in making adjustments too strong, which can give your models a plastic look. Work in 100% view, so you can see the effects of your changes up close.

Portrait AI generally will do a good enough job in the basic skin smoothing and retouching that you

shouldn't have to dig into the Details section; adjusting the Retouching slider left or right should often be all you need to do to fine tune the skin.

> **NOTE:** When working with multiple faces, you can name each Portrait layer individually by double-clicking on the word 'Portrait' in the title bar.

USING THE RETOUCHING TOOLS

If you have portions of a face that have specific retouching needs (blemishes and other marks), use the Perfect Eraser, Retouch Brush, Clone Stamp or Healing Brush to make those changes. (See the Retouching Tools section, starting on page 98, for detailed information using on working with these tools.)

MAKING MANUAL ADJUSTMENTS IN PORTRAIT AI

Portrait uses sophisticated technology to find faces, but it's not always perfect. Luckily, you have some tools to use to make further enhancements or adjustments beyond the controls in the Portrait pane. These include adjusting a face's mask, to add or reduce the area that the retouching applies to, or making small adjustments to the areas around the eyes and mouth. In some very rare instances, you might find a 'face' that really isn't a face, or that Portrait was unable to find a face.

Fine-tuning a face's mask

To keep Portrait's retouching localized to each face, the app builds a mask for the face. Only inside the contents of the mask are the parameters of that face's portrait pane applied. The rest of the image is 'masked out,' meaning that the adjustments don't apply to those pixels. The mask is represented by the mask icon at the top of each pane.
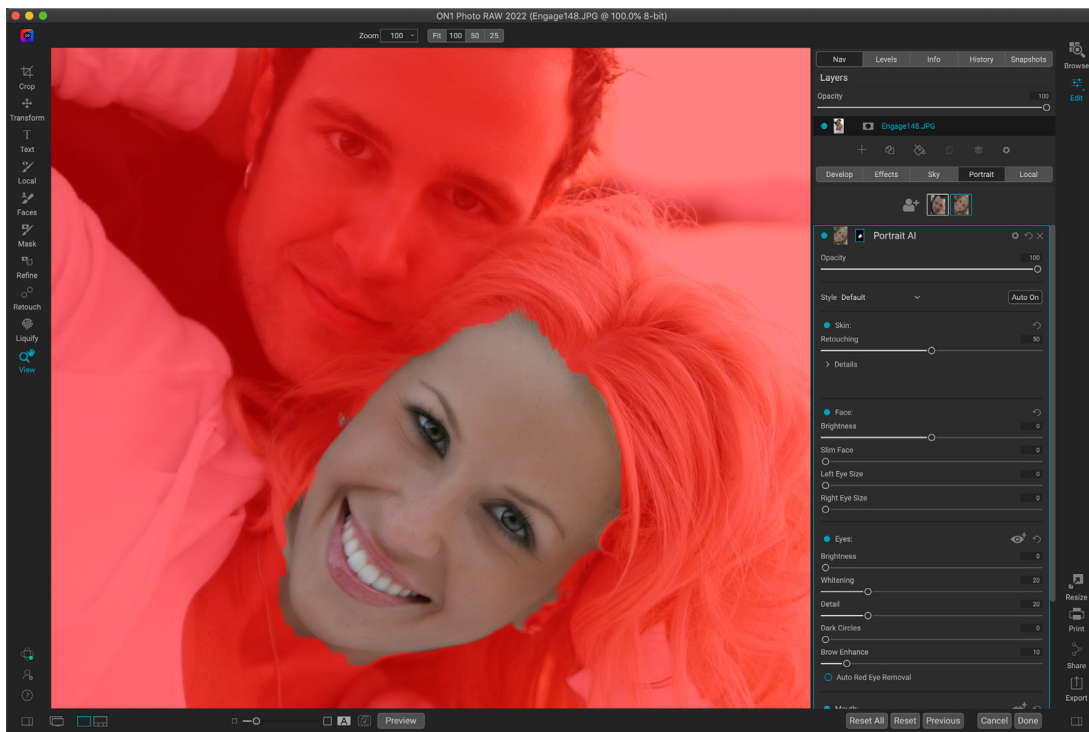
If you want, you can fine-tune a face's mask retouching by painting skin in or out on your model as necessary with the Portrait AI brush. To view the mask, click the View Mask icon at the bottom of the window.

When building a face mask, Portrait AI looks closely for the general contours of the face, but doesn't include other skin. You might want to smooth some skin under the chin or on the neck, or you might want to paint out some areas—hair over the forehead—from the mask, so that they won't be softened.

You can view the mask for each face by selecting the appropriate pane and clicking the Show Mask icon at the bottom of the main Portrait AI window (to the right of the Before/After button). This will display the mask for the face, with a red overlay representing the area untouched by that pane's settings. It will also select the Portrait AI brush, which you can use to 'paint in' more skin (enlarge the area), or 'paint out' areas that you might not want to have retouching applied.

Next, you set the painting mode (Paint In/Paint Out), brush size, feathering, and opacity to make the changes to your mask. Performing your brushing with the mask view turned on helps show your progress. Use the Option key (Mac) or Alt (Windows) to change the brush mode in real time, to paint in and out with ease.

Adjusting the skin mask works best with the view mode on, and at 100% view (or larger, in some instances). When you're done refining the mask, choose another tool and click the View Mask icon at the bottom of the screen to turn the mask off.

Working with eye and mouth overlays

Portrait AI does an excellent job finding the eyes and mouth for each face in a photo, even three-quarter and side shots. For each feature, Portrait creates an overlay that functions similarly to the face mask. The eyes (or eye, if only one is in the photo) and mouth overlays define the boundaries of those features, and only the controls in the respective sections of each face's pane are applied to those areas.

To view the different overlays on a face, click on either the Eye or Mouth icon to the right of that section's label. When you move your cursor over the face, you'll see the overlay for that feature.

Each overlay consists of a nodal point (in blue) and control points that define the boundaries of each feature. You can rearrange or modify the overlays: clicking and dragging the point lets you adjust the center of the overlay; clicking and dragging on any control point lets you readjust the boundaries of that area.

Clicking the icon to the right of the Eye or Mouth label in a portrait pane will display the overlay for that feature. You can adjust the control points for each overlay by clicking and dragging them to reshape the area.

The mouth overlays are a bit more complex than the eye ones; they include control points for the top and bottom of each lip, which lets you adjust for the teeth. In most cases, you won't need to adjust the overlays, but if you feel that you could get a better mask for either the eyes or the mouth, it's best to zoom in fairly close, so you can adjust the overlay precisely.

Dealing with missing or 'ghost' faces

In the rare instance when Portrait doesn't find one of the faces in your photo, click the Add Face button at the top of the Portrait tab. Then, position and size the box around the face you wish to add, and press Return, and the portrait pane will be created (and selected). When adding a face in this manner, you'll need to manually add the eyes and mouth, and enable the different sections of that face's pane.

To add the eyes, click on the Eye icon to the right of the label. Then click the cursor in the center of each eye. When you're done, Portrait will create the overlay for each eye, and you can readjust them as necessary.

Adding the mouth is similar; click on the icon to the right of the Mouth label, and click on the corners of the mouth. Portrait will create the overlay, and you can adjust the control points to fit the contours of the mouth as needed.

Once you've added the eyes and mouth, you can work through the pane in the same manner you would with an automatically generated face.

Sometimes, you'll find a pane that's been generated for something that clearly is not a face. If you find one of these 'ghost' faces, right-click the ghost icon at the top of the Portrait AI panel and choose Delete Face.

LOCAL ADJUSTMENTS

You can easily make local adjustments to portions of an image in ON1 Photo RAW 2022. You can apply these adjustments using either the Adjustment Brush or the Adjustable Gradient (or both, if desired). You can create as many local adjustments as you need on an image (by clicking on the Add Layer button at the top of the Local Adjustments section).

Local adjustments can be used to apply a gradient filter to darken a sky, for example, or to add a more complicated vignette to an image. Local adjustments are in essence a mask that is applied to a portion of your image, and you can manipulate those masks in powerful ways with both the blending modes and the luminosity options in the Local tabs.

Operations you can perform with local adjustments include tone (exposure, contrast, highlights and shadows, detail), color (white balance, saturation and vibrance) and detail (structure and noise). Each local adjustment layer can have completely different settings and work on different parts of your image. You can also use local adjustments to paint with color over part of a photo, to perform specialized tasks such as skin retouching or to replace the color of an object.

Like the rest of the Edit module, local adjustments are independent from the Develop, Effects and Portrait tabs; you can create a local adjustment while working in Develop, switch to Effects, and when you click on the Local tab, your local adjustments remain intact.

LOCAL TAB

To create a local adjustment, click on the Local tab. If there are no local adjustment layers present, Photo RAW will add one. If you want to add additional adjustment layers, click the Add Layer button. The top of each adjustment layer includes the following options:

- **Opacity**: Sets the opacity of the adjustment.
- **Styles**: The pane has a number of canned styles for you to start with, including ones for lightening or darkening (dodging and burning), adding vibrance, fixing teeth or red eye, and many more. (You can also save your own styles via the More pop-up menu.)
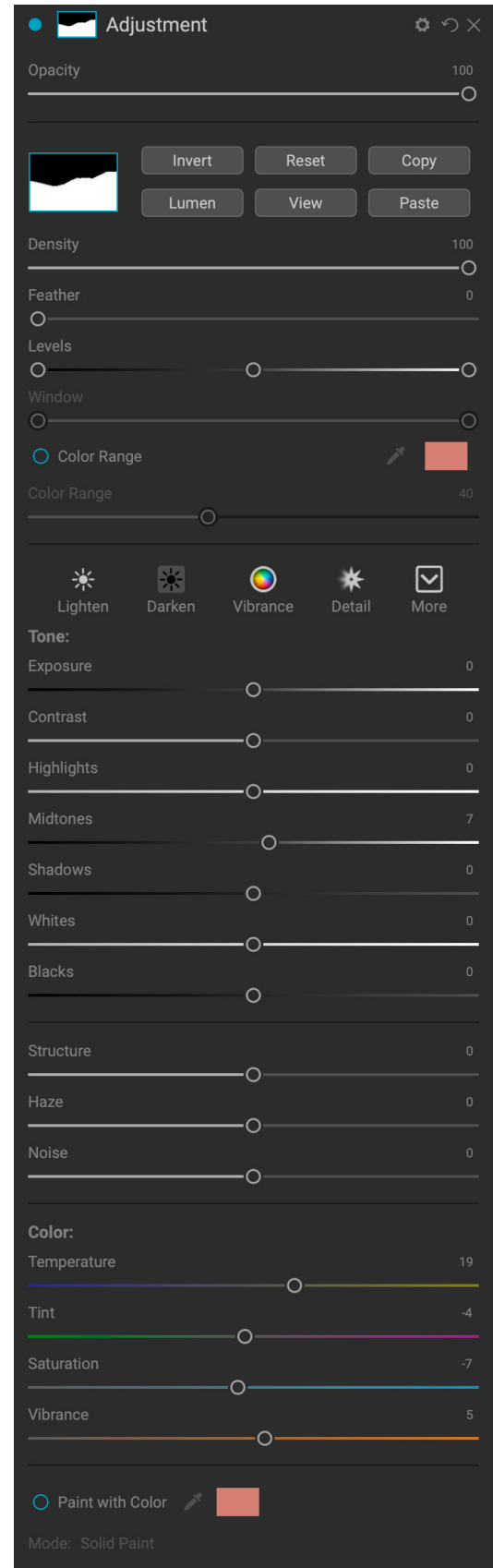
The main section of the Local tab has all of the same options found in the Tone & Color pane in the Develop tab: Exposure, Contrast, Highlights, Shadows, Detail, and Color Temperature, Tint, Saturation and Vibrance. In addition to those settings, the local adjustment pane includes a Noise slider, designed to help reduce noise on a targeted level (most often seen in the shadows).

These controls work the same way inside the Local Adjustments panel. One difference is that, since a local adjustment is actually a layer that sits on top of your global adjustments, ON1 Photo RAW 2022 provides you with a number of blending options for each adjustment. Blending modes determine how the selected layer blend with the items below it in the image stack.

The Manual Spacing option is key when using custom brushes as stamps.

> **TIP:** You can name each adjustment layer by double-clicking on the word 'Adjustment' in the pane. This can be helpful when you have a lot of adjustment layers and wish to remember which adjustment did what.

Click on the Blending Options gear icon at the top of the Local tab to drop down the Blending Options. The blending option controls are:
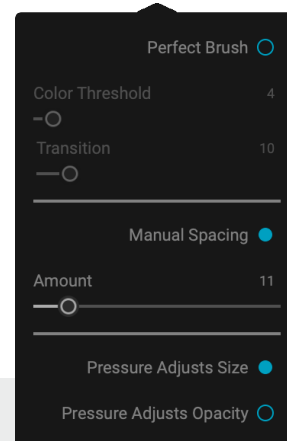
- **Blending Options**: A pop-up list of blending modes. There are 24 common blending modes available in the list, including Normal, Lighten, Darken, Screen, Multiply, Soft Light, Hard Light, Overlay and Color.

- **Apply To**: This lets you apply the blending mode to a specific color or tonal range. The options are; All (the default), Highlights, Midtones, Shadows, Reds, Greens, Blues, Magentas, Cyans, Yellows, Flesh Colors, Vivid Colors and Neutrals. (You can also manually choose a color range by selecting the Dropper Tool in the pane and clicking on a color in your image.)
  When you choose one of the options in this menu, the adjustment is only applied to that part of the image that is based on the lightness, hue, or saturation range specified. The Range slider expands or contracts the selected option, and the Highlights, Shadows, and Skin sliders protect those settings from your adjustments.

The Adjustment pane's Blending controls give you extensive options for applying local adjustments to targeted tonal and color ranges in an image.

For detailed information on how the various blending modes work, see

Painting with Color

The Paint with Color option at the bottom of the local adjustment panel lets you use the Local Adjustment brush to select a color and paint it into your image. It is designed for two situations: when you wish to apply
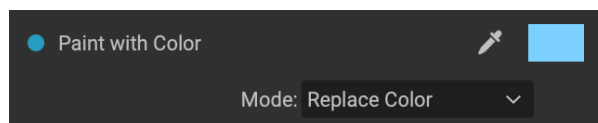
softening (or evening out) to portions of an image by blending existing color, and to replace the color of an existing object.

The Paint with Color section has three options, Solid Paint, Replace Color, and Classic, and a color swatch for the chosen color. You can choose a color from your image by clicking on the eyedropper icon, or you can click on the swatch and choose a color from the system color picker.

Solid Paint will paint over anything you brush with the chosen color; think of it as painting with a Normal blending mode. Replace Color will replace the hue, but not the luminosity, of the color you are brushing over; it is essentially painting with a Color blend mode, in which whites are preserved.

The Solid Paint option is an ideal skin softening tool; use the eyedropper to select a midtone section of skin, and, using a low opacity setting, paint over parts of the skin with the brush. This option is also useful when you are using custom brushes to add overlays to a photo. See page 170 for more on this.

WORKING WITH LOCAL ADJUSTMENTS

When adding a local adjustment layer, click on the tool you wish to use in the Tool Options bar at the top of the window. The Adjustment Brush is perfect for working with specific subjects or areas in an image: a person or primary object that you wish to brighten, shadow areas that you wish to darken, and more. It works in the same manner as the regular Masking Brush: you set the paint mode (in or out), brush size, feather and opacity, and brush in the areas you wish to paint an effect in or out.

The Adjustable Gradient is designed to apply a gradient mask over a section of an image: most commonly to darken a sky, for example. Because the local adjustment tools are for working on a mask, you have all of the masking and blending options you have throughout Photo RAW, and you can use one or both tools—in addition to the Refine, Chisel and Blur Mask tools—to refine your adjustment mask as desired.

To apply a standard gradient to a local adjustment, click on the tool, then click in the image roughly where you wish the effect to be. You'll see the outline of the gradient, which is called a bug. You can use the handles on the bug to move your gradient, increase or decrease the length of the gradient, or rotate it.

You can change the gradient shape via the Tool Options bar: in addition to the standard dark-to-light horizontal gradient, you can also create a circular gradient and a reflected gradient, which is like the horizontal gradient, but goes from black (no effect) at the outer edges to white (full effect) in the center.

> **TIP:** To see the mask created by the Adjustable Gradient, choose Show Mask from the View menu.

Manipulating a gradient mask

Once you've added a gradient to an image, you can modify it by accessing the parts of the gradient overlay:

- To move a gradient, click on the big circle at the center of the gradient and drag.

- To resize a radial gradient, click and drag on the solid line.

- To adjust the feather (hardness) of the mask,
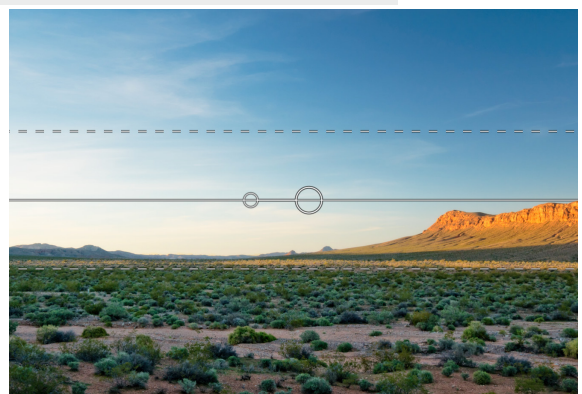
click and drag along the dashed line.

- To rotate the mask, click the smaller circle near the gradient center and drag.

When working with local adjustment masks, all of the tools in the Refine group—the Refine Mask, and the Chisel and Blur tools—can be used to help give you create smoother and more realistic masks.

Other masking options

Every local adjustment has its own mask, and it uses the same masking options and controls found in throughout the Edit module. To access the mask, click on the mask icon in the title bar of the local adjustment layer. There you can copy and paste masks, create luminosity masks, and create masks based on color ranges. For specific details on how to work with these masking options, see "Masking Basics" on page 102.

USING CUSTOM BRUSHES TO ADD OVERLAYS TO PHOTOS

Using custom brushes, available via the Brush Shape pop-up in the Adjustment Brush's Tool Options bar, you can easily add realistic shapes as overlays to your photos.

One specialized use for local adjustment layers and the Paint With Color's Solid Paint option is to add overlays with custom brush shapes. You can paint in stamps, watermarks, and other shapes to create specialized creations or enhanced photos. For example, you could use a custom cloud brush to add interest to a lackluster sky, or you could create your own watermark and apply it precisely. Photo RAW comes with a collection of custom brushes of all kinds, and you can import any black-and-white TIF file or Photoshop-compatible brush file (.abr) for use in the app, via the Extras Manager (see "Extras" on page 9).

Creating basic overlays with a custom brush is easy:

1. Create a new local adjustments layer by clicking on the Local tab.
2. If the Adjustment Brush isn't selected in the Tool Options bar, select it, and choose a new

brush from the Shape menu in the options bar.

3. Set the brush size and angle. In general, you'll want to keep the Opacity and Flow high, and the Feather low (or 0), but that will depend upon the brush and the application.

4. From the gear menu, turn the Manual Spacing option on. Depending upon the brush type and the application, you'll have to play with the Amount slider, but the general rule of thumb is, for stamped brushes, where you wish the shape to be applied singly, set the spacing low. If you wish to apply the brush multiple times with a stroke—and have clear definition between the brush shapes—set the spacing higher (see the spacing chart below for an illustration of the different settings).

5. Turn the Paint With Color option on and set to Solid Paint. Choose a color for brush, and paint as desired on the image.

Tips for using custom brushes

- The best way to begin working with brush overlays is to practice. Use some of the default brushes, and play with them by adding them to a photo or blank canvas.

- Use the Brush Styles option (in the Tool Options bar) to save your favorite brushes and their optimal settings.

- The maximum brush size in Photo RAW is 2500 pixels.

- If you're applying a brush as a single stamp here and there on a photo, start with a feather of 0, and Opacity and Flow set to 100. Once you've set your brush size and angle, click once on the image.

- The Paint With Color option applies to all brush strokes made on that adjustment layer. You can easily change the color via the color patch in the panel. If you want to apply the same stamp with different colors, create a new adjustment layer for each color.

Manual Spacing 100

Manual Spacing 75

Manual Spacing 50

Manual Spacing 25
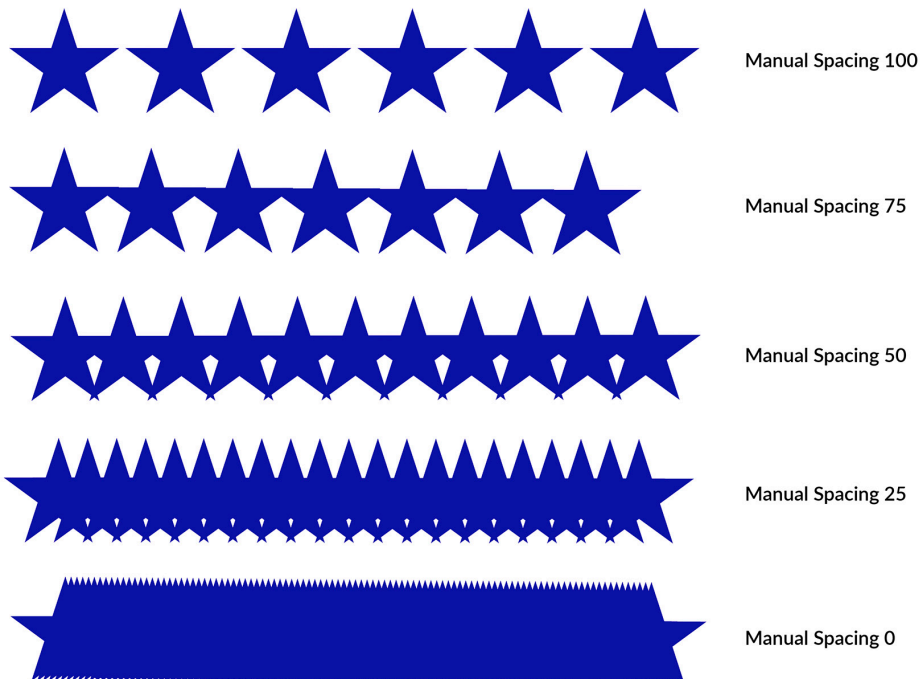
Manual Spacing 0

This chart shows the effect of the Manual Spacing on a brush stroke for a star custom brush. With a spacing of 100, as you stroke, the stroke will be applied with plenty of space between the brush shape. With a spacing of 0, the shape will meld together as you apply the stroke. Depending upon the brush type, this might be acceptable for your purposes.

PART 4: COMBINING PHOTOS WITH ON1 PHOTO RAW 2022

For many photographers, editing in post-production doesn't just mean working on a single image at time. When shooting out in the field they might capture multiple shots of a scene, to blend them later to achieve a greater dynamic range, to create expansive panoramas, or to build a perfectly focused scene from front to back. Or, they might be interested in creating sophisticated composites that can only be created within a layered workflow. For those photographers, ON1 Photo RAW 2022 includes a full set of combination tools to help them achieve their photographic vision with ease:

- **Layers:** Photo RAW's Edit module offers a full layered workflow, letting you create collages, perfectly blended composites from multiple images, and much more. (See page 173.)

- **Panorama:** The Panorama feature can create amazing, expansive views of a scene from two to 25 photos blending them together into a seamless whole. It can even create great panos from a handheld set of shots. You can even batch process a group of panorama shots. (See page 181.)

- **HDR:** This feature takes a group of photos shot at different exposure values and blends them to create photos that include a wider range of tones—from deep shadows to bright highlights—than can be achieved with a single shot. Like panoramas, Photo RAW's HDR feature supports batch processing. (See page 184.)

- **Focus Stacking:** Like the HDR feature, Focus Stacking takes multiple shots of the same scene, each shot with a different focus point, and blends them together into a perfectly focused final result. (See page 187.)

- **Time-Lapse:** Create beautiful, flicker-free time-lapse videos from sequences of still photos. (See page 189.)

As is the case with all of the editing functionality in ON1 Photo RAW 2022, these features work non-destructively. Your original photos are not changed, and the resultant, blended photos have all the re-editability found throughout Photo RAW.

WORKING WITH LAYERS

The Layers feature inside ON1 Photo RAW 2022 is fully non-destructive. This means you can use all of the Edit module's tools, tabs and filters, along with layer-independent masking capabilities, and still preserve your original photos—and can come back at any time to further enhance your creations.
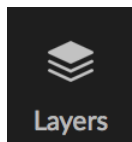
The Layers functionality inside ON1 Photo RAW 2022's Edit module lets you create quick composites, blend multiple images together, paint in new skies or backgrounds, align layers based on their content, and much more. And, because Layers is tightly integrated within the Edit module, all of your work remains re-editable at all times: you can go back and add, change or update any setting made inside the Edit module, on any layer.

You can combine multiple photos or copies of the same photo as layers. Each layer can be moved, sized and masked on its own. But more than that, each layer has its own non-destructive settings—just like any photo in Photo RAW, all the way back to the original raw data. That means you can use all of Photo RAW's editing features—basic exposure changes, camera profiles, portrait retouching, Effects filters and more—as part of a layered photo.

When you add a layer to a photo, Photo RAW automatically creates a new document with an .onphoto extension, leaving your original photo intact. This document type, which is visible inside Browse, contains all the layer information and non-destructive editing operations made inside Photo RAW. (For information about the implications of using layered files with ON1 Cloud Sync, see page 180.)

When you create a layered photo, it is saved as new, non-destructive .ONPhoto. This contains the full raw data for each layer you add. It is re-editable in ON1 Photo RAW and may be exported to other formats.

☐ Don't show this message again   Cancel   Add Layer
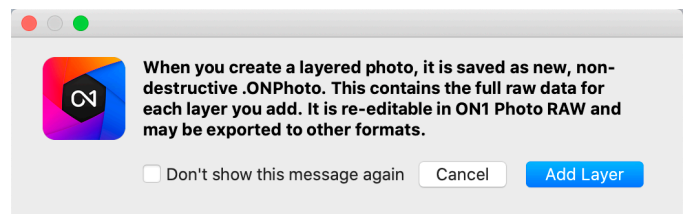
Layers can be as simple as copies of the current photo, to apply more complex adjustments to portions of an image than you could with local adjustments. You can also add other documents as a layer inside the current document, for replacing skies or other backgrounds, for adding textures, or for when you wish to create complex collages. Photo RAW supports up to 14 layers in a document.

Once you have added a layer, the entire Edit module is available for that layer. When you click on a layer, you can add any adjustment from the four edit tabs, create masks, and more. You can use the Transform tool to move, rotate, and scale the contents of a layer independently from the complete document. (Because the Crop tool works at the document level, you can't crop individual layers.)

ADDING A NEW LAYER

The easiest way to add a new layer to an existing image is to choose Add Layer from File item in the Layer menu. This will open the Add Layer window, which will two tabs in it: Extras and Folders. The Extras tab will display two folders, ON1 Extras and My Extras. The ON1 folder will include all of the Extras installed with your copy of Photo RAW, including backgrounds, textures, borders, skies, and more. The My Extras folder will include any similar files you have added to Photo RAW via the Extras Manager (as described on page 9).
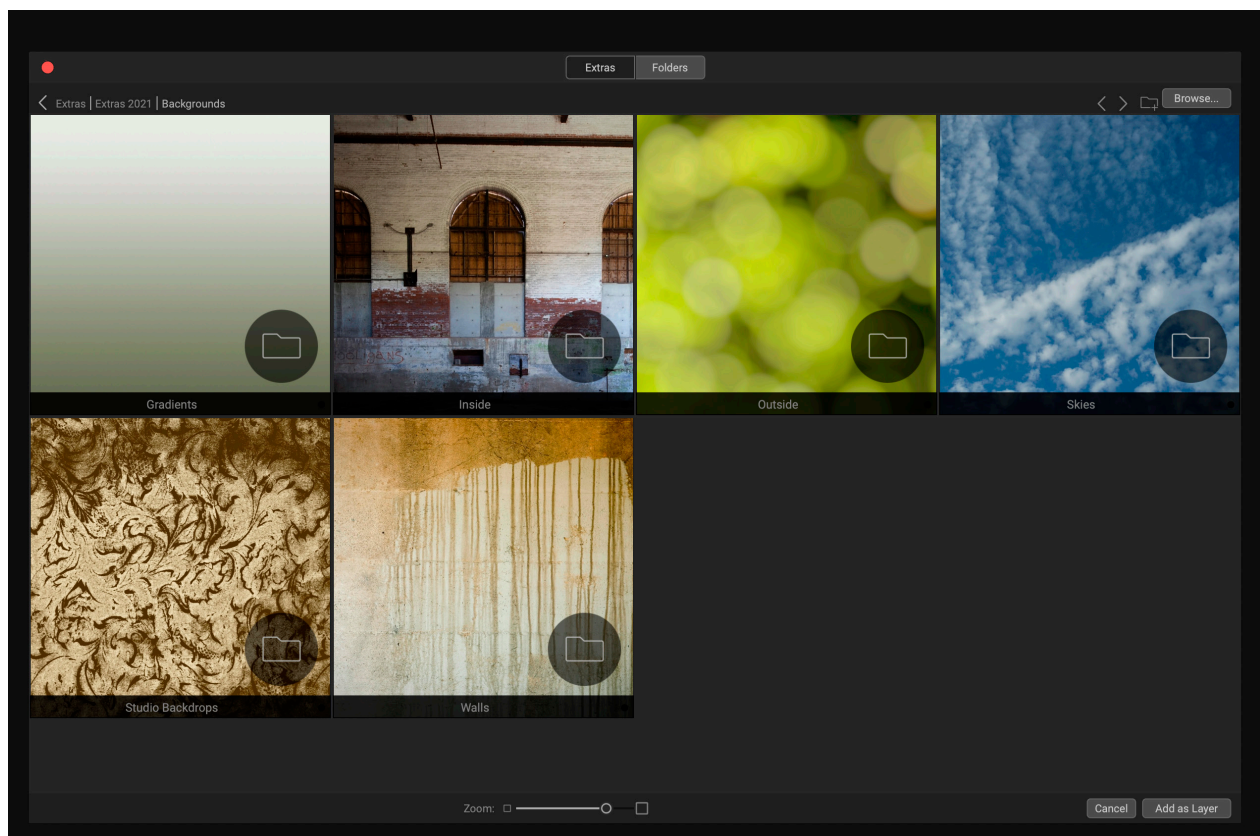
When you choose Add Layer from File, a window appears with Extras and Folders tabs. The Extras tab contains backgrounds, textures (shown above) and borders supplied by ON1 with Photo RAW, as well as any extras you might have added via the Extras Manager. Clicking on the Folders tab (or the Browse button at the top right of the window) will let you browse your computer for photos and other supported files.

If you wish to open a different file, click on the Browse button at the top of the Add Layer window, which will open your computer's file selection dialog box, where you can navigate to the specific file. Any file compatible with ON1 Photo RAW 2020 can be opened and added as a layer.

Opening a layered Photoshop file

ON1 Photo RAW 2022 can open most layered Photoshop files in the Edit module. What happens depends upon the composition and type of layers in the document:

- If the layered document has basic Photoshop layers and masks, Photo RAW will open the document inside Edit, with each layer and mask visible in the Layers pane.

- If the Photoshop file has specialty layers—smart objects, text layers, layer styles—Photo RAW will flatten the visible layers and will open the file as a composite image, with a single layer.

In either case, Photo RAW will convert the file to an .onphoto file, preserving your previous document.

Creating an empty layered file

You can also start with a blank canvas, in either the Browse or Edit modules. Choosing New Canvas from the File menu opens a dialog box for creating a new file at whichever custom size you choose. When you click OK, Photo RAW creates a new .onphoto file with a single, transparent layer in it. You can then use any of the options detailed below to add photos and other extras to the file. (You can change the size of an existing canvas by choosing Canvas Size from the File menu inside the Edit module.)
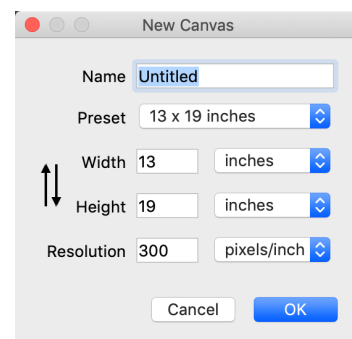
The New Canvas menu item is available in Browse and Edit.

Creating a Color Fill Layer

In addition to opening other document types, Photo RAW can create a new layer filled with a solid color, which can be quite useful when working with sophisticated composites or blend modes. Choosing Add Color Fill Layer from the Layer menu (or clicking on the Color Fill icon in the Layers tool bar) will open the system color picker, where you can choose a color for your new layer. You can change the color of any color fill layer by selecting it in the Layers pane and choosing Edit Color Fill from the Layers menu.

WORKING WITH THE LAYERS PANE

The Layers pane has three sections:

A. **Layer Opacity:** Reflects the opacity of the currently selected layer.

B. **Layers:** All of the layers in your document are listed here, with a thumbnail of the layer contents and the layer mask (if there is one); the currently selected layer has an colored outline around it (based on the Accent Color chosen in the System Preferences' General tab). You can rename a layer by double-clicking on the title.

The Layers pane in Photo RAW. This photo has three active layers.

C. **Layer Tools:** The toolbar at the bottom of the Layers pane includes buttons for performing basic layer operations (described in more detail below).

Layer Visibility

A layer's visibility can be turned on or off by clicking the button to the left of the layer thumbnail. When turned off, the layer has no effect on the composite image.

Changing Opacity

The opacity slider controls how opaque or how strong the selected layer is. The default is 100%. At lower settings, the layer will blend with the layer(s) under it. Altering the blending mode and opacity of a layer can create a wide range of color and tone effects.

Changing the Layer Order

You may change the order of layers by dragging and dropping layers into the order you prefer.

Renaming Layers

You can rename a layer by double-clicking on it. The name turns into an editable field. Type in your preferred name and press Enter.

Layer pane toolbar

All of the layer commands in Photo RAW can be accessed via the Layers menu and a pop-up menu that you get when you right-click on any

layer. The toolbar at the bottom of the Layers pane, however, contains the basic commands you need when working with layers. From left, the icons represent:
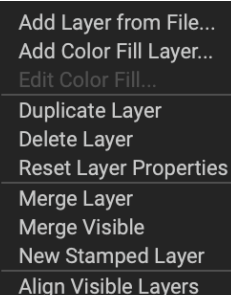
- **New Layer:** Adds a new layer, opening the Add Layer from File window.
- **Duplicate Layer:** Makes a duplicate layer, including any Edit module adjustments made in the original .
- **New Color Fill Layer:** Creates a new color fill layer.
- **Delete Layer:** Deletes the currently selected layer.
- **Merge Layer:** Merges the currently selected layer with the one directly beneath it in the Layers stack.
- **Blending Modes:** Lets you select a blending mode for the current layer. (See page 137 for more about working with blend modes inside Photo RAW.)

Other layer commands, available via the Layer menu or pop-up, include:

- **Reset Layer Properties:** Deletes any layer masks or transform operations you have made to the current layer. To reset Develop, Effects, or Portrait settings or local adjustments made to a layer, click the Reset Layer button at the bottom right of the main Edit module window.
- **Merge Visible:** Unlike the Merge Layer command, this will merge all of the visible layers— ones with the layer visibility status set to on—in a file into a single composite layer, with all of the merged layers' effect applied.

- **New Stamped Layer:** When you have the top layer in the stack selected, this option will create a new composite layer at the top of the stack, with all of the layers' effect applied.

- **Align Visible Layers:** This will align the visible layers, based on the content of the layers. See page 180 for more information about this feature.

Changing Blending Modes

Blending modes determine how the selected layer blend with the layer(s) below it. The default blending mode is Normal. This maintains the full opacity of the upper layer. Layers also supports many other blending modes which can be used to alter the brightness, contrast and color of the image. See "Blending Modes" on page 137 for more detailed information on this topic.

Layer Masks

If you use any of the masking tools, a layer mask will be created automatically. Clicking on the layer's mask icon will display the standard Photo RAW mask options, and you can use all of the Edit module's masking tools to create or modify layer masks. You can also copy and paste layer masks—including masks from Effects filters—via the Mask options section or via the Mask menu. See "Filter Masks" on page 135 and "Masking Tools," starting on page 88 for more on using Photo RAW's masking tools.

Adding layers via Filmstrip view

In addition to the Add Layer options detailed above, if you are in Filmstrip view inside the Edit module, you can also drag photos from the strip at the bottom of the screen into the main window. This will create a new layer with that photo on it. (See "Working in Filmstrip View" on page 25 for more.)

> **NOTE:** If the file you add is larger or smaller than the pixel dimensions of the document, use the Transform tool to resize it as desired. If you wish to preserve the original aspect ratio of the placed file, use the Shift key to resize it proportionally.

USING THE TRANSFORM TOOL WITH LAYERS

Use the Transform tool (see page 80) at the top of the Toolbar to manipulate layers. A layer may be repositioned, sized or rotated using the tool. When selected, transform handles will appear on the edges of the selected layer. You use these transform handles to manipulate the image. You can only transform one layer at a time.

Repositioning a Layer

To reposition a layer, simply click and drag inside the transform box. You can also use the keyboard arrow keys to nudge a layer one pixel in any direction.

Resizing a Layer

To resize a layer, click and drag on any of the transform handles. Clicking on a corner handle allows you to adjust two sides simultaneously. Clicking on a side handle allows you to adjust that side. If you hold the shift key down while adjusting the size, the proportions of the layer are maintained. If you hold down the Option (MacOS) or Alt (Windows) key while resizing, your image will resize from the center instead of from the edge. You can hold down Shift-Option (or Shift-Alt) to resize proportionally from the center.

You can type in the size you desire in the Tool Options bar in the width and height fields. You can also size a layer to fill the canvas automatically by pressing the Fill button in the Inspector.

Rotating a Layer

To rotate a layer, move the Transform tool just outside a corner transform handle. Notice that the tool cursor changes to a rotate cursor. Now click and drag to rotate the layer. You can also use Option/Alt with the left or right arrow keys to rotate a layer when the Transform tool is selected. To rotate the layer quickly in 90 degree increments, you can use the rotate left and rotate right buttons in the Tool Options bar.

Flipping a Layer

You can flip a layer either horizontally or vertically by pressing the flip buttons in the Tool Options Bar.

When you have completed your transforms you need to commit the changes. You can do this by pressing the Apply button that appears in the Tool Options Bar or by pressing the Enter key. You can cancel a transform by pressing the Cancel button in the Tool Options Bar or by pressing the Escape key.

> **NOTE:** For detailed specifics on the Transform tool's options, see .

ALIGNING LAYERS

One of Photo RAW's most advanced features is the ability to align multiple layers based on content. This can be a great aid when you've hand-held a group of shots, and want to blend portions of one image onto another, to use a better sky, for example.

To align layers, open them in the Layers pane, and choose Align Layers from the Layer menu or pop-up menu. Photo RAW will then analyze the contents of the layers, and aligns them to the one with the most commonality. When you look at the individual layers after aligning them, you'll see that some layers have been moved or rotated slightly to match the content.

An example of Photo RAW's layer alignment can be seen in the photos on the following page, which are handheld shots taken two days apart from the same location. The top photo is the base layer, shown after alignment, but with the second layer hidden.

The bottom photo shows the aligned layers, with a gradient mask blending the top part of the base layer with the bottom part of the other photo. Despite the fact that the photos were shot days apart, Photo RAW has aligned the photos almost perfectly.

The base aligned layer.

The final aligned photos, blended together with a gradient mask from top to bottom.

USING LAYERS WITH SYNCED ON1 CLOUD FILES

If you wish to create a layered file with ON1 Photo RAW 2022 using a synced photo that resides on device other than the current device, you should be aware of two restrictions.

First, because Layers requires the creation of a new file in ON1's proprietary .onphoto format, this new file must be saved to the device it is being edited with. If you save this new file to a published folder or album, it will be synced. You will be able to edit the layered file on another computer running ON1 Photo RAW (see the section on working with existing layered files below for more).

Second, if the synced photo you wish to use is synced as an editable preview (as opposed to the original photo), Photo RAW will warn you that you will be working with a photo that has less fidelity than the original (see the dialog box on the right). For some uses, working with the preview might be good enough, but if you want to be sure that you are using the highest-quality base layer, either copy the file to your current computer, or change the sync option for the photo's folder or album to Originals, and download that from ON1 Cloud Sync.
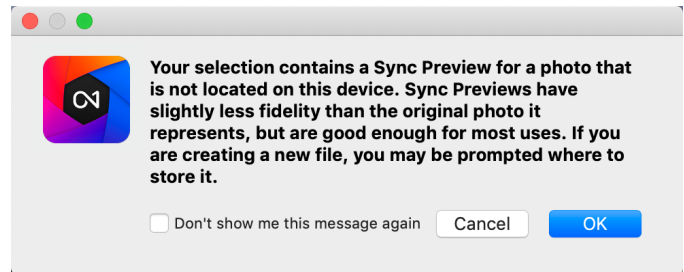
For more information on these settings, see "Managing Sync Options in Photo RAW" on page 66.

Using Existing Layered Files with ON1 Cloud Sync

If you create a layered file inside ON1 Photo RAW 2022 and sync it to the ON1 Cloud in any manner (folder or album, preview or original), that layered .onphoto file is fully editable on another synced device running Photo RAW. Any Edit module changes you make to that layered file on that device (on any existing layer), *with the exception of adding or removing layers*, will be synced back to the original file. If you add or remove layers, you will be prompted to save the newly edited file to the current computer.

Layered photos that have been synced to the ON1 Cloud are not editable on mobile devices using ON1 Photo Mobile; they are viewable, however.

STITCHING PANORAMAS
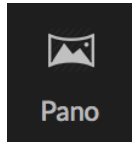
ON1 Photo RAW 2022 lets you stitch multiple images together to create a panorama, directly from within Browse. You can even batch process a group of panoramas.

Panoramas are composite photos created from multiple individual frames of a scene (also known as 'slices'). While they're often thought of as wide, narrow images, panoramas can be horizontal or vertical, wide or compact. They give you a much higher quality final image, with added detail and a greater point of view. Photo RAW can create a panorama with as few as two images or more than 25.

To create a panorama with Photo RAW, go to Grid or Filmstrip view in Browse and select the images you wish to use for your merger—or select a folder that contains the frames you wish to build into a panorama—and click the Pano icon on the right side of the screen.

Photo RAW will then display the Create Panorama window, which has two components: the Preview area, which displays the merged panorama, and the Options panel, which lets you adjust the type (spherical or collage) and the edges of your panorama; choose an output size (either 100% or 50% of the stitched file dimensions); choose a module to open the panorama after merging, and add panoramic metadata.
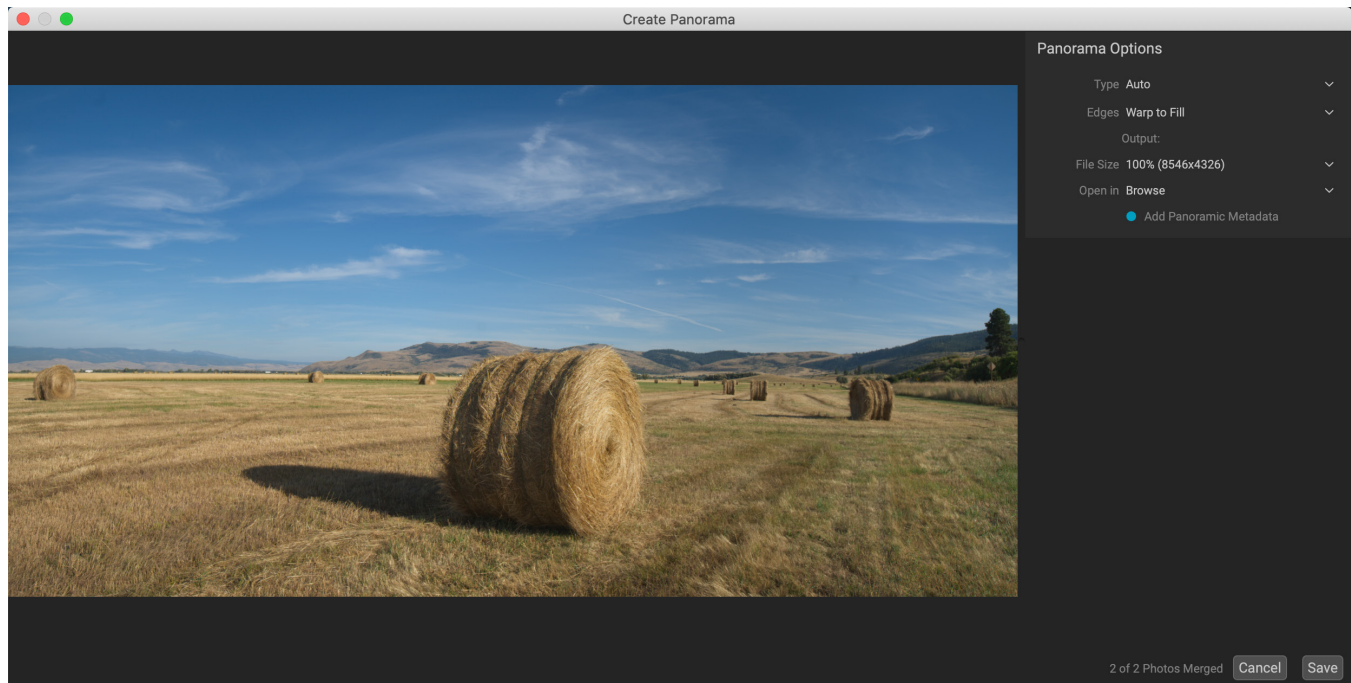
ON1 Photo RAW's Create Panorama window displays the projected panorama, and includes options for the type of merger, cropping options, file size and adding panorama-specific metadata. You can also specify which Photo RAW module in which you wish to open the finished panorama.

With most landscape-oriented panoramas, you will want to use Auto or Spherical projection type, which merges the photos as if they were mapped on the inside of a sphere. The Collage projection type lays merged photos flat (as opposed to mapping them on a curved surface), and is often called "scrapbook style."

There are three cropping options available in the Edges pop-up menu: None, Crop and Warp to Fill:

- **None** will merge the panorama without cropping the finished image.
- **Crop** trims the edges of your panorama to fit the best rectangular crop.
- **Warp to Fill** uses ON1's content-aware fill technology to stretch the edges of your scene to fill as much of the entire frame as it can, giving you bigger cropped area.

Remember that no content-aware technology is perfect: If you use Warp to Fill option, make sure to check the edges of the frame after the panorama is built, making sure that there aren't any smudged areas or bad fills. (It often works best on scenes with skies and large vistas, and less so on scenes with lots of detail at the edges.)

The Open In section of the Options Bar lets you choose what to do when your panorama has been built. You can stay in Browse, or open your finished panorama in either the Develop or Effects tabs.

The Add Panoramic Metadata option, when checked, will take advantage of the exploration features found in panorama-aware websites—like Facebook and Google—and apps, letting users click and spin around your panorama in real time.

When you click Save, Photo RAW will build your panorama, blending the exposures as necessary, saving the resultant file as an .onphoto file; it will then open it in the module of your choice (as determined by the Open In menu in the Panorama window.)

BATCH PROCESSING PANORAMAS

Processing a group of panoramas inside Photo RAW is easy: create a separate folder for each panorama you wish to build, putting the slices for that panorama in the folder. Then, in Browse, select the folders you wish to build, and Photo RAW will automatically go through each folder, building the panoramas using the default options: Auto, with edges cropped and built at 100% size.

Each completed panorama will be placed in the same folder as the component slices.

TIPS FOR CREATING GREAT PANORAMAS

Creating panoramas can be a lot of fun, and can capture the grand vistas in a way that a single capture cannot. There are certain best practices that will help ensure you can create a great panorama:

- Use a tripod, and ensure that it—and your camera—are level throughout the entire arc of your scene.
- Lock your metering and your focus before you shoot: use the same aperture, shutter speed and ISO for all of the shots in your panorama.
- Overlap each shot by 50 percent, to give you plenty of data for which to build your final panorama.
- If your panorama isn't quite what you had hoped for—especially in terms of exposure— and you have enough overlapping frames, try removing a few frames and rebuilding the panorama.
- Once you've got your images in Photo RAW, perform basic edits on them in Develop and turn Lens Correction on. (Save styling for after your panorama has been merged.)

PHOTO RAW PANORAMA EDGE OPTIONS

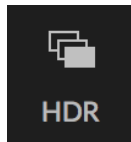These panoramas demonstrate the three different edge options available via the Create Panorama feature. The top panorama was set to None, the middle to Crop, and the bottom the Warp to Fill. Because the scene included skies and grasslands at the edges, the Warp to Fill was able to add enough pixels to fill out the top of the panoramic frame.
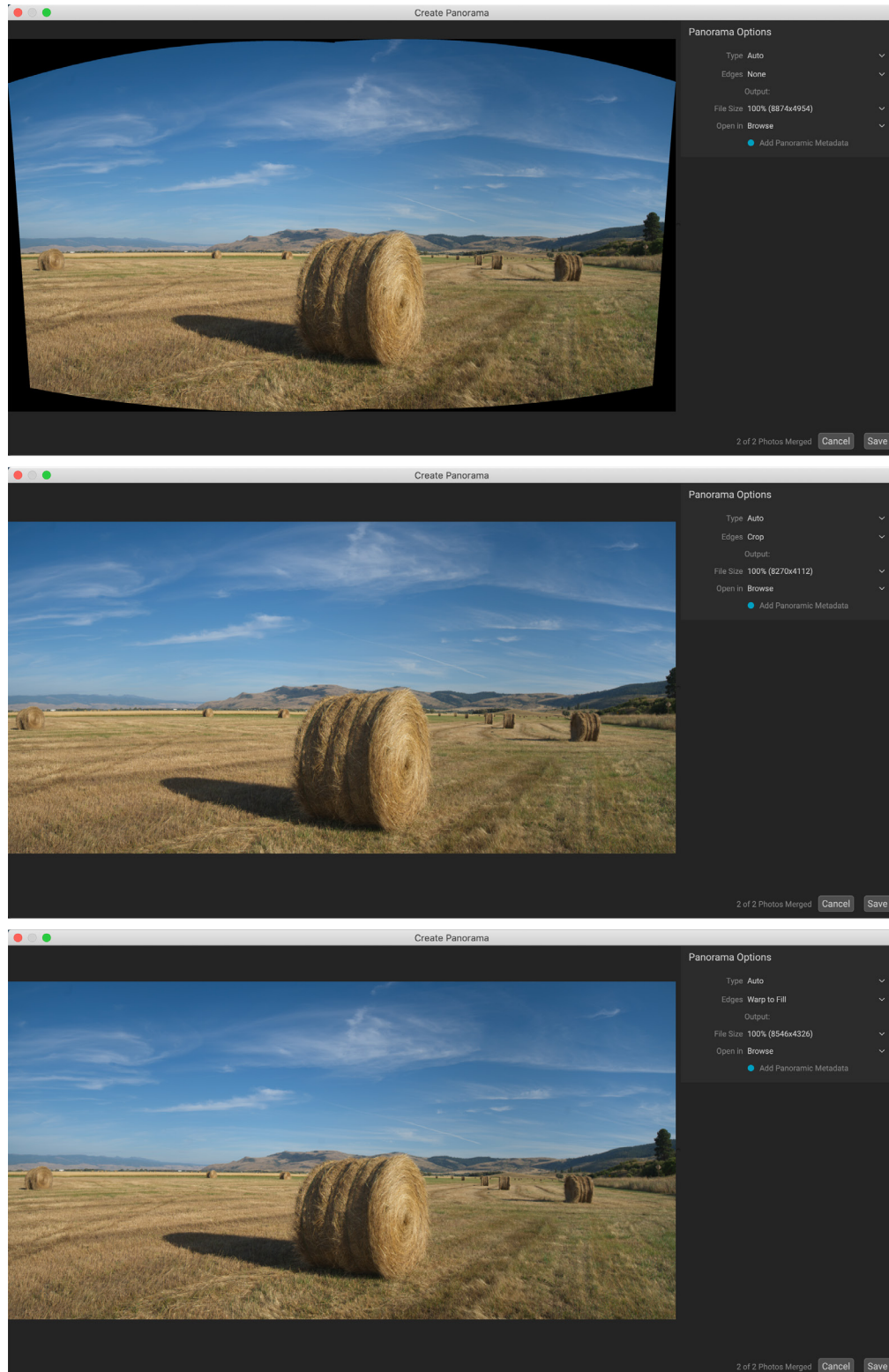
BLENDING HDR IMAGES

In addition to panoramas, ON1 Photo RAW 2022 has a second photo-merge feature: high dynamic range (HDR) photo creation. This feature lets you take multiple shots of a scene, at varying exposure levels—accurately capturing shadows, midtones and highlights in different frames across the series—and then blend them together to create a final image that has a much wider tonal range than a single shot could do. And, as is the case with the panorama feature, you can create multiple HDR composites via Photo RAW's batch processing option.
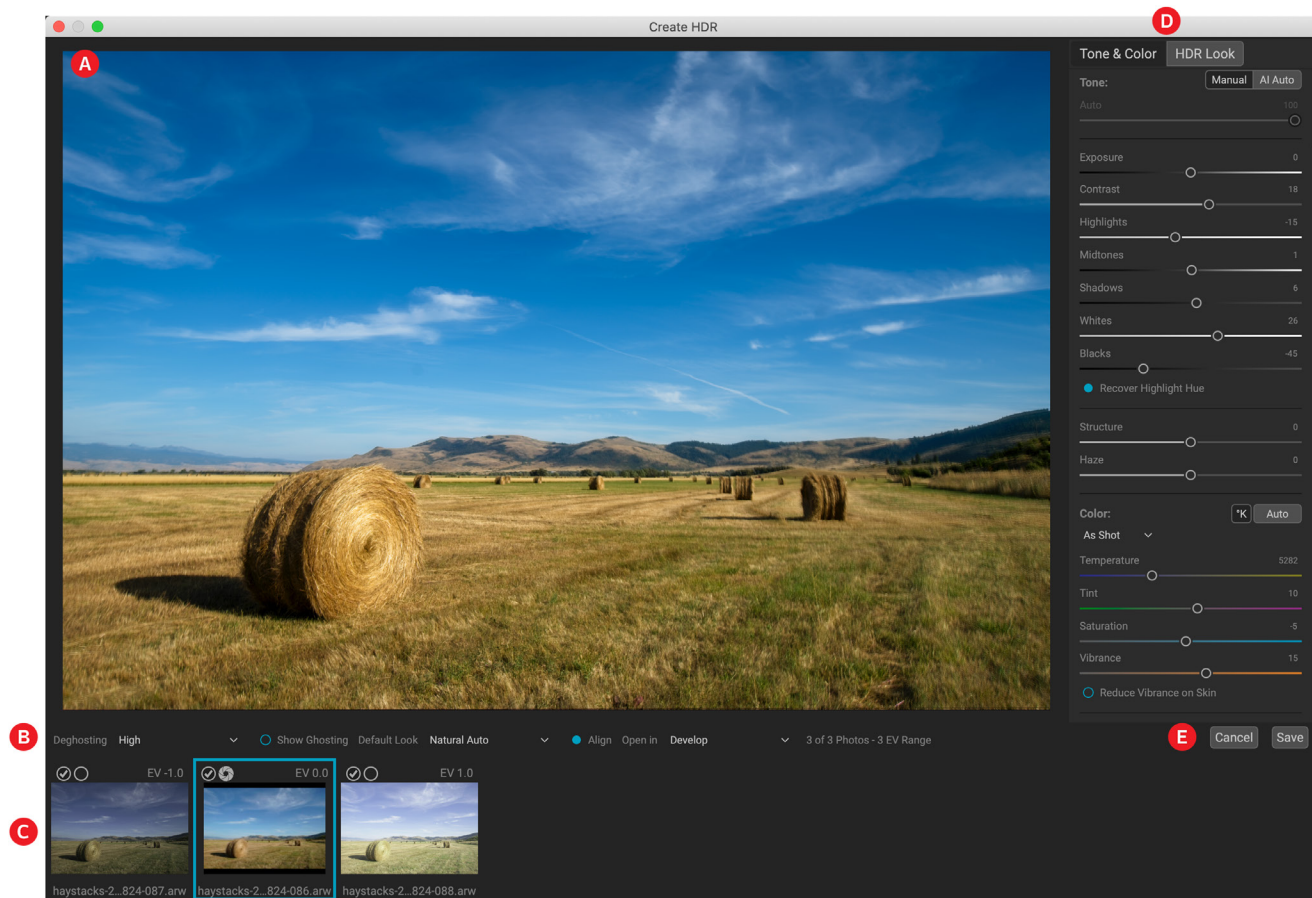
To create an HDR image, go to the Grid or Filmstrip view in Browse and select the set of images that you wish to blend. Then click the HDR button underneath the module picker (or choose Create HDR from the File menu). You will then see the Create HDR window, which has the following options:

A. The **Preview** window displays a rendition of your merged HDR image (and is resizable).

B. The **Options bar** has settings for adjusting ghosting, choosing a default look, and which module you wish the resultant image to open in.

C. The **Reference panel** includes the images used to build the HDR, with their exposure values relative to the base image. The image with the outline is the base version used for deghosting; the base image for exposure is represented by the lens aperture icon next to the checkmark.

D. The **Tone & Color pane** from Develop (see page 120) and the **HDR Look** pane from Effects (page 146) are present to help you tune your image.

E. **Save/Cancel buttons**.

Once the Create HDR window is open, you can use the various options to tune your image. You can adjust the base image: clicking on the different frames in the Reference panel will choose a different base image for deghosting; to select a different base exposure image, click on the small lens aperture icon in a different image of the series. (By default, Photo RAW chooses the image it felt was closest to the middle of the series for both exposure and deghosting.)

Choose your prefered default look. These settings can be adjusted at any time.

Natural — Modest tonal mapping with no automatic adjustments.

Natural Auto — Modest tonal mapping with automatic tone adjustments.

Surreal — Strong tonal mapping with enhanced details and color. No automatic adjustments

Surreal Auto — Strong tonal mapping with enhanced details, color and automatic tonal adjustments.

The first time you launch Photo RAW's HDR feature, you'll be presented with this window, showing the different HDR toning options found in the Create HDR window. Once you've built your HDR file, you can go into the Edit module and edit any of the settings, add other filters and more.

The Default Look options are also designed to help get you started, corresponding to style options in the Tone and HDR Look panes. Natural and Surreal use those styles from the HDR Look pane, and the Natural Auto and Surreal Auto options also add the Auto Tone option from the Tone & Color pane. They are only designed to be a starting point: You can override any of the options by adjusting the settings in the two editing panes.

The deghosting section of the Options bar has options to blend portions of the frame that might have shifted during the image series (things such as clouds, flowing water or moving branches). Depending upon the amount of ghosting, you can choose from four levels of deghosting (or none). If you wish to see those areas in your image that will need deghosting applied to them, click the Show Ghosting button. Those areas that have ghosting issues will be shown with a red overlay. Depending upon how much movement there was in your scene, you can then choose the appropriate level of deghosting, or, in some instances, cancel and choose a different set of images to blend into an HDR.

The Align button in the Options bar is on by default, which means that, during the HDR generation process, Photo RAW will attempt to automatically align the images, based on their contents. Turn the Align button off when the alignment process results in a bad composite, or when you don't want Photo RAW to align the images (when working with star photography, for example). With the Align feature off, Photo RAW will use the selected base image for the HDR process.

The Open In section of the Options Bar lets you choose what to do when your merged HDR file has been built. You can stay in Browse, or open your finished panorama in either the Develop or Effects tabs.

Once you have your settings adjusted to the way you'd like them, you can click Save and Photo RAW will build your HDR, saving it in the .onphoto file format and opening it in the module of your choice. The beauty of Photo RAW's HDR engine is that any of the edits you make to your image in the Create HDR window are reflected in the Tone & Color pane in Develop and the HDR Look pane in Effects. Because ON1 Photo RAW is non-destructive, you can re-edit your HDR to fit your wishes. If you decide that you wish to use a different HDR Look style, or want to add additional effects to your photo, you simply open the image in the appropriate module and edit.

Deghosting High   ● Show Ghosting Default Look Natural Auto   ● Align Open in Develop   3 of 3 Photos - 3 EV Range

The Create HDR preview window, with the Show Ghosting option turned on. Areas that have ghosting issues will be shown with a red overlay.

BATCH PROCESSING HDR IMAGES

The HDR batch processing option lets you take a folder containing multiple sets of bracketed shots from a shoot, and automatically turns them into HDR photos ready for editing. The process creates separate .onphoto files that can be opened directly in the Edit module.

To do this, create a separate folder for each HDR composite you wish to build, putting the different exposures into that folder. Then, in Browse, select the folders, click the HDR button and Photo RAW will automatically go through each folder, building the HDR composite using the default options. Each completed HDR image will be placed in the same folder as the component photos.
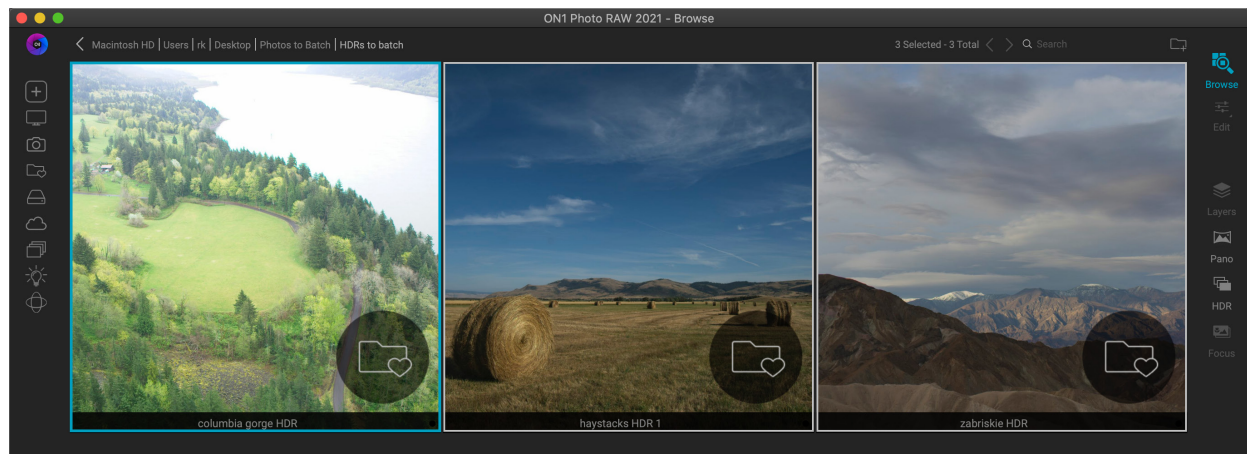
To batch process a group of different bracketed shoots for HDR creation, put the bracketed images into separate folders, and in Browse, select the group and click on the HDR button.

FOCUS STACKING
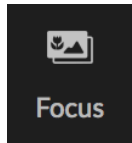
When working in the field, achieving perfect focus in a photo from the foreground to the background can be difficult, if not impossible to achieve. With ON1 Photo RAW 2022's Focus Stacking feature, you can blend a series of photos taken at different focus distances, giving you more depth of field than any single photo. And, you can adjust the focus in real-time, just like changing the focus on your lenses. Think of it like HDR, but for focus instead of exposure.

Like the Panorama and HDR features, you generate a focus-stacked photo in the Browse module. Simply select the photos that you wish to blend and click on the Focus icon in the selector on the right side of the window. This will launch the Focus Stacking dialog, which has the following components:

A. The resizable **Preview** window displays a rendition of your blended focus-stacked photo.

B. The **Options bar** has settings for aligning photos; an option to create a final layered file (with masks); which module you wish the resultant image to open in; adjusting the depth of field; and for fixing problem areas between the base photos in similar areas.

C. The **Reference panel** includes the images used to build the focus-stacked image, with their focus values (taken from the photo's metadata, if available). Clicking the check box on an image removes it from the focus operation.

D. **Save/Cancel buttons**.

If there is focusing metadata in the source images, Photo RAW will display the sources from closest to furthest, with the focus distance listed, and the Preview window will show the suggested final photo. Photo RAW will automatically try to create the greatest amount of depth of field possible, but you can use the Depth of Field slider to constrict the depth of field in the blended result. For example, if you wanted less sharpness in the areas that are closer, move the left slider; for less sharpness in the distance, move the right slider in. To get back to the maximum focus, click on the Max button.

The Despeckle slider can be used when you have some movement in parts of a scene between your base images, such as movement of leaves in a stand of trees. Increasing the Despeckle amount can sometimes help in removing ghosted elements or distractions.

The Threshold slider reduces noise in smooth areas of the image set, although it may knock out subtle detail if driven too hard. Sensitivity biases the decision of final "winner" (which image is declared sharpest) for each pixel. Low values rely more on low-frequency portions of the image, where high values leverage high-frequency aspects of the image and may help reduce noise. Adjusting these are similar to adjusting noise reduction, you are looking for the best compromise of the the two.

When you have the result you desire, click the Save button, and Photo RAW will blend your source photos together and create a new photo saved in the .onphoto format. Depending upon your choice in the Open In portion of the Focus Stacking window, the photo will open in Browse or the Develop or Effects tab. If you chose the Layered Results option, all of the separate images will be displayed in their own layer, with the layer masks attached.

Like all other image types inside Photo RAW, you can edit focus-stacked photos non-destructively in any of the Edit module tabs.
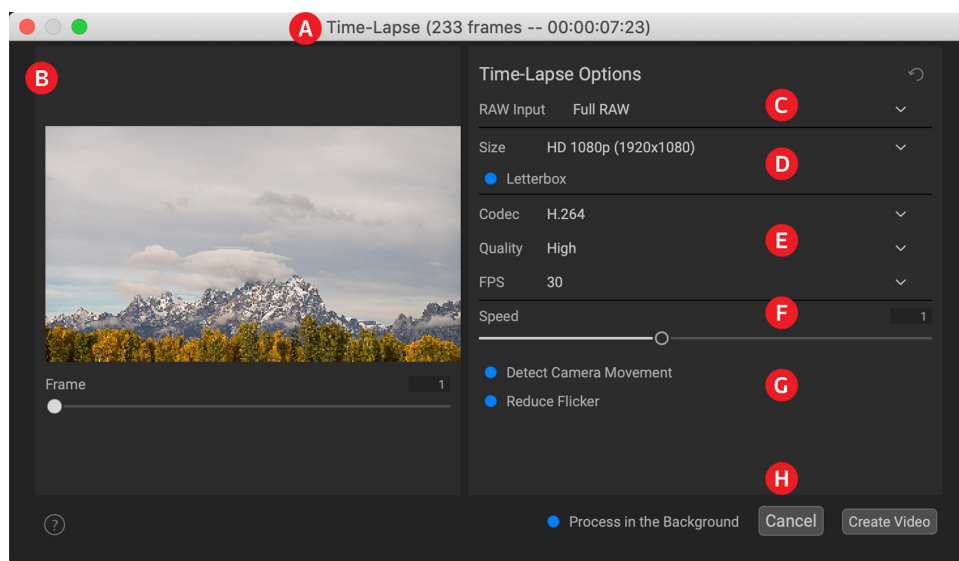
TIME-LAPSE
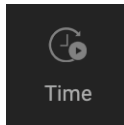
ON1 Photo RAW 2022's Time-Lapse feature lets you take a series of still images and turn them into stunning, flicker-free HD or 4K movies with the click of a few buttons, from directly in Browse. You can preview your results right in the dialog and create quick proof versions or high-quality final results.

When processing a time-lapse sequence, Photo RAW can detect when the camera is bumped and will filter out misaligned frames. It can also detect changes in exposure and even them out automatically during processing, letting you create you "holy grail" style day-to-night videos. You can even increase or decrease the speed of the final videos to stretch out short sequences into longer, smooth videos.

To use the Time-Lapse feature, go to Grid view in Browse and select the photos to be used in the time-lapse sequence, then click the Time icon from the group of icons on the right side of the Browse window. This will bring up the Time-Lapse window, shown below:

A. **Title bar:** Includes the number of frames in the sequence, and the estimated length of the generated time-lapse movie at the current Speed setting.

B. **Preview area:** Displays a small preview of the movie to be generated from the sequence. Use the Frame slider to scrub through the sequence.

C. **RAW Input:** Lets you set the type of proxy file used to generate the time-lapse movie. Options are Embedded JPEG (Fastest), Fast RAW (uses Detail view from the Browse cache), and Full RAW (uses the full raw file).

D. **Size:** Settings for the final movie size—HD 720p (1280x720), HD 1080p (1920x1080), 4K (3840x2160), and 4K (4096x2304).

E. **Movie generation settings:** Adjust the codec used to process the final movie (H.264 or ProRes), quality (High, Medium or Low), and the frame rate (FPS).

F. **Speed:** Slider to compress or expand the movie length.

G. **Options:** Detect Camera Movement will look for misaligned frames, removing them from processing; Reduce Flicker will adjust exposure settings on the fly during processing.

H. **Create Video/Cancel/Process in the Background** buttons.

When you click Create Video, Photo RAW will build your time-lapse video from the sequence using the settings in the Time-Lapse window. When the movie file has been created, the video file will be saved in the same folder that the sequence resides, and will be visible in Browse. Double-clicking on the file in Browse will launch your computer's default video-playback app.

BUILDING EFFECTIVE TIME-LAPSE MOVIES

Unlike Photo RAW's other image-combination tools, you'll want to perform your finish editing on the sequence before you click on the Time icon. For some sequences, you can finish edit the first image in the sequence—or a representative image in the sequence—in the Edit module, and use the Sync Settings command to synchronize all of the edits across the sequence (see "Copying settings and synchronizing edits" on page 59). Then, turn the Reduce Flicker option on to let Photo RAW to adjust the frames' exposure settings during the time-lapse generation process.

With more complex sequences, you might want to think of the sequence as different subgroups of exposure settings, edit a select frame from each group and sync that group's settings throughout the sequence. You'd still want to use the Reduce Flicker setting, but in some instances, doing a little bit more subtle processing across a long sequence can help you create a better final product.

The settings in the Time-Lapse window have been designed to give you great flexibility when building time-lapse movies. When you go to create your initial movie from a sequence, think about creating 'proof' versions to check your movie's settings and results. For example, use the Embedded JPEG or Fast RAW setting in the RAW Input pop-up, along with a smaller 720p or 1080p output size, for those first time-lapse movies. They'll generate much more quickly, and you can get a good idea about your sequence and your final edits before producing that 4K masterpiece from the full set of raw files.

PART 5: OUTPUT AND SHARING

While editing and organizing your photos are probably the most important tasks you'll do on a regular basis inside ON1 Photo RAW 2022, there will be times when you want to "do something else" with your photos. Whether it's enlarging photos for high-quality prints, sharing your photos with others or on social media, or printing to your desktop printer, Photo RAW has all the functionality you'll need to get your photos where you want them to be.

In this section, you'll find detailed information on the following topics:

- **ON1 Resize:** The industry standard for image enlargement and printing. (See page 192)
- **Export:** The power of Resize in a quick and easy-to-use panel, letting you export your photos with flexibility, ease and control. (See page 208)
- **Print:** Print your photos in any size, as individual photos, or in contact sheet form. (See page 219)
- **Share:** A quick way to share your photos, including via SmugMug. (See page 225)
- **Send To:** Edit photos in other photo apps. (See page 225)
- **Other Sharing Options** (MacOS only). (See page 227)

ON1 RESIZE
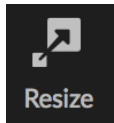
ON1 Resize lets you get the highest quality enlargements of your photos, using the patented, industry-standard Genuine Fractals algorithms to enlarge photos without the loss of sharpness or detail. It includes the following features:

- Complete control over adjustment size and resolution
- Crop to common preset sizes for different paper and screen sizes
- Multiple resize algorithms let you get the highest quality results with any subject matter
- Perform precise print sharpening, and add film grain
- Add gallery wrap wings for printing on canvas
- Divide an image into tiles for printing mosaics or murals
- Hundreds of presets to create the desired size print and adjust options for your printer

When Should I Use ON1 Resize?

ON1 Resize should be used as one of the last steps in your workflow before printing. The power of ON1 Resize is in the concept of resolution on demand. You can work with a modest size file, which makes your editing faster and takes less hard drive space and memory. Then when you are ready to output your file, you resize it with ON1 Resize to the desired size and sharpen it for output. This means you don't have to keep multiple versions of a file at different print sizes; you just create what you need on-the-fly. ON1 Resize also supports layered Photoshop files so you can maintain all your layers in the entire process.

> **NOTE:** A fuller discussion of resolution and print size can be found in "How Big Can I Print?" and "How Much Resolution Do I Need?", starting on page 206.

USING RESIZE WITH ON1 CLOUD SYNC FILES

To use Resize with a file that resides on device other than the current device, you should be aware of two restrictions. First, Resize requires the creation of a new file, and this new file must be saved to the device it is being edited with.

Second, if the synced photo you wish to use is an editable preview, Photo RAW will warn you that you will be working with a photo that has less fidelity than the original. If you want to be sure that you are using the highest-quality base layer, either copy the file to your current computer, or change the sync option for the photo's folder or album to Originals, and download that from ON1 Cloud Sync.

For more information on these settings, see "Managing Sync Options in Photo RAW" on page 66.
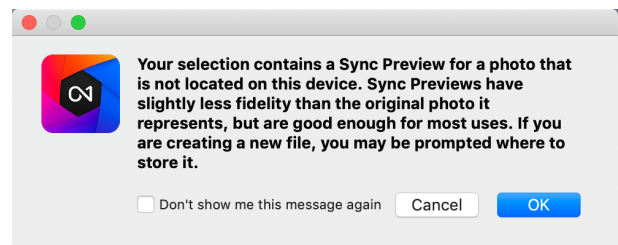
ON1 Resize Main Screen Overview

Below is an overview of the main sections of the ON1 Resize window:

A. **Tool Well:** This is where the tools are located.

B. **ON1 Cloud Sync Status/Settings/Help:** Icons for displaying ON1 Cloud status, preferences and help. The button at the bottom shows/hides the Presets pane.

C. **Presets:** Contains a library of presets for different printers, paper types and print sizes.

D. **Search:** This is where you can search for presets.

E. **Preview Window:** This is the main section where you preview and work on images.

F. **Zoom view/Soft Proofing:** The slider sets the zoom level; the icon turns soft proofing on or off.

G. **Tool Options bar:** Lists options for the currently selected tool.

H. **Navigator/Levels/Info Pane:** Navigator, levels (histogram) and general photo information.

I. **Pixel Dimensions:** Displays the pixel dimensions of your image.

J. **Document Size:** This is where you set the size of your resized photo.

K. **Settings:** Primary section for adjusting Resize's scaling algorithm.

L. **Control Panes:** Access image settings, sharpening, film grain, tiling and gallery wrap options.

M. **Cancel/Done:** Buttons to reset, cancel and/or close your image.

N. **Module Selector:** Takes you to Browse or Edit.

O. **Export/Share Buttons:** Export or share your image (separately from Resize).

Navigating the Preview Area

The Preview area is the main section where you preview and work on images. You can use the View tool for navigating this window.

This tool, which is the default tool selected when you open an image in the Resize module, adjusts the magnification of the image in the Preview window. With the Zoom tool selected, click in the Preview window to zoom in and center the image at the location clicked.

Hold down the Option/Alt key to pan around the magnified image. You can also double-click the View tool in the Tool well to set the image to 1:1 (or 100%) magnification view, which shows every pixel. This is best when examining small details, and when previewing the effects of Resize's sharpening on your photo.

NAVIGATOR, LEVELS AND INFO

At the top of the control panel on the right of the main window are the Navigator, Loupe, Levels, and Info panes. These four panes can be useful for inspecting and viewing details in your image.

The Navigator Pane

This gives you a birds-eye view of your image. The white square region marks the image area that is visible in the preview pane. You can pan view by clicking and dragging inside the white region.

At the bottom of the Navigator pane are several Zoom presets. Click on a Zoom preset to activate.

- **FIT:** Zooms to fit the current canvas size.
- **100:** Zooms to 100% or actual pixels.
- **50:** Zooms to 50%
- **25:** Zooms to 25%
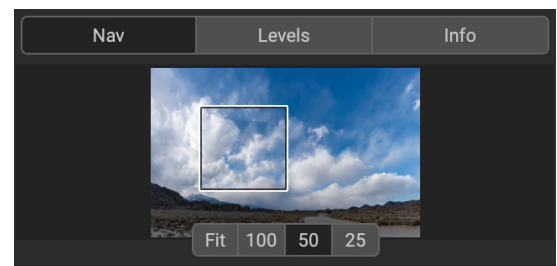
The Levels Pane

This gives you a color chart of the shadow, mid-tone and highlight areas based on the image RGB values (often called a histogram). This is useful to show areas within the image that may be clipping. Clipping is when your image contains pure blacks or white and can signify loss of highlight or shadow detail.

The left side of the histogram represents the shadows, while the right represents the highlights. At the top of each end is a triangle. If the triangle is lit, there is clipping on that side of the histogram. If you click on the arrows, you will activate the clipping overlay on your image. The areas of your image with a blue overlay are pure black, while the areas with the red overlay are pure white. You can turn the clipping view off again by clicking on one of the triangles. You can also temporarily enable clipping view by holding down the J key at any time. The clipping view is useful when you are making adjusts to the brightness and contrast of your image.
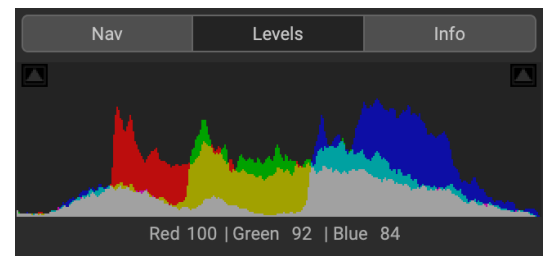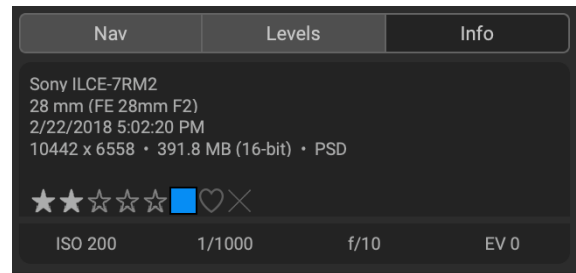
The Levels pane also displays the RGB values under the cursor at the bottom of the pane.

The Info Pane

The info pane displays photo metadata, including:

- Camera type
- File type
- Focal length and lens information
- Date and time captured
- Exposure information
- ISO
- Shutter Speed
- Aperture
- Exposure Value
- Filename
- Color Space
- Dimensions
- File Size

CROP TOOL

The Crop tool is used to crop and resize the entire image. Unlike the non-destructive Crop tool in the Edit module, Resize's Crop tool removes pixels outside a crop box and changes the canvas size at the same time.

To crop the image, select the Crop tool. Then adjust the corner handles of the crop tool overlay. The area outside the crop box appears darkened for guidance. You can resize and move the image inside the crop box. When you are satisfied, press the Apply button in the Tool Options bar or press Enter.


The Crop Overlay in Resize.

Working with the Crop Tool Overlay

- **Moving the Image**: To move the image inside the crop box, click and drag inside the box. You can also nudge the image using the arrow keys on your keyboard.

- **Resizing a Crop Box**: To resize the Crop Box, click and drag on any of the resize handles. Clicking on a corner handle allows you to adjust two sides at the same time. Clicking on a side handle allows you to adjust that side. If you hold the shift key down while adjusting the size, the proportions of the box are maintained. To rotate the crop box, move outside a corner until the tool changes to rotate. You can also set the aspect ratio or size of the crop box in the Tool Options bar.
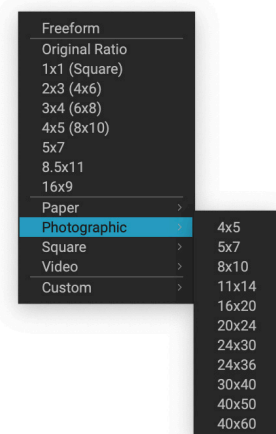
Crop Tool Options Bar
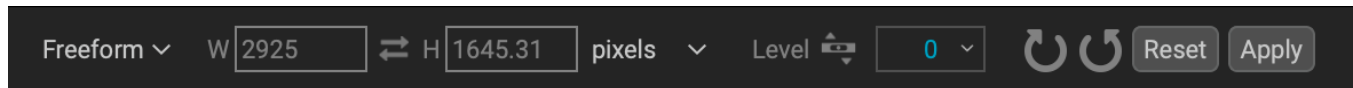
- **Preset pop-up**: Pop-up controls the crop tool mode as well as aspect ratio and document size presets. The Custom option lets you create your own preset crops.

- **Width**: Sets the width of the crop box.

- **Swap Dimensions**: Swaps the width and height. Handy for rotating the crop box.

- **Height**: Sets the height of the crop box.

- **Units**: Determines the unit of measure: Pixels, inches, centimeters, etc.

- **Leveling tool**: Click and drag this tool across an element in your image that should be level.

- **Angle**: See and adjust the angle of rotation.

- **Rotate**: Rotates the image 90 degrees.

- **Cancel**: Resets the crop tool.

- **Apply**: Applies the crop and resizes your photo.

Crop Tool Modes

The Crop tool works in three modes, which are all accessible via the Preset pop-up in the Tool Options bar:

- **Freeform**: In this mode you can adjust the crop box any way you like. The image will not be resized. Any area outside the crop box will be trimmed off. Use this mode if you just want to change the shape or recompose your image for general use.

- **Aspect Ratio**: You can lock the crop box to an aspect ratio. This makes sure the crop box shape doesn't change, just the size. Use this option to trim existing pixels while maintaining a ratio without resizing the image.

- **Document Size Presets**: These let you crop and resize your image at the same time. If you know your intent is to print the image at a certain size you can crop and resize the image at the same time. Many common sizes are included plus you can create your own.

The Crop tool preset pop-up includes options for nearly every aspect ration or print size.

Leveling the Image

The Crop tool has a special Leveling tool for automatically rotating your image to be level. To access it, first select the Crop tool, then perform the following:

- Select the Leveling tool from the Crop tool options bar. Your cursor will change to the Leveling tool.

- Click and drag a line across your image that should be level, either horizontally or vertically. When you release the mouse the image will be rotated automatically to the correct angle.

ADJUSTING THE IMAGE SIZE

In Resize, you can adjust your image size using either the Document Size pane or the Crop tool options bar. The information in these areas are interrelated and locked together. Adjusting the values in either pane will lead to changes in the other pane.

The Document Size pane displays the current desired Document Size, or the original size if you have not adjusted anything. Type into the Width or Height fields to change the Document Size.

The Width and Height fields are locked together to maintain the photo proportions. Changing the width will change the height proportionally. Resize does not support non-proportional scaling. If you would like to change the proportions of the image, use the Crop tool.

> **NOTE:** If you need to stretch a photo non-proportionally, use the Transform pane in Develop. (See page 80 for more.)
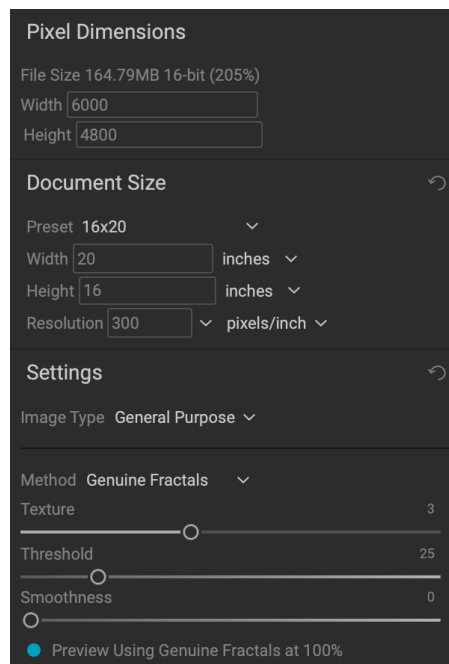
The Document Size Presets make it easy to crop and resize your photo at the same time. Simply select one to set the width and height automatically. This also selects the Crop tool, so you can adjust the document size to fit your photo. You also control your resolution, known as pixels per inch or dots per inch. This is important to adjust based on your output device.

The Pixel Dimensions pane displays the image size in pixels, the file size, bit-depth and scaling factor.
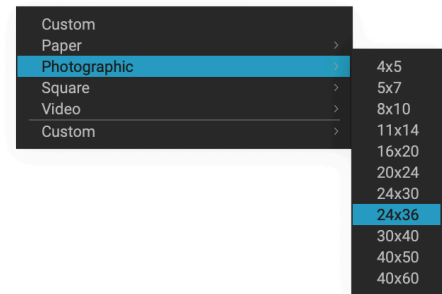
Using Document Size Presets

Document size presets allows you to crop and resize your image simultaneously. Often, when you are using ON1 Resize it is to create a file for print output at a known common size. In these cases, using a Document Size Preset can be the fastest way to set your Document Size and crop your image to the needed proportions.

Follow these instructions to use a Document Size Preset:

1. Select your desired size from the Document Size preset pull-down in the Document Size

pane, or Crop tool Options bar. You will see that the Document Size fields will be completed automatically for you and that a crop box is drawn on your image matching the proportions of the document size preset that you selected.

2. If needed, select the rotate crop box to rotate your crop box to the proper orientation. It will automatically rotate to match the orientation of your image, but if you want to crop differently you may need to rotate it.

3. You can use the Crop tool to reposition and change the size of the crop box so that it contains the image area that you want. Note that the crop box proportions and Document Size are locked so that you will always have the finished document size that you requested.

4. Adjust your resolution to what is needed for your output device. If you are unsure what to select, use the resolution drop-down menu for common settings.

The Photographic Document preset category contains many traditional print sizes.

Resize comes with many commonly used print, paper and video document size presets but you can also create your own:

- Select your image and launch Resize.
- From the Document Size Preset pull-down, select Custom > Manage Custom Sizes.
- Click on the Add button.
- Double-click on the highlighted untitled name and name your preset.
- Double-click on the width and height and fill in the proper values.
- Click on the units and select the proper unit.
- Click on the OK button.
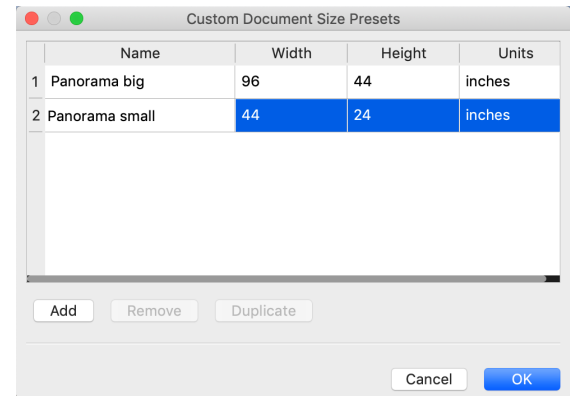
You can easily create your own custom print size presets inside Photo RAW.

If you select the incorrect Document Size Preset you can change it by selecting a different one. If you do not wish to use a Document Size Preset after you have selected one you can press the Reset button in the Document Size pane or the Cancel button in the Crop tool options bar. Also, the Lock Crop option locks the proportions and document size settings for the given crop. This is on by default when you use a Document Size Preset.

> **NOTE:** The Crop tool in the Edit module can also create custom presets, but unlike the one in Resize, they are solely intended for use as a crop ratio, not a specific document size, and have the label "ratio" in the Units column. If you change one of those preset sizes from "ratio" to a specific unit of measurement, like "inches," it will no longer be visible in the Edit module's Crop tool custom sizes. (See "Crop Tool" on page 79 for more.)

SETTINGS PANE

The Settings pane contains the controls for selecting the resizing method, or algorithm and its settings. Every image is different and selecting the correct settings here can improve the quality of the results.
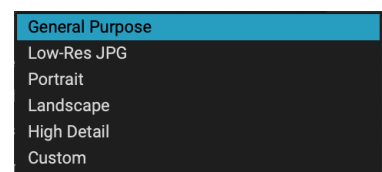
Image Type

To help you get started, try one of the presets in the Image Type drop-down menu. This pop-up contains presets for different image categories (portraits, landscapes, etc.). Choosing one will adjust the settings for Texture, Threshold and Smoothness automatically.
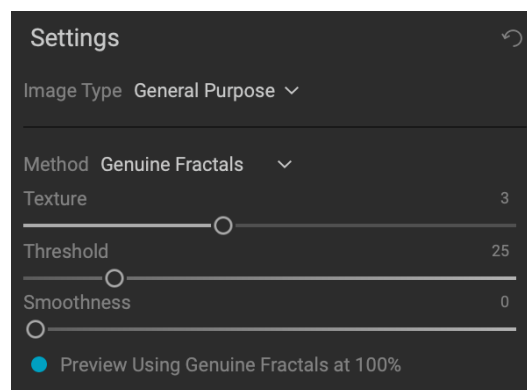
Method

The Method drop-down selects the method, or algorithm, used to resize the image. The options are:

Options for the Settings pane's Image Type menu.

- **Genuine Fractals:** This is the classic, patented, fractal-based algorithm that has made Perfect Resize the standard for over a decade.
- **ON1 Resize Portrait:** This is a new variation on the Genuine Fractals algorithm designed for portrait images. It is slightly softer and does a better job representing skin and hair textures.

Texture Controls

When you select the Genuine Fractals method there are several other controls—Texture, Threshold, and Smoothness—that tune the resizing algorithm based on the image. These all have to deal with the texture of the image. If you were to analyze an image from a detail perspective you could break it into three categories: Edges, Continuous Tone and Textures.

Edges are the sharp details that define the edges of the subject in your image. It's paramount that these be maintained in order for your enlargement to maintain quality. Continuous tone areas—like skin or skies—are mostly solid or graduated color. These resize easily as there is little detail in these areas.

Texture, in Resize's nomenclature, are the areas that fall between these two. They are areas that still contain detail but are not sharp edges. These are things like the surface of rocks, tree bark, fabric, animal fur, etc. The amount of detail in these texture areas can have a large impact on the perceived sharpness and quality of an image.

With ON1 Resize you can control the key algorithm variables that effect these areas. And, you can use presets for different image types and subject matters that help you get the best results in reproducing these textured areas.

Here's how to think of the sliders in the Settings pane, as you adjust the look of an image:

- **Texture**: This controls the amount of detail in flat, non-edge areas of an image. If your image contains lots of small detail that does not have defined edges (many organic patterns like leaves, rock, bark; or man-made patterns like fabric) it may be good to increase the amount

to a setting of 4 or 5. Settings beyond 5 will often introduce a bumpy noise pattern which is undesirable unless your original image was from scanned film. Settings lower than the default 3 are useful for images with large areas of continuous tone that have no appreciable detail (sand, snow, sky) but have hard edged foreground subjects such as landscape images, architecture or portraiture.

- **Threshold**: This controls the amount of hard edge detail that is enhanced. The default setting is 25. Decreasing the threshold will focus the algorithms on edge information. This may be useful for portraiture or for reducing noise in your image. Settings higher than 25 will increase the amount of small detail in flatter areas of the image. Settings as high as 100 are useful for highly detailed images (hair or feathers). Higher threshold settings will also make ON1 Resize process faster. A good way to start adjusting these controls is by setting the threshold to 100 and then move the Amount up until the image is too noisy (bumpy) and then reduce the threshold to smooth out the noise in continuous tone areas. For detailed images with no little or no continuous tone, you might try the amount at 4 and the threshold at 100. For portrait images or images with JPEG artifacts you should try an amount of 2-3 and threshold of 25 or lower.

- **Smoothness**: The smoothness slider is used to reduce artifacts along hard curved edges. Use the lowest setting needed.

The last item in the Settings pane, **Preview Using Genuine Fractals at 100%**, will use that algorithm to preview quality at 100% zoom, so you can more accurately adjust the items in the settings pane, as well as controls in the Sharpening pane.
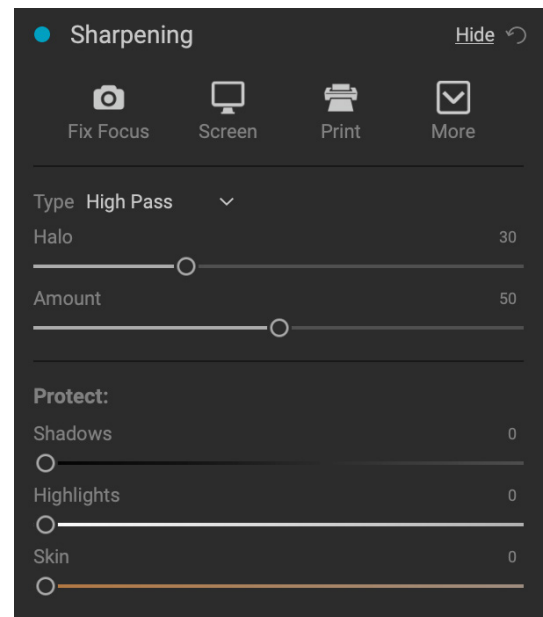
SHARPENING PANE

The Sharpening pane contains the controls to add additional sharpness to your image.

ON1 Resize features three sharpening methods:

- **Unsharp Mask**: Good for general sharpening. Similar to Photoshop's Unsharp Mask function. Resize's sharpening is different in that it is only applied to the luminance of the image, to prevent color artifacts.

- **High Pass**: High Pass sharpening is helpful when the original image is not sharp.

- **Progressive**: Similar to Unsharp Mask, except it sharpens different amounts depending on the size of the details in the image. Small details are enhanced more than large ones.

Using the Sharpening controls can save you the workflow step of adding additional Sharpening before printing and can help compensate for loss of sharpness due to dot gain from your printer. Sharpening should only be applied at the end of your workflow just before printing. If you plan to do additional retouching or compositing work after resizing your image, you should disable the Sharpening controls.

To sharpen your image for output, use these steps after you have adjusted the Document Size pane controls:

1. Zoom in on your image to 1:1. You can do this easily by using the 1:1 Zoom preset located in the Navigator pane.

2. Enable the Sharpening controls by toggling the on/off control in the pane's title bar.

3. Select the sharpening method that will provide the best results for your image. You may need to experiment to determine this.

4. Adjust the amount slider to determine the amount of sharpening desired.

5. Use the Highlight and Shadow sliders to limit the sharpening from being applied to the darkest and lightest areas of the image which can prevent sharpening of noise.

6. Similarly, adjusting the Skin slider can help protect skin tones from being oversharpened in the resizing process.

FILM GRAIN PANE

The Film Grain setting controls the amount of simulated Film Grain (noise) to your image. Adding a modest amount of grain can make your image appear sharper visually and can help hide imperfections (such as JPG artifacts).

Adding film grain can be especially useful for monochrome images, and should be added just before printing. If you need to do other retouching or compositing work in Photoshop or Layers after resizing your image, you should disable the Film Grain controls in Resize.
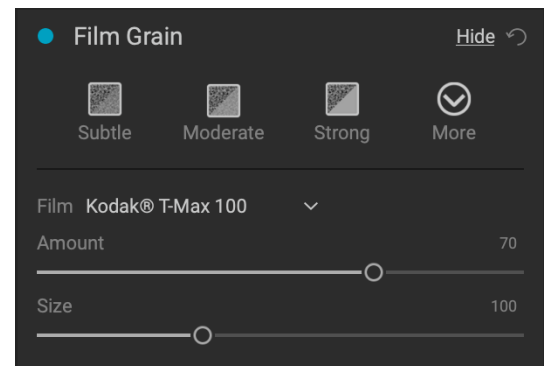
To add Film Grain to your image follow these steps:

1. Zoom in on your image to 1:1. You can do this easily by using the 1:1 Zoom preset located in the Navigator pane.

2. Enable the Film Grain controls by toggling the on/off control in the Film Grain pane title bar.

3. Adjust the slider up or down until the desired amount of Film Grain is added.

You can preview just the effect of the Film Grain by toggling the on/off control in the pane's title bar.

TILING PANE
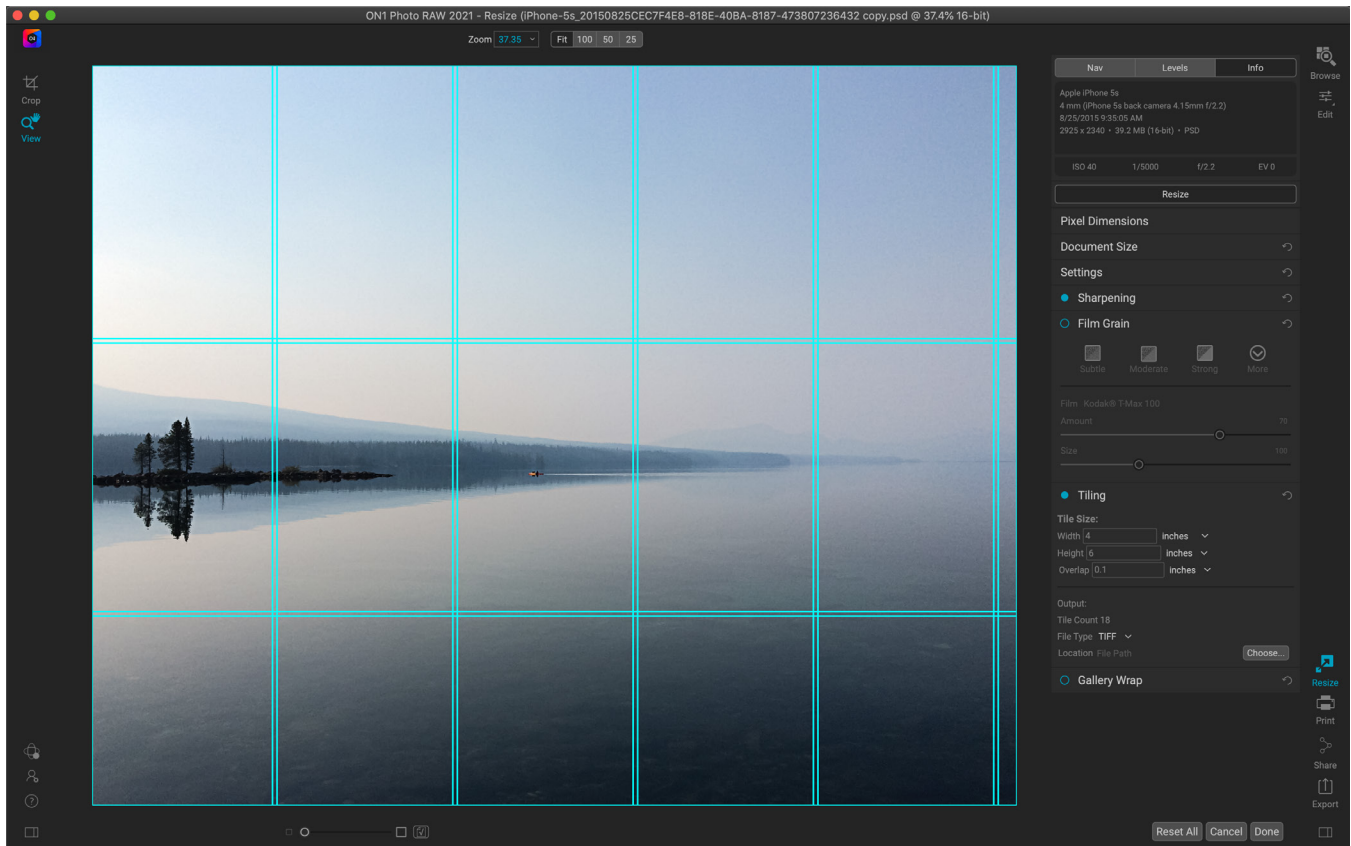
When you want to print big, but lack the big printer, Resize's Tiling feature lets you create flexible, tiled prints on smaller paper sizes.

The tiling feature in Resize divides an enlargement into smaller pieces so that the image can be printed on a smaller printer. For example, you might want to create a mural that is 8 feet tall by 12 feet wide, but your printer can only print 24-inch wide strips. With the tiling feature you could automatically create four separate files that are 24 inches wide and 8 feet tall, to create your mural in sections.

With the tiling feature all you do is specify the size of paper you have to print on and if you would like the pages to overlap. Then ON1 Resize will resize your image and section it down into the individual tiles.

To use the Tiling pane:

1. Turn Tiling on by toggling the on/off switch in the pane header.

2. Set the Width and Height fields to the size and orientation of paper that you wish to print on, or you can select the number of rows and columns instead.

3. Set the Overlap size. The overlap makes each tile overlap so you can tape multiple panels together and corrects for printer margins if you are not printing borderless.

4. Set the file type for the newly created files for each tile.

5. Set the destination folder for the new files. Each file will be named with the original filename and the tile indicated in the filename.

The preview will show cyan guide lines for each tile that will be created. The bottom of the Tiling pane will tell you how many tiles will be created.

GALLERY WRAP
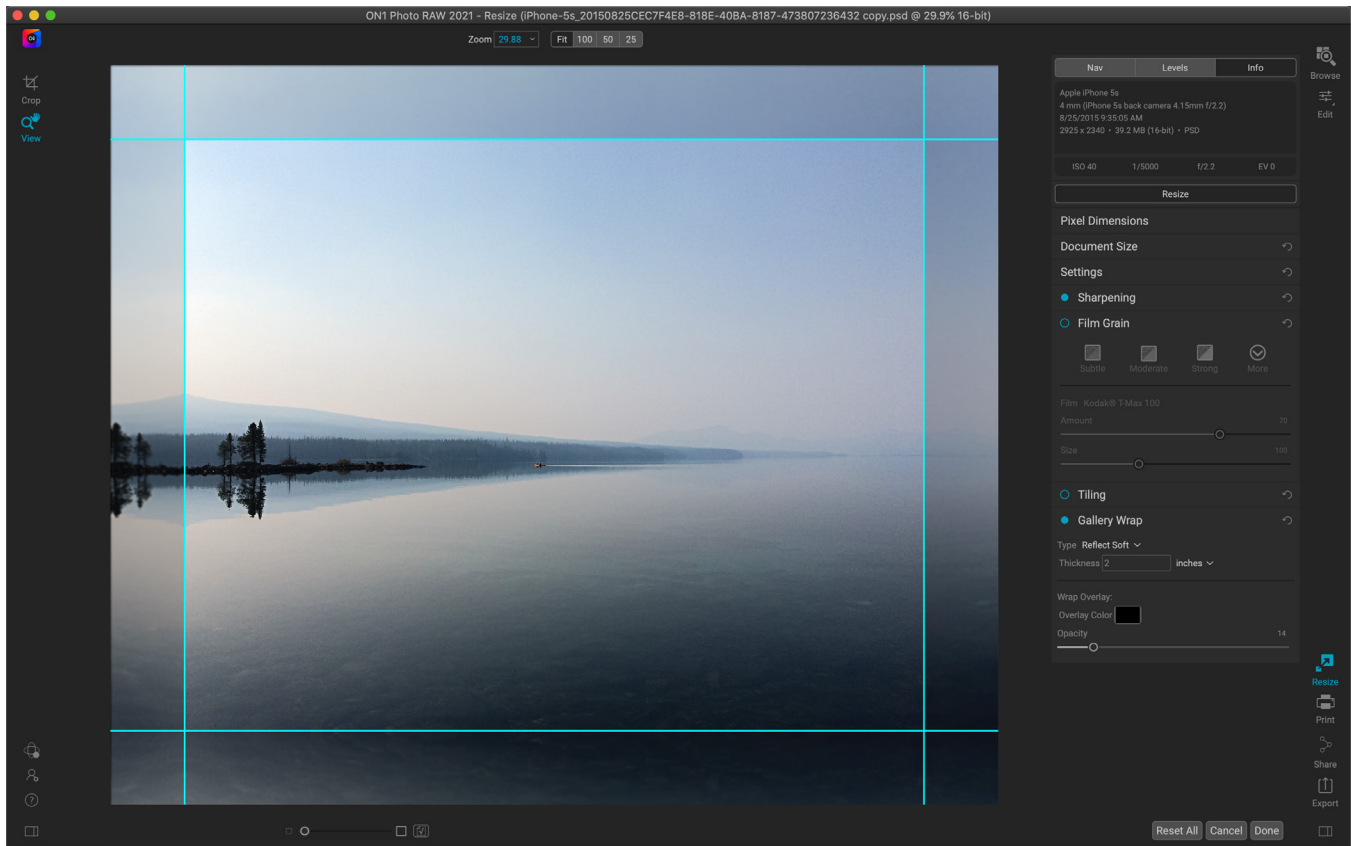
The Gallery Wrap feature lets you choose from four different wrap types, with adjustable thickness and opacity settings for the edges to be wrapped.

The Gallery Wrap feature is designed to help you print on canvas. When making enlargements for canvas it is common to wrap a portion of the image around wooden stretcher bars. These can be several inches thick and help mount the canvas. These are commonly called gallery wraps. However, if you had important detail near the edges of the image, it might be lost in the wrapping process. ON1 Resize's Gallery Wrap feature automatically creates extended margins by reflecting or stretching the areas near the edge of the image without having to sacrifice any of the original image. You can select the thickness of the mounting bars and use different options for creating additional margins.

To use the Gallery Wrap feature:

1. Turn on the Gallery Wrap feature by toggling the on/off switch in the pane's title bar.
2. Set the Thickness control to the amount of margins you would like to add. A good rule of thumb is to use the thickness of the stretcher bars, plus half an inch.
3. Select the Type you would like to use (see the list below for details on the different options).
4. If you wish to add a color overlay to the gallery wrap wings set the color and opacity.

The Gallery Wrap feature has several settings for adding margins and adjusting the look of the wrap:

- **Reflect**: Copies an area equal to the thickness setting around your image, then flips each side and adds it as the margins. This is a good general-purpose technique.
- **Reflect Soft**: Does the same as the Reflect method but softens the added margins.
- **Stretch**: The Stretch method takes a small area around the edge of the image and stretches it

to add the margins.

- **Stretch Soft**: Does the same as stretch, but softens the added margins.

The Thickness slider controls how thick your canvas stretcher bars are. Two inches generally works well for most gallery wraps.

You can darken the wrap or add a solid color to the wrap area with the Overlay Color and Opacity sliders. (The Opacity's default is 0, which means that there is no color overlay added.)

PRESETS

Resize has a preset system built into it, much like the one used by Develop and Effects, but which is designed to help you get very specific crops for a wide range of paper and printer types. These include settings for photo lab print sizes, and many Epson, Canon and HP large-format printers, with Matte, Resin Coated, and Canvas types.
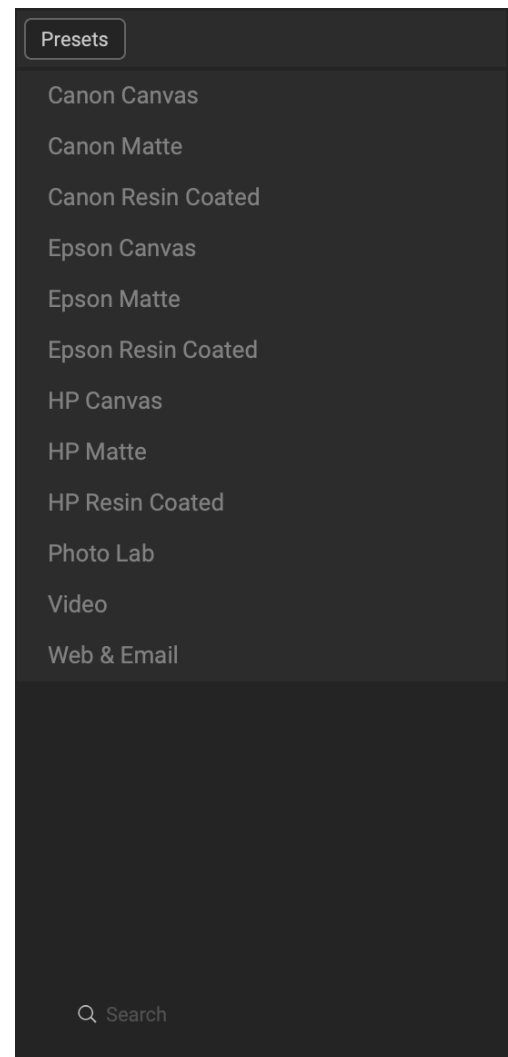
In addition to being able to set document size and settings, and settings in any of the other panes, Resize presets always contain a Crop adjustment. What that means is that any time you apply a preset, Resize selects the Crop tool and places the crop overlay on top of your file. There, you can move the overlay to the appropriate crop area (or resize the crop) for your photo.

To apply a preset, choose the category you would like to use from the Presets panel. The category will expand to a list of the available presets for that group. Then, just click on the preset you want to apply.

Saving a Preset

Once you have your settings that you wish to save, go to the Preset menu and select Save Preset, and choose a category you would like to save it in. If you have applied a preset to an image and make adjustments to any of the settings in the left panel, you can update that preset with the new setting by choosing Update Preset with Current Settings from the Preset menu.

To delete a preset, right-click on the preset in the Presets Browser and choose Delete Preset.

Presets
Canon Canvas
Canon Matte
Canon Resin Coated
Epson Canvas
Epson Matte
Epson Resin Coated
HP Canvas
HP Matte
HP Resin Coated
Photo Lab
Video
Web & Email
Q Search

NOTE: You can also import and delete Resize presets from within the Extras Manager. See "Extras" on page 9 for more.
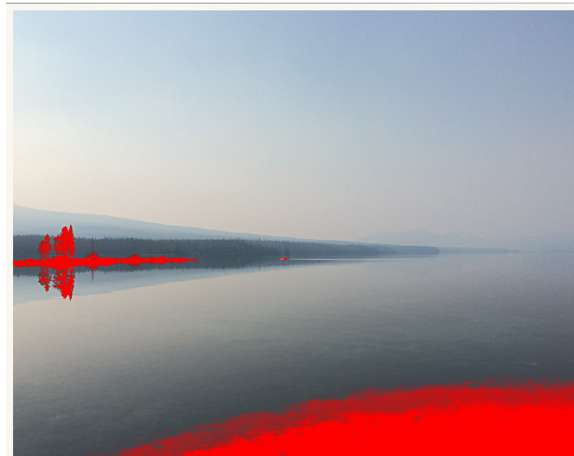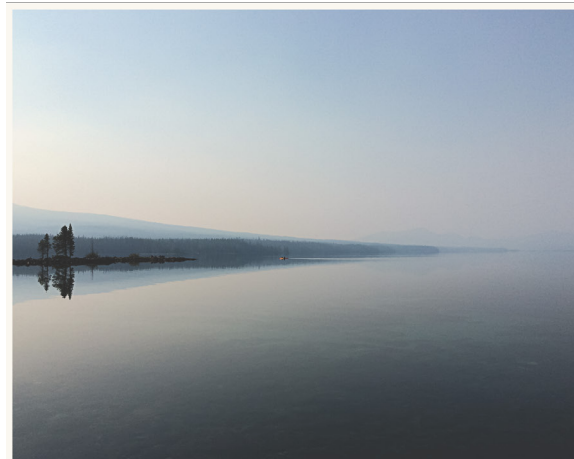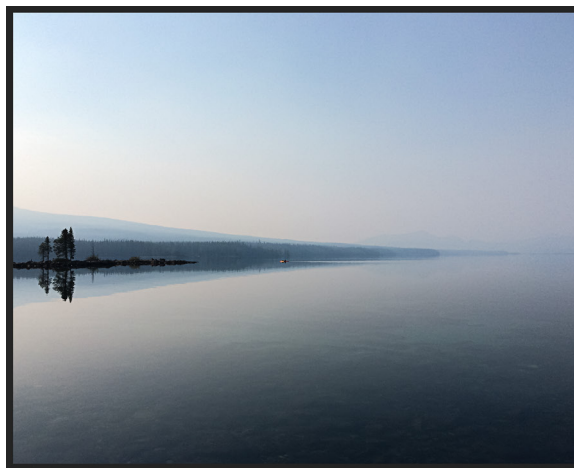
SOFT PROOFING IN RESIZE

ON1 Photo RAW's soft proofing feature lets you see how a photo will look when printed, using the color profiles that get installed with your printer. Soft proofing helps you determine where there might be issues when you print, so that you can adjust your tone, color and effects to give you a print that is closer to your editing vision.

Normally, when you're viewing an image in Photo RAW, you are viewing it through the lens of your monitor's display profile. The color gamut of your computer's display is wider than that of most photo printers, which means that some colors you are able to view on-screen are not reproducible when you print. When this happens, the color profile conversion that happens in the print engine will cause substitutions of colors that the printer cannot print to the closest color that it can. This means that your image could have subtle (or broad) shifts in color, especially in certain color ranges.

Soft proofing is turned on via the View menu, or by clicking on the soft proofing icon to the left of the Preview button at the bottom center of the main Resize window. The background of the main preview window will change to approximate the color of the paper you're profiling.

Additional soft proofing options are available underneath the Enable Soft Proofing command in the View menu. The options are as follows:

- **Gamut warning:** When checked, this displays colors in the image (via a red overlay) that don't correspond to the current printer profile being soft proofed.

- **Profiles:** The Profiles submenu lists the currently available printer profiles. Choosing one will change the on-screen display to use that profile.

- **Intent:** Photo RAW offers two different rendering "intents" when soft proofing, which are used to convert the color from display to print. Perceptual shrinks the color gamut during the conversion, which works to preserve the relationship between colors in the image. The other intent type, Relative, only converts colors that are outside the current color gamut, but this can sometimes cause two colors, one in gamut, and one outside, to be identical after conversion.

These three screen shots show the results of soft proofing options, as viewed in Resize. The top image is with soft proofing off (and is using the display color profile). The middle image is with soft proofing turned on, and using a printer profile for Epson's Exhibition Fiber Paper. The bottom image has the Gamut warning turned on; out of gamut colors are highlighted by the bright red overlay.

Neither rendering intent is perfect or desired; it often is a matter of the makeup of the image, your editing intent, the paper being printed on, and so forth. Often, you'll want to switch back and forth between Relative and Perceptual, seeing which gives you a better print.

- **Simulate Paper and Ink:** Turning this setting on will cause Photo RAW to use the white point for the chosen paper type (instead of the white point of your monitor), and the paper's actual black density (instead of the display's black point). If you're trying to match a print, you will usually want this setting turned on.

Adjusting images with soft proofing is often a bit of trial and error. It's easy to get caught up in eliminating out-of-gamut colors, but most modern photo printers—both home printers and online print services—do a pretty good job of approximating colors properly.

> **NOTE:** Since you can't edit the tones in your photo from within Resize, it's a good idea to perform a soft-proof check in the Edit module before taking an important image into Resize.

The biggest thing you want to be looking for when viewing a soft proof is tone, contrast and color accuracy between screen and print. When using a home printer, use test prints to hone in on the right mix of Edit module adjustments. Photo RAW's Versions feature can be extremely helpful when you're tweaking settings to get a print just right (see for more on working with Versions).

UNDERSTANDING RESIZE: HOW BIG CAN I PRINT?

People often ask how large a print can be made with ON1 Resize. If your original image is sharp, has good details and little noise, you could go as large as 1000% of the original size. 1000% is ten times the size of the original file. For example, an original file that is 8" x 10" could be resized to 80"x100". Viewing distance plays a big part of this. Standard viewing distances are two-times the diagonal of a print. For example, for an 8"x10" it would be about two feet away. An 80"x100" would be about 21 feet. That seems like a lot but that image is almost 7'x9'. Keep in mind that many photographers scrutinize their images closer than standard viewing distances.

Images are perceived in color, tonality and sharpness. Other interpolation techniques maintain color and tonality but sacrifice sharpness by "inflating" the image uniformly. The image still looks familiar but will not be crisp. Depending on the amount of interpolation, this can be severe and noticeable even at standard viewing distances. ON1 Resize maintains the color, tonality, and sharpness of an image at all sizes. It will always look the same when viewed at the proper distances.

It is unrealistic to assume that the fidelity when viewed at 100% will be the same for an 8×10 and an 80×100 created by ON1 Resize. ON1 Resize will maintain the edges which perceptually make the image sharp, but it cannot create detail where there was none in the past. When the shutter is pressed, a finite amount of detail is captured. A good way to think about this is to look at an insect on a leaf. If you look at it with a magnifying glass, you will see more detail than you did than when looking at it with the naked eye. Now if you take a digital photograph of that same insect and look at it in the computer and zoom in past 100% you do not see any more detail. The information you see is limited by what the camera captured. ON1 Resize works the same way, it cannot create new detail but instead takes the finite amount of detail available and increase it in size.

ON1 Resize isn't magic. We have all watched *CSI*, where they take a security photo and enlarge the reflection in the victim's eye to see the killer, with results that look amazing. This is science fiction. You cannot create detail where there was none before. But if your original file has good detail and little noise, you will be able to make very good looking enlargements from your files. This is what ON1 Resize does better than any other software.

HOW MUCH RESOLUTION DO I NEED?

To answer this, you need to know two things:

1. The size of the print you need to make.
2. The resolution that your printer needs for best results.

The size of the print is as large you would like. This may be limited by the size of your printer. Resolution is the density of the pixels for a given distance, usually measured in pixels or dots per inch. Most modern inkjet printers print anywhere from 1200 to 4800 dots per inch (what the printer manufacturers really mean is 1200-4800 droplets of ink per inch). Inkjet printers use many tiny round droplets of 4-12 ink colors to reproduce one square pixel in your image that could be one of any millions of colors. A common mistake is to set the resolution of the file to the resolution of the printer. In all but a few special printers this will lead to huge files that will not print well, if at all. The secret is that the human eye cannot see more than 250-300 pixels per inch. So the ideal resolution for your files should be close to this. Once you know the print size and resolution, it is easy to use ON1 Resize to resize your file to the desired output. Simply input the resolution and then either the print width or height. You'll see that the corresponding dimension is automatically filled in by ON1 Resize based on the proportions of your image.

Keep the proportions in mind because the proportions of film, digital camera sensors and paper can all be different. For example, most digital camera sensors are proportioned so that the height is two-thirds the width or 1:1.5; While the most common paper size, in the US, is the letter which is 8.5×11 inches or about 1:1.25. These kind of proportion mis-matches are common and require that the original image be cropped to fit the proportions of the paper size. If your image cannot be cropped without ruining the composition then you will need to adjust your print size to a longer dimension.

Resizing an image larger than the original size requires new pixels to be created. This process is called interpolation or resampling. There are many mathematical ways, called algorithms, to do this. The most common method used by many pixel editing applications is called bicubic interpolation. Bicubic along with its newer variants bicubic smoother and bicubic sharper work by averaging a small group of neighboring pixels to determine the color value of the new pixels to be added. While this technique is fast, it does not distinguish edges so there is a uniform loss of sharpness and detail across the image.

Resize's patented scaling algorithm is fundamentally different from bicubic or other interpolation methods. While other methods sample nearby pixels and decide new pixel values one by one, ON1 Resize uses a sampling technique called Fractal Scaling. Fractal Scaling samples nearby "blocks," square groups of pixels, and varying sizes, compares them to smaller versions of the original image and mosaics these patches together to create a larger version of the original. By doing this repeatedly, often the characteristics of the image like edges, smooth areas, and textures are reinforced for each larger version. Noise is de-emphasized and sharp details are maintained. All this number crunching may take a bit longer than the single pass interpolation methods like bicubic, but good things come to those who wait and the reward is far superior results.
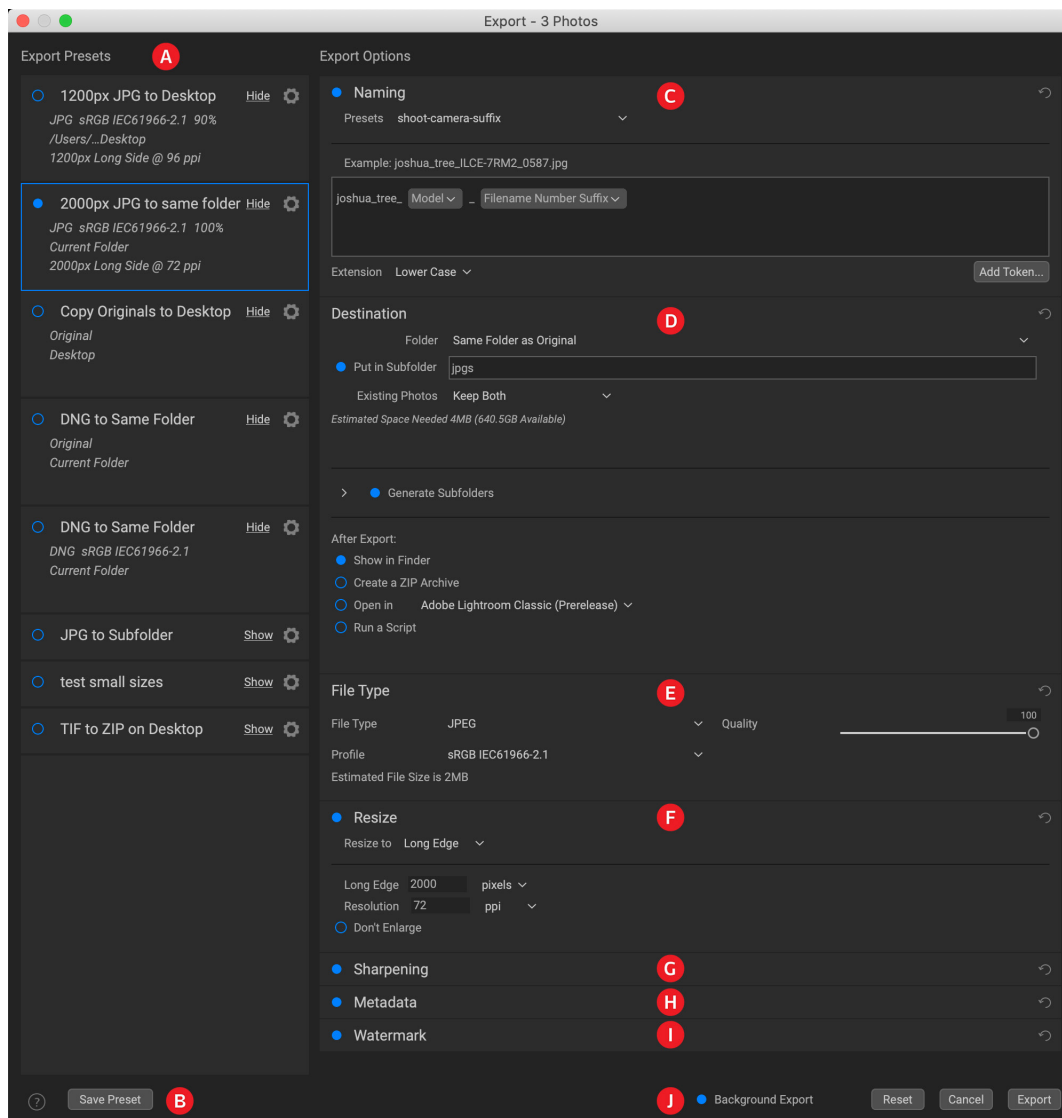
EXPORT
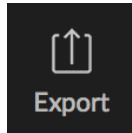
Export is a special function that is available throughout ON1 Photo RAW 2022, whether you're working from within Browse, Edit or Resize. The Export window gives you much of the power of Resize in an easy to use panel, letting you export your photos with incredible flexibility, ease and control.

The Export window is separated into two panels: Export Presets and Export Options. The Options panel contains specific types of options—file renaming, destination folders, file type and more—that you can use when you are exporting images from Photo RAW. If you find that you are using a specific set of options all the time for your workflow, you can create a preset and apply that whenever you use Export.

The contents of the Export window include:

A. **Export Presets:** The current preset (if used), will be represented with a selection box around it, and the filled circle to the left of the preset name means that it will be used when the Export button is pressed. To use the Export Options panel without any preset applied, turn off all of the presets in the list, and click in the current preset once.

B. **Save Preset:** Lets you save the current set of export options as a preset.

C. **Naming:** Renames the exported file based on criteria added to the rename box in the panel.

D. **Destination:** Lets you set the destination of the exported files. *(required)*

E. **File Type:** Sets the file type for each exported file. *(required)*

F. **Resize:** Adjusts the size for each image.

G. **Sharpening:** Applies sharpening to the exported images.

H. **Metadata:** Adds/removes metadata from the export.

I. **Watermark:** Lets you add a text or graphic watermark to an exported image.

J. **Export/Cancel:** Starts the exporting, or cancels it and returns you to Photo RAW.

Export Options

NAMING

The Naming pane gives you extensive controls for creating customized filenames using tokens in the entry box inside the pane, as well as with any custom text entered directly into the entry box. You can use any combination of tokens and text in the entry box, and the Example label directly above the box will display what your new filename will look like, using the first item in the export group.

To use this feature, click the control circle to the left of the label in the panel. Add any custom text, or click the Add Token pop-up menu to add tokens based on information associated with the image, including filename data, date and time information, and associated metadata There are four submenus in the Add Token menu:
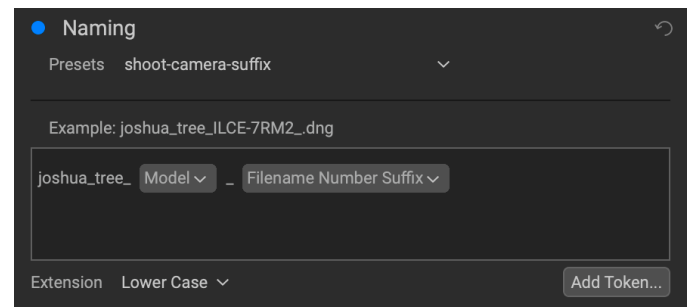
- **Filename**, which includes options for using the original filename, number suffix (taken from the image as recorded by the camera) and enclosing folder name.
- **Date/Time**, which includes a list of date (year, month, day) and time data that can be combined in various ways.
- **Sequence**, which adds an incremented number to each renamed file in the batch, as well as the total number of files in the batch, with options for leading zeros in the resultant filename.
- **Metadata**, which lets you add specific EXIF and IPTC metadata to the filename.

To build a rename sequence using tokens, click on the Add Token button, and choose the appropriate token from the pop-up menu. The token will be added as a shaded item in the text field, and the Example item above the text field will show a sample of a renamed file using the current set of tokens and custom text. To change an existing token, click on the down arrow on the right of the token, which will display the full set of tokens. To delete a token, double-click on it and press the Delete key.

Custom text can be added anywhere in the entry field. You can click the cursor at the beginning or end of a token (or in between tokens) and add spaces, dashes, underscores and any other text you wish to be included in each renamed file. Each change you make will be updated automatically in the Example label.

The Presets pop-up menu at the top of the Rename window includes a set of common batch combinations that you can use as a starting point. You can also create your own batch-rename presets: build the rename options you wish, and choose Save New Preset from the bottom of the Presets menu. You can also update an existing preset and delete presets from this menu.

Because the Rename process is not undoable, make sure you use the Example field to check that your text and token combinations give you the filenames you expect for your batch process, and adjust as needed. When you're sure, click Apply, and Photo RAW will rename all of the files.

> **NOTE:** A complete list of the tokens used in the Rename window, with explanations, can be found on .

DESTINATION

The Destination pane is where you set the desired location for the exported images. At minimum, you must specify a destination folder for your export, but the pane has a number of options for adjusting the export location:

- The **Folder** pop-up menu lets you choose the same folder as the original images, another folder, or, can be set to ask for a destination every time, which can be helpful when you're using an export preset.

- Checking the **Put in Subfolder** option will export the images to the folder— or, create a new folder, if it doesn't exist—specified by option's text field.

- The **Existing Photos** pop-up is for those times when there might be a naming conflict within the destination folder. Replace will overwrite the file with the new one being exported, Skip will leave the destination file alone and not export the new file, and Keep Both will add a number '1' to the end of the filename of the exported file, preserving both files.

- **Generate Subfolders** will subdivide the export based on the exported file's metadata, creating subfolders as necessary—or, if the folders exist, placing the exported file into the appropriate subfolder. This option uses the same token-driven scheme (and presets) used in the Naming pane.

- **After Export** lets you determine what to do when Photo RAW completes the exporting process. Options include displaying the image location in the MacOS Finder or Windows
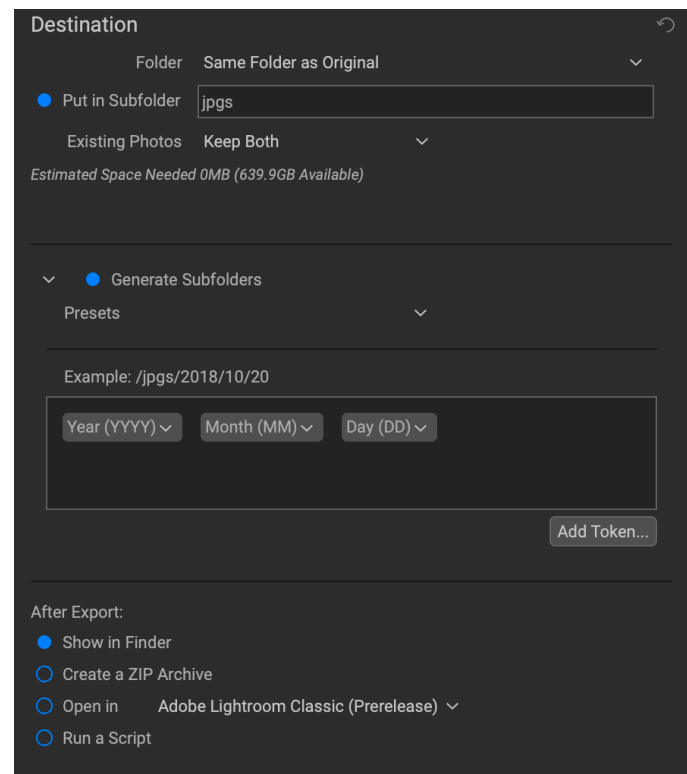
Explorer, to create a ZIP archive of the exported group, to open in another editing application, or to run a script.

FILE TYPE

Like Destination, File Type is the other required element for using Export. Photo RAW can export in DNG, PSD, TIFF, JPG and PNG formats. With the exception of DNG and PNG, each file format has specific options in the pane:
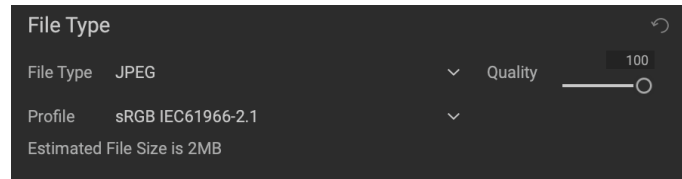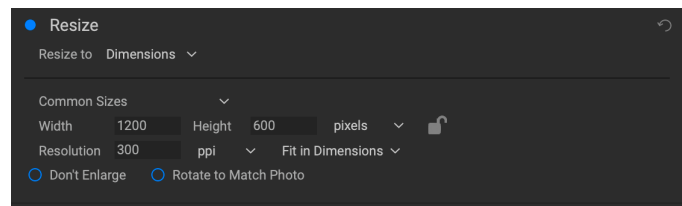
- **Original** includes options for embedding metadata and saving an ON1 sidecar file with the exported images.
- **JPEG** includes options for JPEG quality and for attaching a color profile.
- **Photoshop** includes options for attaching a color profile, bit depth, and whether to flatten any layers in the original image.
- **TIFF** includes options for image compression (none, LZW or ZIP), attaching a color profile, bit depth, and to preserve transparency.
- **DNG** and **PNG** have no additional options.

The File Type pane also includes an estimated file size for the first item in the group.

RESIZE

The Resize pane lets you adjust the finished dimensions of the exported photos, using the patented Genuine Fractals technology found in the Resize tab of Photo RAW. It has seven options for export: Dimensions, Long and Short Edge, Width and Height, Megapixels and Percentage. Each option has a different range

The Resize pane, with the Dimensions option open.

of settings, and all have a setting for resolution (in pixels per inch, or ppi), as well as a Don't Enlarge option, which, when set, will not upscale a file past its native image dimensions (but will still export the file).

The **Dimensions** option is the most complex of the six Resize options, letting you set the exact pixel dimensions of the exported files, in terms of width and height. This option is best for when you are exporting single images, when all of your exported files have the same aspect ratio and orientation, or when you wish to fit the exported images to an exact size.

The Common Sizes pop-up menu at the top of the pane options lets you set the final dimensions to any of a broad array of common paper, photographic ratio, square and video formats. You can also create your own specific sizes for re-use via this menu.

Click the lock icon to resize the images proportionally as you enter either the width or the height, or, if you wish to fit the images to an exact width and height, click the lock icon to turn it off. If an exported image doesn't exactly fit the dimensions you set for Width and Height, Export will do one of two things, depending upon whether you have Fit in Dimensions or Fill Dimensions set in the pop-up to the right of the Resolution box.

- Fit in Dimensions will fit the exported file inside the boundaries of the width and height settings.

- Fill in Dimensions will zoom the exported image to completely fill the boundaries of the width and height settings, essentially cropping the exported image. If the image's aspect ratio is different from the width and height settings, the image will be filled from the center.
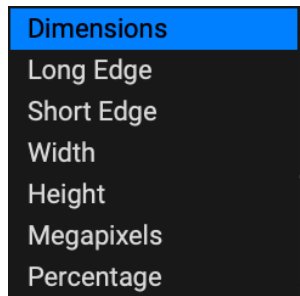
The Dimensions options include one more setting, Rotate to Match Photo, which, when checked, will rotate an exported photo to maximize its orientation. For example, if you exported a group of images to fit a landscape orientation (longer width than height), any image that was in portrait orientation (longer height than width) would be rotated during export.

The remaining options in the Resize pane include:

Long Edge and **Short Edge** are useful when you want to lock one edge to a specific length or width and don't care about the sizing of the other edge. Simply choose which option is the important one for your photos, enter the dimension, and Export will resize your images proportionally based on the chosen setting. When you're exporting a group of images with different orientations (landscape or portrait), these options will ensure that all images have the same long or short edge dimension.

Resize has seven options for exporting images.

Width and **Height** will resize all of the images proportionally to the width or height defined, regardless of orientation. Exporting photos with different orientation will result in the width or height of every image being the same, depending upon the setting chosen.

Megapixels will export images to a specific megapixel count, while **Percentage** will enlarge or reduce the size of the exported images. Percentages below 100 will reduce the image, while those above 100 will enlarge the image.

SHARPENING

The Sharpening pane has two modes, Sharpen For and Manual. The Sharpen For pop-up menu lets you choose from six options, based upon your final intent. There are four options designed for print output, Glossy Paper High and Low, and Matte High and Low, and two option for display output (for social media or online sharing), Screen High and Low.

The Manual setting provides a bit more control over the output sharpening, letting you adjust the Amount (overall strength), Radius (detail) and Threshold (masks out areas that shouldn't be sharpened based on contrast).

For more specifics about the Manual sharpening options, see the Sharpening filter on page 71.
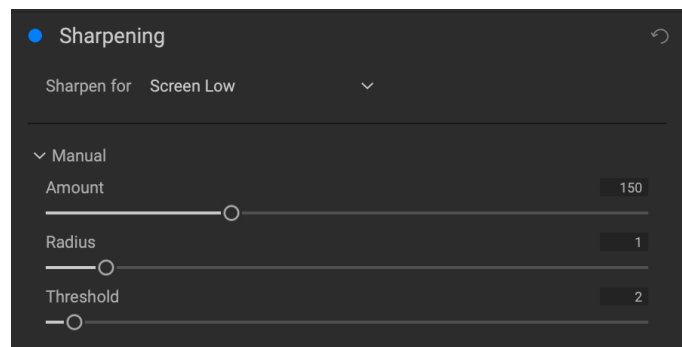
METADATA

The Metadata pane lets you set which pieces of metadata are exported—or not exported—with the images in the export set. You can choose to export all Metadata or by clicking the control circle to the right of the All Metadata label. If you click that label off, you can then select which metadata items you wish to save by clicking the appropriate label.

The metadata information exported is the same data found in the Metadata pane in Browse, and any metadata presets you have saved will be available from the Presets pop-up menu. For specifics on the different types of data represented in the Metadata pane, see page 38.

When checked, the Remove Unmanaged XMP button only exports metadata that is represented in Photo RAW's Metadata pane; any other unmanaged image metadata from other apps will not be included.
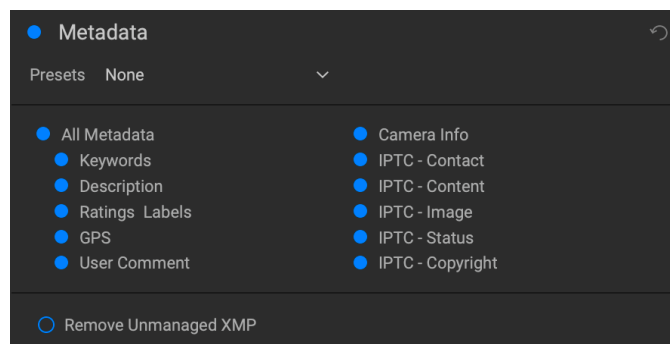
WATERMARK

The Watermark pane adds either text- or graphics-based watermarks to an image, with options for size and positioning, opacity, font type, and more. You can import your own logos and save either watermark type as a preset for frequent use.

The Watermark pane also gives you a representation of your chosen watermark (on the first image in your export group), so you can adjust the parameters of the watermark precisely.

To create a new watermark, turn on the pane by clicking on the control circle to the right of the label. Choose either a preset from the Presets menu or click on the Add Watermark button in the lower right of the pane and choose either Text or Logo from the pop-up menu. Once you've selected a type, the bottom of the pane will open with settings for the chosen option. If you change your mind, click the Cancel button to the right of the Logo or Text labels.

Using graphics-based watermarks

The Logo section of the Watermark pane lets you use either watermark files imported via the Extras Manager (see page 9), which will be displayed in the File pop-up at the top of the Logo section, or by clicking on the Import button to the right of the menu (which will add them to the menu).
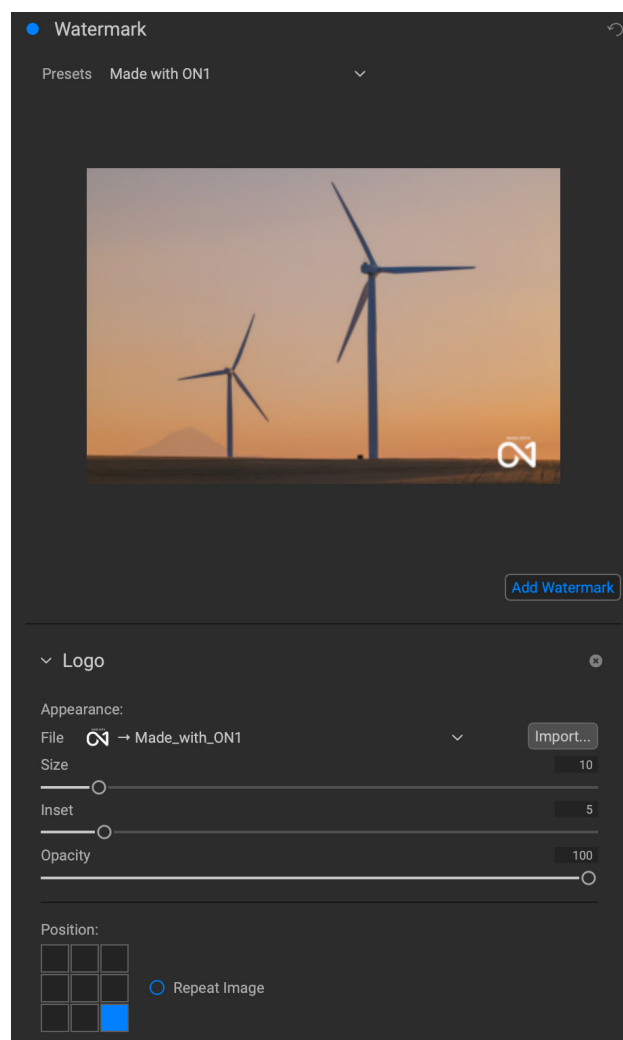
Use the Position grid at the bottom of the pane to place your watermark, and use the Size and Inset sliders to move it within the area chosen. The Opacity slider adjusts the transparency of the watermark on the final image.

The Repeat Image button will repeat the logo graphic rightward across the image from the location chosen in the Position grid. If you wish to repeat the watermark across the entire image, choose one of the sections on the left side of the Position grid.

When working with graphics-based watermarks, make sure your watermark file is sufficiently large for your usage. For example, if you want it to appear 2 inches wide on a 300-ppi image, your watermark needs to be at least 600 pixels wide. Or if you want it to appear across an entire photo—such as when posting to social media—it needs to be the same size as what you are exporting for the web, typically over 1000 pixels. Using a watermark file that is too small will create a pixelated watermark appearance. And, because most watermarks are overlays on top of an image, these files are usually PNGs with areas of transparency, although JPGs can also be used, depending on the logo.

Using text-based watermarks

When creating text-based watermarks, the Text section of the pane has an entry box for your watermark text, a font selection area, and the same Appearance and Position options found in the Logo section.

The text entry box can contain multiple lines of custom text, and has the same token-based naming options found in the Naming pane (discussed on page 209), which can be helpful when exporting informational slides or for other data-driven uses.

You can set the font from the pop-up menu, and the font color by clicking the swatch on the left side underneath the font name. The text style can be set to bold, italic or underline, and the alignment to left, center or right. If you'd like to add a background color to the text box, turn on the Color Fill button on the right side of the pane.

Use the Position grid at the bottom of the pane to place your watermark, and use the Size and Inset sliders to move it within the area chosen. The Opacity slider adjusts the transparency of the watermark on the final image.

Saving watermark presets

Both watermark types can be saved as a preset for re-use later. To save a preset, adjust your Logo or Text settings as desired, and choose Save New Preset from the Presets menu. If you wish to adjust an existing preset at a later time—with a new logo file, for example—choose the appropriate preset
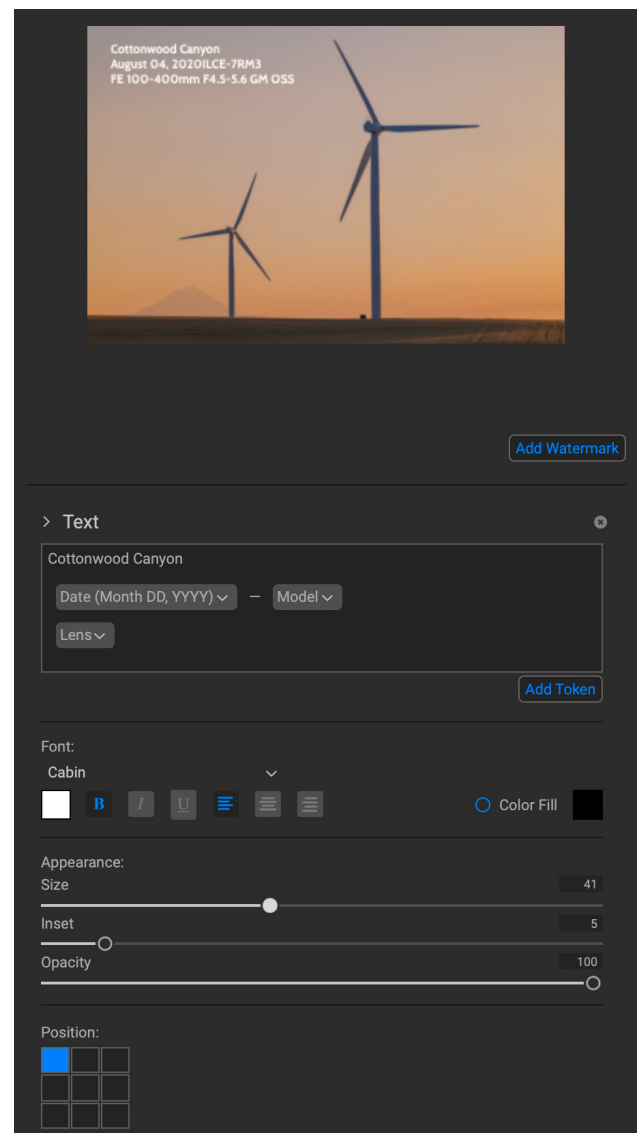
With text-based watermarks, you can not only create simple, single-line watermarks showcasing your business, but you can also create data-driven watermarks (using tokens) for presentations and the like.

from the Presets menu, make your changes, and choose Update Preset with Current Settings from the Presets menu. You can also rename and delete watermark presets from this menu.

Exporting and Export Presets

The Export window has been designed to offer as much or as little complexity as you would like. At its simplest, you can set the Destination and the File Type to your desired settings, leave all of the other panes alone, and click Export. Photo RAW will remember your last Export setting—including anything you did in the Naming pane—the next time you export, so you don't have to worry about which settings need to be set, and which ones don't. You can use the Show/Hide buttons in the title bar of each pane of the Export Options panel to display only those settings you want to see.

Once you have your settings the way you'd like, you can save them as a preset by clicking the Save Preset option in the Preset panel on the left. Then, when you click that item in the Preset panel, the Export Options will be set to the specifications of that preset.

The Export Presets panel will display a list of the currently available presets. If you have selected a preset, it will have a selection box (in the app's accent color) around it, and if the control circle is filled, the preset is on, meaning that clicking the Export button will export using that preset. If you don't wish to use a preset, click the control circles off on all of the presets in the list.

By default, each preset will have up to three lines of explanatory text underneath the preset name, displaying the file type—DNG, PSD, TIFF—and the Destination information. This can be helpful when you're scanning presets for a specific destination, but you can also collapse the preset to its title by clicking the Hide button in the title bar.

When you change the settings for a selected preset, Photo RAW will ask you if you wish to update the preset with the new settings either when you click the Export button to start the process, or when you switch to another preset with the Export window.

All presets include an informational view that lists the export file type, the destination folder, and resize information. If you don't wish to see that, click the Hide button to collapse the view to just the preset title.

It is possible to export more than one preset at a time. Every preset in the Presets panel that has the control circle set to On (filled) will be included in the export operation. This might be helpful to create backups on another disk, for example, or to build proxy versions for use while the original is being edited.

About Photo RAW's File-Naming Tokens

When using the Naming option in the Export window—or with Browse's Rename File (page 44) and Import Photos (page 42) functions—Photo RAW includes a broad set of tokens that you can use as part

of the strings to build complex file names, in conjunction with any custom text you wish to enter. These tokens draw on image metadata, including filenames, dates taken, and EXIF and IPTC metadata fields, and can be used in any number of combinations.

To build a rename sequence using tokens, click on the Add Token button, and choose the appropriate token from the pop-up menu. The token will be added as a shaded item in the text field, and the Example item above the text field will show a sample of a renamed file using the current set of tokens and custom text. To change an existing token, click on the down arrow on the right of the token, which will display the full set of tokens. To delete a token, double-click on it and press the Delete key.
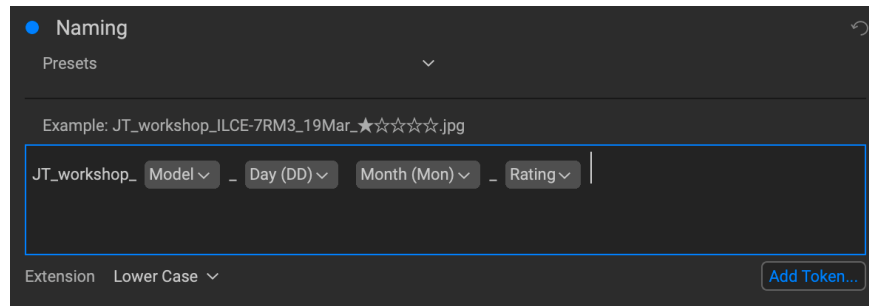
You can use a combination of tokens and custom text to rename files (in Export or Browse) to exacting specifications, all drawn from file information, metadata and more.

Custom text can be added anywhere in the entry field. You can click the cursor at the beginning or end of a token (or in-between tokens) and add spaces, dashes, underscores and any other text you wish to be included in each renamed file.

There are four categories of tokens, each with their own set of options: Filename, Date/Time, Sequence, and Metadata. A description of each is listed below.

FILENAME

The Filename tokens use information from the filename or the enclosing folder that the file resides in. There are three options, Filename, which adds the current filename of the file being worked on; Filename Number Suffix, which takes the index (shot) number from the original raw file, if available; and Folder Name, which grabs the name of the folder in which the renamed (or imported) file resides.
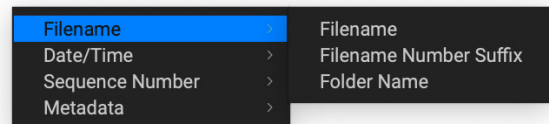
DATE/TIME

This submenu consists of 17 combinations of date and time data, as taken from the image's metadata. There are prebuilt date and time combinations (20220104, for example, for a year-month-date token) in the list, or your can build your own combinations out of the subtokens listed in this menu.

Year data can be presented in either 4- or 2-digit numbers, and Month data can be presented in month number, full name, or 3-letter abbreviations.
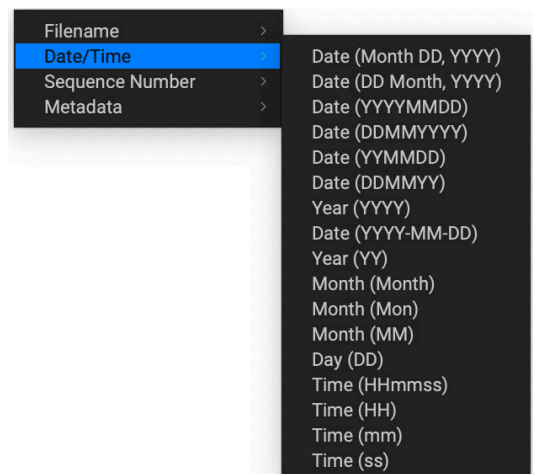
SEQUENCE NUMBER

The Sequence Number tokens come into play when exporting, importing or renaming a group of image files. There are essentially two tokens here, Sequence and Total, with options for padding zeros into each item. Sequence will take the group of images being worked on and, starting with the first item in the selection, will start at 1 and increment by one as each image is processed. The Total token will always be a single number—the number of items in the group being processed.

The combination of Sequence and Total tokens lets you create strings like '*filename_07 of 22*' as part of the new filename.
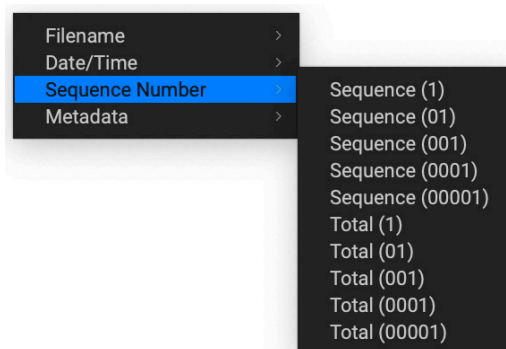
METADATA

This submenu has five items, each with its own submenu. All of the items create the chosen token based on the embedded metadata for each image being renamed, imported or exported. The specific text pulled from the Camera and IPTC tokens will be visible in the Metadata pane's EXIF (for camera-specific data) and IPTC (for IPTC data) tabs. The Ratings and Labels tokens are taken from any you have applied in Photo RAW.
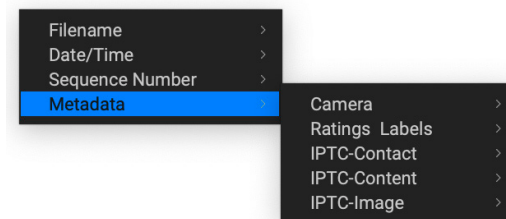
> **NOTE:** If there is no information in the specified Metadata token, it will be ignored during processing.

Camera

The Camera submenu includes 21 items, all of which are directly taken from an image's EXIF data. Not all cameras capture all of the items listed, but most of them save essential items like exposure information, focal length and more.

To look at the available camera information of any image, click the EXIF tab in Browse's Metadata pane (page 38).
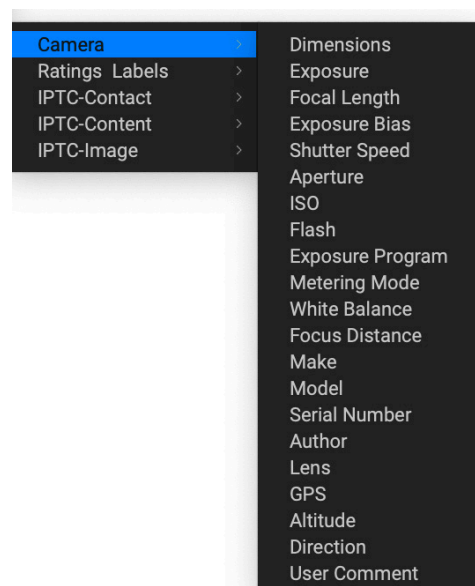
Ratings and Labels

The three tokens in the Ratings and Labels submenu pull information from any rating, label and like information you've made to images in Photo RAW.

The Rating token will add the number of stars an image is rated, while the Label token will add any color label information (red, yellow, green, blue, purple), and the Likes token will add Liked, Not Set, or Disliked to the image name.
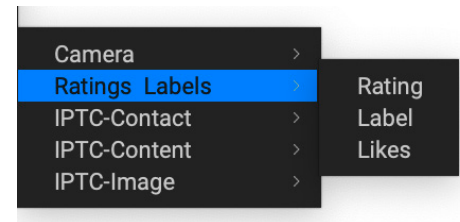
IPTC Metadata Tokens

IPTC (International Press Telecommunications Council) is an industry-standard metadata format, and offers much more detailed metadata information than EXIF. It historically has been used by journalists and stock photographers to catalog and tag photos, as well as add copyright information, captions, and other data. There are nearly 30 different tokens in the IPTC metadata submenus, which are divided into Contact, Content, and Image. All of these fields are visible in the IPTC tab of the Metadata pane in Browse (page 38), and can be added during the import process as well.
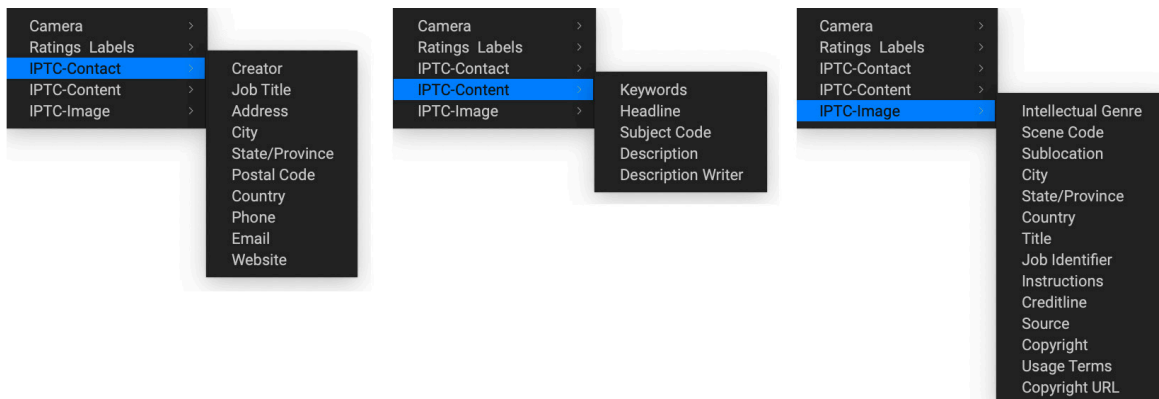
Using IPTC information makes the most sense when you have a strict method for importing and categorizing image data during import (or shortly thereafter).

PRINTING

ON1 Photo RAW 2022 has a flexible print engine that can print photos at any size. You can print photos individually; multiple photos package style, on a single piece of paper; and contact sheets for evaluating images. You can print from any module, even when using Photo RAW as a plug-in.
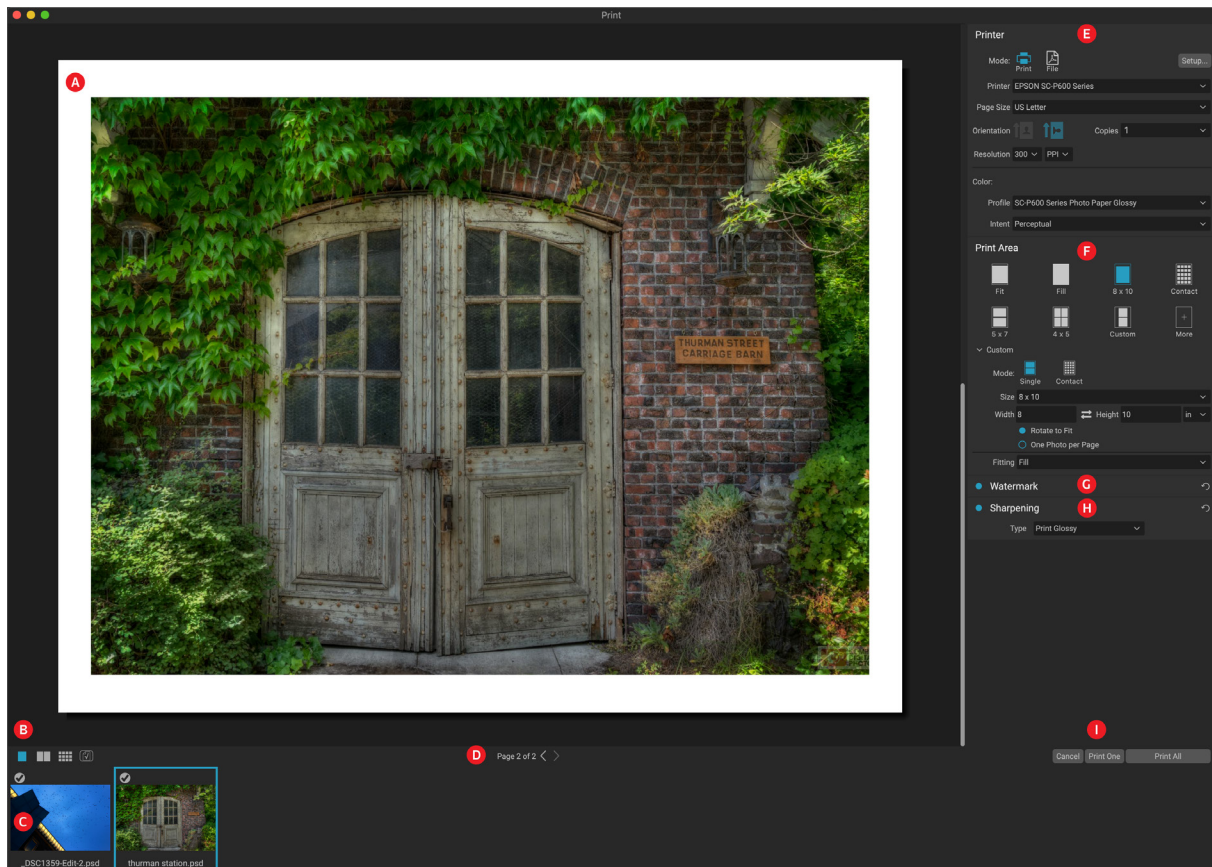
The print window can be opened by clicking on the Print icon in the module selector, or by selecting the Print command from the File menu. It has the following components:

A. **Preview:** Displays the photo or photos being printed.

B. **View Selector:** Lets you view the photos being printed individually, in facing-page view, or in grid view. The icon on the far right turns soft proofing on and off.

C. **Filmstrip:** Shows all of the photos that have been selected for printing, with check marks to turn printing on or off. (The Filmstrip is not visible when a single image has been selected for printing.)

D. **Page view:** Displays the number of pages being printed, and lets you move from page to page.

E. **Printer pane:** Contains options for output—printer or PDF—as well as printer, page setup, page size, number of copies, resolution, and printer profile and rendering intent.

F. **Print Area pane:** Contains options for fitting and selecting the print image size.

G. **Watermark pane:** For adding a watermark to printed photos.

H. **Sharpening:** Options for sharpening during the print process.

I. **Print/Cancel:** Print One (current image), Print All, or Cancel.

Printing Options

The four panes in the Print window—Printer, Print Area, Watermark, and Sharpening—each deal with a specific printing-related task.
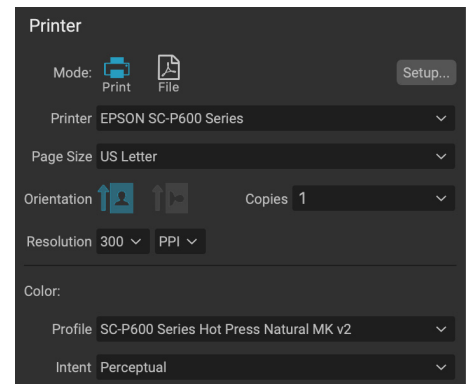
PRINTER PANE

The Printer pane is where you set the printer-specific features for your output. It has two modes, which are chosen by clicking on the icon at the top of the pane: Print, which lets you print to a connected printer, and File, which will print the selection to a PDF.

When choosing to output to a printer, you'll set the specifics of your printer, the paper size you wish to print to, the resolution, orientation, and the number of copies. When choosing resolution, make sure that you are printing at the printer's optimal resolution. Most photo printers, for example, work best with a file that has between 240 and 360 ppi. (Photo RAW will use its internal resampling engine to ensure that your photo is at the print resolution you choose.)

The Printer pane sets printer-specific options for the current print job. You can also choose to render the print job to a PDF file.

At the bottom of the pane is a section for choosing a printer-specific color profile; choose the media profile for the paper type you are printing to.

The rendering intent is related to the conversion of an image's colors to fit within the color range (or gamut) of the printer. The default intent, Perceptual, will change all of the colors in a photo proportionally to fit within the printer's range of colors. The other option, Relative Colorimetric will only change the colors out of the printer's gamut, to the closest in-gamut color. Depending upon the image, you might need to play with the intent settings, but Perceptual is usually the best place to start. (You can use Photo RAW's Soft Proofing feature to look at out-of-gamut colors in your photos. See "Soft Proofing" on page 71 for more.)

> **NOTE:** Photo RAW's Print feature will work with borderless printing options as well. Be sure to choose your printer's borderless options in the page setup pop-up. Different printers will have specific borderless settings, so check the manual to see how to turn borderless printing on.
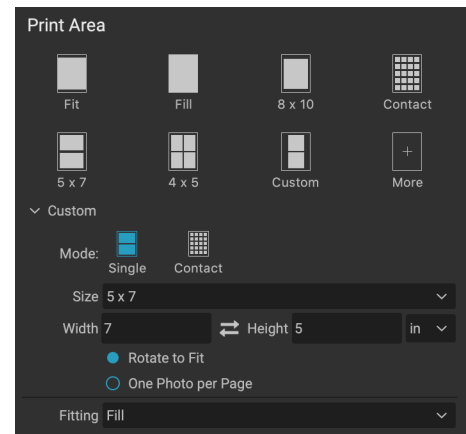
Printing to a file

In addition to sending images to a printer, you can also choose to export the current print job to a file. This can be helpful if you are submitting prints to an online service or to print remotely. To use this option, click on the File icon at the top of the pane. Photo RAW will ask you for a filename and a location to save the file. Choose a page size for the file from the Page Size pop-up, and adjust your print area settings. When you choose Print, Photo RAW will create a PDF of the photo (or photos) and save it with the name and destination you specified earlier.

PRINT AREA PANE

The Print Area pane is where you set the options for the size of the print, and how you wish your photos to be printed. You can also choose whether to print photos individually, package-style, or to create a contact sheet for evaluative purposes.

The top of the pane includes preset styles for either fitting the current photo inside the print size, or filling the entire print size; options for printing at common print sizes, including 8x10, 5x7, 4x6; and options for printing to a contact sheet. You can also create custom print sizes via the Custom section at the bottom of the pane; just set the width and height of the print size, and whether you wish to fit the image to the print size, or to fill the frame with it. If you would like to save this print size as a style,

The Print Area pane is for setting the actual print size of the photo or photos you are printing.

click on the More pop-up at the top of the pane, and choose Save as New Style from the menu. You'll then be able to recall that style from the More pop-up whenever you print.

If you are printing multiple photos, Photo RAW will attempt to put as many photos at your chosen print size on the paper size as defined in the Printer pane. To print only one photo per page, click that option at the bottom of the Print Area pane.

Page size vs. print size

It's worth understanding the distinction between the page size and the print size. In some cases, the two will be identical. For example, if you wish to print on 4x6-inch photo paper, you would choose that option in the Printer pane's Page Size pop-up, and then 4x6 in the Print Area's Custom pop-up. Depending upon the aspect ratio of your photo, you then might need to choose Fit or Fill to get the proper crop. Fit does exactly what it sounds like: it will fit the entire photo within the bounds of the photo's dimensions, which means that there could be some extra white space around the final print. Fill will resize the photo to fill the dimensions of the chosen print size, centering the image.

In our example, a 4x6-inch print has an aspect ratio of 2:3. If the photo you are printing has that aspect ratio, then Fit and Fill do the exact same thing: the photo will fill the print area without any cropping.

For package printing, where you wish to generate multiple prints on a larger sheet of paper, you'll set the specific size paper you are printing to in the Printer pane, and then set the appropriate print size for each photo in the Print Area pane.

WATERMARK PANE

The Watermark pane adds an overlay to the printed image, and is most often used for your logo, signature or copyright. Watermarks generally need a transparent background, so make sure your watermark file is a PNG or PSD.

The module has the following options:

- **Choose**: Click the Choose button to select the file you wish to use as your watermark. Once you've added a watermark file, it will be saved to the Logo File pop-up.
- **Size**: This slider controls the size of the watermark file.
- **Inset**: This will determine the percentage in which the file is inset from the edge, based on the Position (see below).
- **Opacity**: This sets the opacity of the watermark.
- **Position**: This grid sets the location of the watermark. Click on the square of the location you desire.

When working with watermarks, make sure your watermark file is sufficiently large for your usage. For example, if you want it to appear 2 inches wide on a 300-ppi image, your watermark needs to be at least 600 pixels wide. Otherwise, it could appear pixelated on the print.
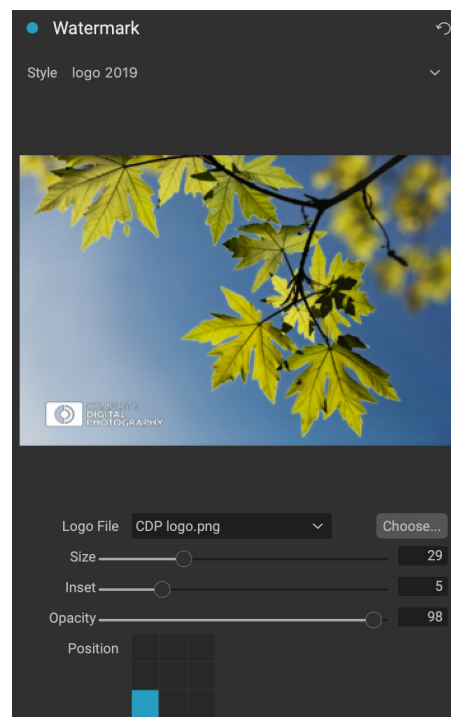
SHARPENING PANE

In most cases, and depending upon the media type you print to—glossy papers often benefit from additional sharpening, for example—you'll need to add an additional sharpening step when printing. This is an additional level of sharpening beyond anything you might have applied in the Edit module.

The Sharpening pane lets you select a type of sharpening that will be applied to your photos during the printing process. The pop-up menu has a set of options for general sharpening, including ones for a standard print, glossy papers, details, high-pass sharpening, and many more. Depending upon the image, you might need to play with the settings here; performing test prints on small sections of a photo can often be quite helpful in determining the proper level of sharpening in a print.
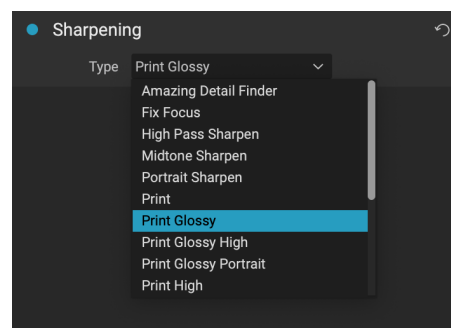
Use the Sharpening pane to add additional sharpening to your printed image.

Basic printing with Photo RAW

Printing is available throughout the ON1 Photo RAW 2022 interface. If you are viewing a photo in either the Edit or Resize modules, or if you have an image selected in Browse's Grid or Detail views, clicking the Print icon will open the Print window with that image. There, you can set any of the options in the four panes on the right, and click the Print button to output your photo.

If you wish to get an on-screen proof of the final image before you print, using the chosen color profile for the media type you are using, click the soft proofing icon underneath the preview area.

PRINTING PHOTOS FROM ON1 CLOUD SYNC DEVICES

Any photo that can be displayed on your computer can be printed, even proxies of photos that reside on one of your ON1 Cloud Sync devices. In most cases — especially at smaller print sizes (8x10 and under), the proxy photo will have more than enough resolution to print at high quality. If you are printing at larger sizes, or wish to use all the available image data for your photo, either copy the file from your synced device to your computer, or change the sync setting for the photo's enclosing folder on the synced device, so that the original is in the ON1 Cloud.

PRINTING MULTIPLE PHOTOS

To print multiple photos—as a package or contact sheet—select the images you wish to print from the Grid or Filmstrip views (in Browse or Edit), and click the Print icon. The photos you've selected will be displayed in the filmstrip at the bottom of the window, and the preview area will display the current page (at the printer's page size) and print size settings. If you are printing a lot of photos at one time, you can flip from page to page via the Page View buttons under the preview. To see more pages, click on the Facing Pages or Show All Pages icons at the bottom left of the window.
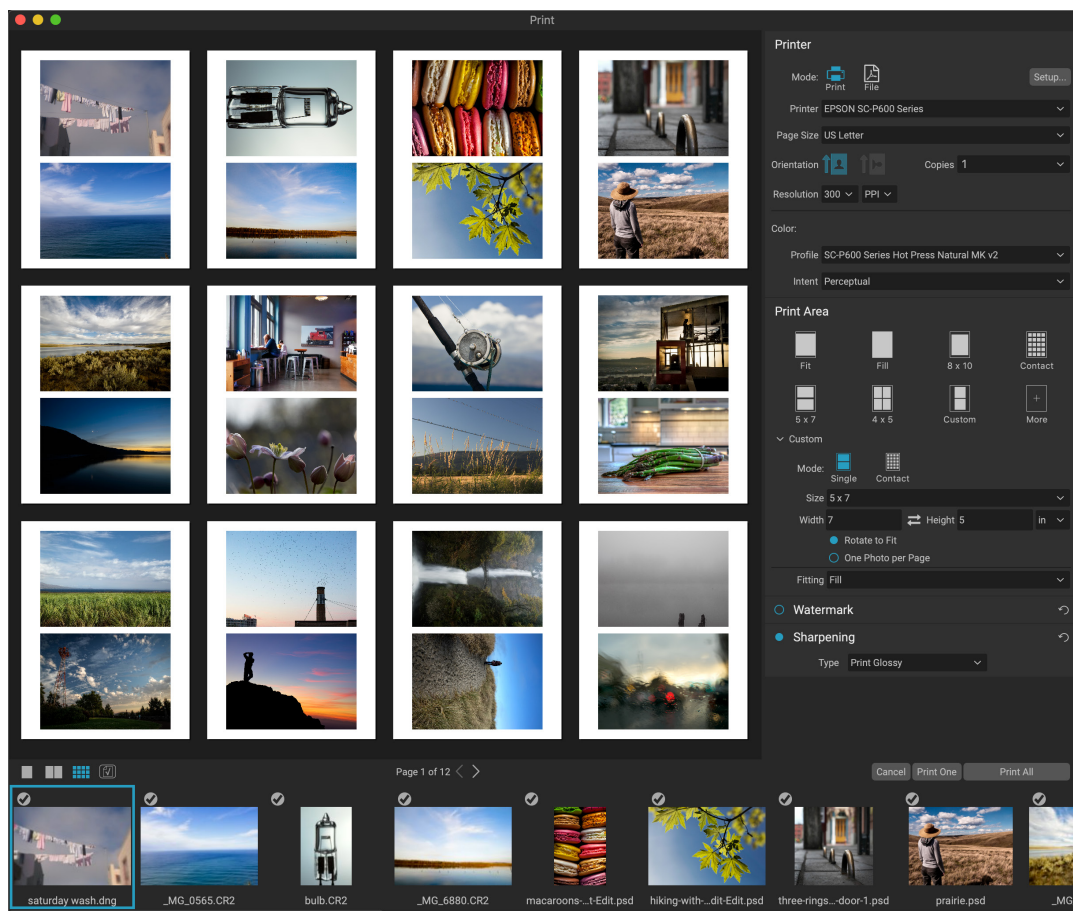

The Print feature gives you extensive options for printing multiple pages package style. Here, we have selected 24 photos to print at 5x7 inches on a letter-size sheet, on an Epson P600 printer. Clicking on the View All Pages button underneath the preview window, you can see all of the photos to be printed. Clicking Print One will print the currently selected page; clicking Print All will print the collection.

If you decide that you don't want to print a photo, click the checkmark for that photo in the filmstrip. To print all of the photos currently selected, click Print. If you would like to try a test print, with a single page, click on the Print One button, which will print the currently selected page, as found in the Page View listing.

Printing contact sheets

When you wish to evaluate a group of images but don't want to waste larger sheets of photo paper, use the Contact Sheet feature in the Print window. Select the photos you wish to print, set the paper size in the Printer pane, and click on the Contact icon in the Print Area pane.

The Contact Sheet option lets you evaluate a large group of photos in a high quality print, with captions.
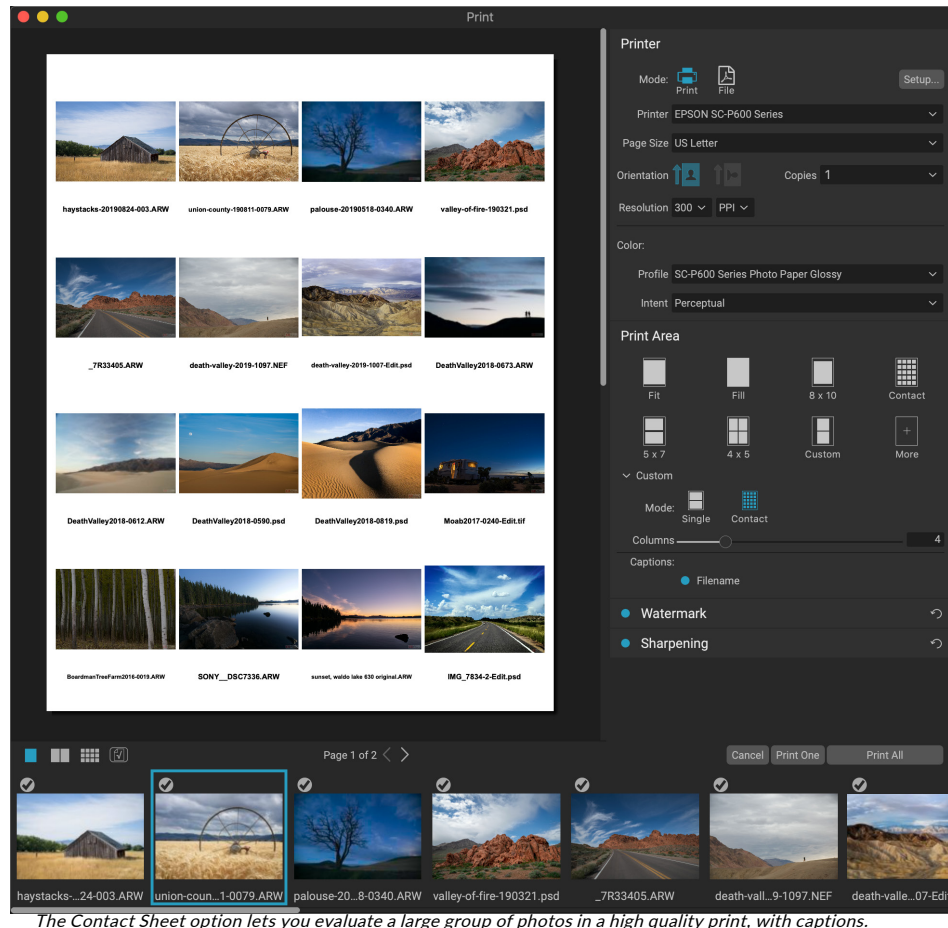
When you switch from Package to Contact mode, you have two options, as found in the Custom section of the Print Area pane:

- **Columns:** lets you set the number of columns across the page width. The smaller the number of columns, the larger the individual cells.
- **Captions:** Currently, Photo RAW lets you add the filename as a caption underneath the printed photo. Click the button to the left of the label to turn this on or off. (We will be adding additional caption options in future releases.)

You can use the Page View controls underneath the preview area to move between pages, and, when you're ready to print, click the Print All button to print the contact sheets.

SHARING TO SMUGMUG

If you are a member of the SmugMug photo sharing and hosting service, ON1 Photo RAW 2022 offers an easy to use mechanism for posting one or multiple photos to the service. This is accessed via the Share menu, which is found throughout Photo RAW in the lower right section of the Module selector. On Windows, the Sharing button's pop-up contains only the SmugMug option; on MacOS, there are additional sharing options beyond SmugMug (see page 227 for more information on these options).

You can share a the currently selected photo or a group of photos by choosing SmugMug from the Sharing pop-up menu. The first time you access the service, you'll receive an authorization window inside Photo RAW; fill out your account information and password, and then click on the Authorize button.

Once authorized, you'll be presented with a window that lets you upload your photo or photos. The window contains a handful of options:

- Click the "Use photo metadata" control to include the photos' metadata for use in the title, caption and keyword.

- The Gallery pop-up lets you add the photos to an existing gallery, or lets you create a new gallery.

- The Open Gallery link to the left of the pop-up will open the currently selected gallery in your default web browser.

- The Size pop-up has three options, full-size, and either 4000 or 2000 pixels (on the long side).

Once you have selected the appropriate options, click the Share button. Photo RAW will create high-quality JPEGs of the chosen photos and publish them to SmugMug.

More information about SmugMug can be found at smugmug. com.
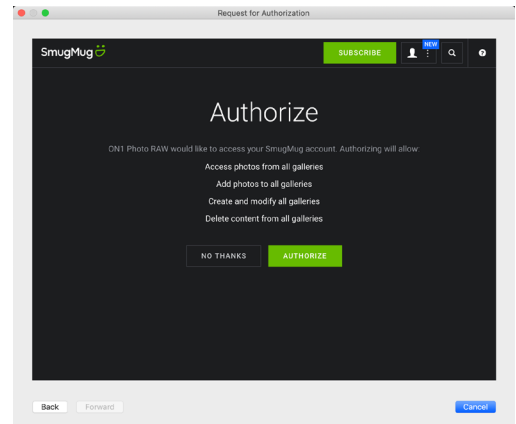
The first time you share to SmugMug, you'll be asked to log in to your account, and verify that you want to let Photo RAW post to your galleries on the site.

When you post to SmugMug from Photo RAW, you can include metadata, choose the gallery to you want the photos to go into, and the size of the uploaded photos.

SEND TO OTHER APPLICATIONS

The Browse module inside ON1 Photo RAW 2022 can send images you are viewing to other applications for editing. This is done via the Send to option, which is available from the right-click contextual menu or the Edit menu. ON1 Browse automatically detects the following common photo managers or editors and lists the latest installed version:

- Adobe Photoshop
- Adobe Photoshop Lightroom
- Adobe Photoshop Elements

You can set up any application you want to send your photos to. Simply select the Send to Other Application option. Then select the application you want to send your photos to. The application will be remembered and listed with your other Send to options. (For example, if you use an email client you can add it to easily email photos.)

When you send an image to another application, you will be presented with the Edit in dialog box from ON1 Photo RAW 2022. There you'll have the option to send either the edited photo or the original, unedited image. If you choose to send a copy, you'll have options for choosing the file type, color space, bit depth and resolution. If you use the same set of options every time, you can check the "Don't ask me again" box in the window, and you won't be prompted again. (To change this setting, go to the File pane in Photo RAW's Preferences.)
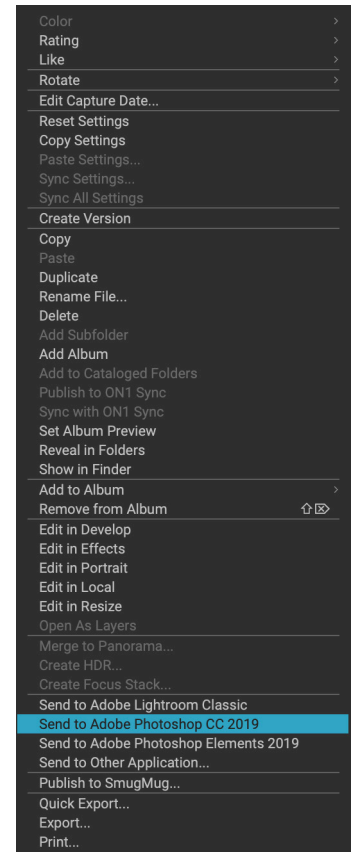
*The Send To... section is available when you right-click on a photo inside Browse pop-up menu.*

The Edit In dialog, with the Copy Options section expanded.

OTHER SHARING OPTIONS (MACOS ONLY)

In addition to SmugMug publishing, the MacOS version of ON1 Photo RAW 2022 includes other photo-sharing options, including:

- **Mail:** Creates a new email message in Apple Mail with the shared photo.

- **Messages:** Shares photo to Apple's Messages app.

- **AirDrop:** Uses Apple's AirDrop networking feature to share with local MacOS or iOS devices.

- **Notes:** Adds the shared photo to Apple's Notes app. You can choose to create a new note, or add the photo to an existing note.

- **Add to Photos:** Adds the photo to Apple's Photos app.

- **Reminders:** Adds to the Reminders app.

- **SmugMug:** Post photos to the SmugMug service (see page 225 for details).
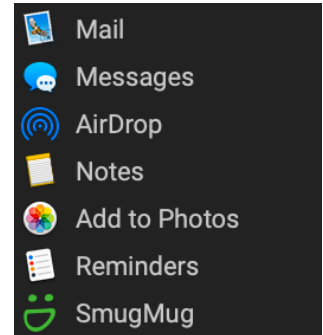
All of the sharing options perform the same operation: Photo RAW exports a full-size JPEG of the selected photo and shares it with the selected target from the list.

PART 6:
ON1 PHOTO RAW 2022
REFERENCE

Browse menus

ON1 Photo RAW (MacOS Only)

- **About ON1 Photo RAW 2022:** Opens the About box, displays your version number. (In the Help menu on Windows)
- **Preferences:** Opens the preferences dialog. (This is in the Edit menu on Windows)
- **Quit ON1 Photo RAW:** Quits ON1 Photo RAW 2022.

File Menu

- **New Canvas:** Creates a new .onphoto file at the dimensions you choose and opens it in Layers.
- **Browse Folder:** Opens the browse dialog where you can select which folder you would like to browse.
- **Browse Home:** Navigates to your home Pictures folder.
- **Browse Desktop:** Navigates to your desktop.
- **Advanced Search:** Opens the Advanced Search window.
- **Import from device:** Opens the Import window.
- **Add Cataloged Folder:** Lets you choose a folder to add to the Cataloged Folders section of the Folders pane.
- **Copy to My Catalogs:** Copy or move a group of selected photos to a specific cataloged folder.
- **Remove Cataloged Folder:** Removes the selected folder from the Cataloged Folders pane.
- **Manage Extras:** Opens the Extras Manager for importing and exporting backgrounds, presets, textures andt more.
- **Quick Export:** Saves the current image in Photoshop, TIFF, JPEG or PNG format.
- **Smart Organize:** Opens the Smart Organize window, which lets you search for duplicates, and images similar in appearance, date, or time.
- **Edit in (module):** Opens the currently selected photo in the specified module.
- **Open as Layers:** Opens the selected files as layers.
- **Edit Single Photo:** Opens the selected files in Edit's Single Image mode.
- **Fire Camera:** Triggers the shutter of a connected camera when Tethered Shooting mode is active.

- **Send to (list):** Sends your image to the selected application in the list.

- **Group RAW Plus JPG:** Stacks RAW and JPG pairs together, reducing clutter.

- **Merge to Panorama:** Takes the selected images and opens the Create Panorama window.

- **Create HDR:** Takes the selected images and opens the Create HDR window.

- **Create Focus Stack:** Takes the selected photos and opens the Focus Stack window.

- **Timelapse:** Takes a sequence of photos and converts them into a time-lapse movie.

- **Export:** Opens the Export window.

- **Export with Preset:** Exports the current selection using a preset from the hierarchical menu, bypassing the Export window.

- **Export with Previous:** Exports the current selection with the last-used Export setting, bypassing the Export window.

- **Print:** Opens up the print window.

- **Restore Data:** Restores your ON1 Photo RAW 2022 system settings and environment to a previous backup.

- **Back up Data:** Backs up your current Photo RAW system settings and environment.

Edit Menu

- **Undo:** Removes the last file operation.

- **Redo:** Redoes the undo operation. This is only available if the last thing you did was an undo.

- **Select All:** Selects all the images in the current folder.

- **Select None:** Deselects all the images in the current folder.

- **Deselect:** Deselects the current item.

- **Copy:** Copies the currently selected items.

- **Paste:** Pastes the items in the clipboard to the current location.

- **Duplicate:** Makes a physical copy of the selected file, in the same location as the original.

- **Rename Files:** Renames the selected file or folder.

- **Delete:** Moves the selected files and/or folders to the trash.

- **Add Subfolder:** Adds a new empty subfolder inside the current selected folder.

- **Keyboard Shortcuts:** Lets you add or modify the hotkeys for many of Photo RAW's commands.

Album Menu

- **Create Album:** Creates a new Album.

- **Rename Album:** Renames selected Album.

- **Delete Album:** Deletes selected Album.

- **Remove from Album:** Removes selected photo(s) from Album.
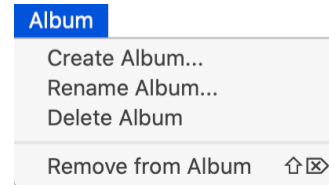
Photo Menu

- **Rating:** Sets star rating (0 to 5 stars)

- **Color:** Sets the color rating of a photo (None, Red, Yellow, Green, Red, Purple)

- **Like:** Sets a photo to Like, Reject or Not Set

- **Auto Advance:** When checked, any color, rating or like setting applied to a photo will save it for that photo, then move on to the following photo.

- **Rotate 90 Degrees CW:** Rotates an image clockwise by 90°

- **Rotate 90 Degrees CCW:** Rotates an image counterclockwise by 90°

- **Edit Capture Date:** Let's you adjust the date captured metadata, including a setting to take account for time zone changes.

- **Set Location from GPS Coordinates:** Looks up the place name information from the stored GPS coordinates and embeds it in the appropriate IPTC metadata fields.

- **Embed Metadata:** Stores adjusted metadata to the selected photo. (Only applicable to certain file formats.)

- **Read Metadata from Photo:** Reads the embedded metadata from a raw file, overwriting any data that might be in the XMP sidecar files. (Useful for times when the metadata appears out of sync with different apps.)

- **Save Metadata Preset:** Lets you save some or all of the current image's metadata fields as a preset.

- **Delete Metadata Preset:** Lets you delete a saved metadata preset.

- **Refresh Preview:** Rebuilds the preview of the selected
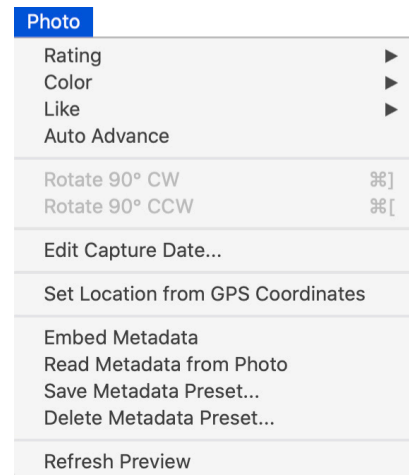
images. (Helpful if there are issues that are causing an image to display incorrectly.)

Settings Menu

- **Reset All Settings:** Resets all the applied settings on a photo.

- **Reset Develop Settings:** Resets only the settings applied in the Develop tab.

- **Reset Effects Settings:** Resets only the settings applied in the Effects tab.

- **Reset Sky Settings:** Resets the Sky Swap AI tab.

- **Reset Portrait Settings:** Resets Portrait settings.

- **Reset All Retouching Tools:** Resets any retouching applied in the Edit module.

- **Reset Local Adjustments:** Removes all local adjustments made to a photo.

- **Reset Liquify Tool:** Resets any application of the Liquify tools made to a photo.

- **Reset Crop:** Resets the current image's crop to its original state.

- **Reset Text:** Removes all text blocks.

- **Copy Settings:** Copies all of the Edit module settings applied to a photo.

- **Paste Settings:** Pastes the copied settings (with options)

- **Paste Settings from Previous Edit:** Applies the Develop, Effects and Local settings from the last-edited file.

- **Sync Settings:** Selectively applies Edit settings from the primarily selected image (represented by the superselection) to the rest of the images in a selection (with options).

- **Sync All Settings:** Syncs all Edit module settings from the primarily selected photo to the rest of the images in a selection.

- **Create Version:** Makes a virtual copy of a photo, without duplicating the file on your hard drive.

- **Save Settings as Preset:** Saves the editing settings of the selected photo as a preset.

- **Update Preset with Current Settings:** If an image with a preset has had some settings changed, this lets you update the preset with the new settings.

- **Rename Preset:** Renames a preset.

- **Delete Preset:** Deletes a preset.

- **Export Preset:** Exports a preset as an ON1 preset file.

- **Import Preset:** Imports ON1 preset files.

- **Get More Presets:** Goes to ON1.com's Photo Presets page.

Cloud Sync

- **Configure Cloud Sync:** Opens the Cloud Sync Preferences window.

View Menu

- **Bigger Thumbnails:** Increases the size of the thumbnails in Grid view.

- **Smaller Thumbnails:** Decreases the size of thumbnails.

- **Zoom In:** Zooms into your image in Detail, Filmstrip or Compare view, displaying more detail.

- **Zoom Out:** Zooms out, fitting more of your image in the window.

- **Fit to Screen:** Resizes your image on-screen, to fit it entirely in the preview window.

- **Actual Pixels:** Zooms in to the 100% view.

- **Preset Browser Mode:** Sets the Preset panel browser view to 1, 2 or 3 columns.

- **Thumbnail View Options:** Lets you change the display of thumbnails in Grid view..

- **Filter Text:** Puts the cursor in the text-search box at the bottom of the Browse window.

- **Filter by Rating:** Filters images by star rating.

- **Filter by Label:** Filters images by color.

- **Filter by Likes:** Filters images by likes/dislikes.

- **Reset filter:** Resets any of the above filters (text, rating, label, likes).

- **Show Clipping**: Shows the clipping overlay view, displaying the pure white or black pixels. (Photo, Filmstrip and Compare views only.)

- **Show Focus Mask:** Displays a green overlay on those portions of the current image that are in focus. (Photo, Filmstrip and Compare views only.)

- **Sort:** Sort by filename, date, rating, label and more.

- **Sort Subfolders at the Top:** When sorting, puts subfolders at the top of the grid.

- **Show Subfolder Contents:** Will display/hide the contents of subfolders when viewing cataloged folders.

- **View Mode:** Select from Thumbnail (grid), Photo (detail), Filmstrip or Compare views.
- **Preview Quality:** Select from Fast (uses embedded JPG) or Accurate (builds preview from the raw photo).
- **Preview Background Color:** Change the preview background color.

Window Menu

- **Minimize:** Minimizes ON1 Photo RAW 2022.
- **Zoom:** Zooms your window.
- **Full Screen Mode:** Enters or exits full-screen mode.
- **Dual Mode:** Adds new browser window for use in a second display.
- **Full Screen Preview:** Displays the current photo full-screen, without any additional interface elements.
- **Quick Slideshow:** Displays the current group of photos in a slideshow, with customizable time and transition effects.
- **Folders:** Opens and hides the Folders pane.
- **Albums:** Opens and hides the Album pane.
- **Tethered Shooting:** Opens/hides the Tethered Shooting pane.
- **Recent:** Opens and hides the Recent pane.
- **Info:** Open and hides the Info pane.
- **Metadata:** Open and hides the Metadata pane.
- **Keyword List:** Opens and hides the Keyword List pane.
- **Show Bumper Labels:** Hides/reveals the text labels in the module selector.
- **Show Browser Panel:** Hides/reveals the Browse Panel.
- **Show Photo Panel:** Hides/reveals the Photo Panel.
- **Hide Panels:** Hides/reveals both left and right panels.

Help

- **Search**: Searches the menu options (MacOS only).
- **Learning Hub:** Opens the Learning Hub inside Photo RAW.
- **ON1 Photo RAW 2022 Online Help**: Opens ON1.com support page in your default web browser.
- **Video Tutorials**: Opens ON1.com product training page in your default web browser.
- **Getting Started**: Opens the initial Photo RAW startup screens.

- **Check for Updates**: Checks the ON1 update server to see if you are running the current version; it notifies you about updates and will walk you through the update process.

- **Sign-In/Sign-Out**: Uses your ON1 account login information to authenticate your copy of Photo RAW.

- **Provide Feedback**: Opens the default web browser and goes to the feedback page of the ON1 website.

- **About ON1 Photo RAW 2022 (Windows Only)**: Opens the about box with the version number displayed.

- **Help Improve ON1 Products**: Opens the Improve ON1 Products dialog.

- **Show ON1 Log**: Diagnostic tool that can help ON1 support when you're having issues with ON1 Photo RAW 2022.

Edit Menus

ON1 Photo RAW (MacOS Only)

- **About ON1 Photo RAW**: Opens the About box and displays your version number. (This is in the Help menu on Windows)
- **Preferences:** Opens the preferences dialog. (In the Edit menu on Windows)
- **Quit ON1 Photo RAW**: Quits ON1 Photo RAW 2022.

File Menu

- **New Canvas**: Creates a new layered .onphoto file at the specified dimensions.
- **Canvas Size**: Lets you change the size of the current layered file.
- **Quick Export**: Saves the current image in Photoshop, TIFF, JPEG or PNG format.
- **Export:** Opens the Export window.
- **Export with Preset:** Exports the current selection using a preset from the hierarchical menu, bypassing the Export window.
- **Export with Previous:** Exports the current image with the last-used Export setting.
- **Print**: Opens up the print dialog box.
- **Manage Extras:** Opens the Extras Manager window.

Edit Menu

- **Undo**: Removes the last file operation.
- **Redo**: Redoes the undo operation. This is only available if the last thing you did was an undo.
- **Cut**: Cuts the currently selected item.
- **Copy**: Copies the currently selected item.
- **Paste**: Pastes (copies) the items in the clipboard to the current location.
- **Delete:** Deletes the current image (Filmstrip mode only).
- **Revert:** Reverts to the original state of the current photo.
- **Preferences (Windows):** Opens the Preferences dialog.
- **Keyboard Shortcuts:** Lets you add or modify the hotkeys for many of Photo RAW's commands.

Layer Menu

- **Add Layer from File**: Lets you add a new file to the current document as a layer.
- **Add Color Fill Layer:** Adds a new layer consisting of a solid color.
- **Edit Color Fill:** Lets you change the color of a selected color fill layer.
- **Delete:** Deletes the currently selected layer.
- **Duplicate:** Duplicates the currently selected layer.
- **Reset Layer Properties:** Removes any applied layer masks or transforms to the current layer.
- **Merge Layer**: Merges the current layer with the one beneath it.
- **Merge Visible**: Merges all of the visible layers into a new, merged layer.
- **New Stamped Layer**: Merges the visible layers into a new, composite layer, leaving the visible layers intact.
- **Align Visible Layers**: Aligns visible layers based on their content.
- **Filters**: Contains a list of installed Photoshop plugins. Selecting an item sends the current layer to the plugin and returns it in a new layer.

Photo Menu

- **Auto Advance**: When checked, any color, rating or like setting applied to a photo will save it for that photo, then move on to the following photo.
- **Rotate 90 Degrees CW**: Rotates an image clockwise 90°
- **Rotate 90 Degrees CCW**: Rotates an image counterclockwise 90°

Mask Menu

- **Invert Mask**: Inverts the mask, what was hidden is revealed and vice versa.
- **Reset Mask**: Resets the mask to plain white.
- **Copy Mask**: Copies the mask.
- **Paste Mask**: Pastes the mask.
- **Create Luminosity Mask**: Creates a luminosity layer mask based off of a photo's black or white tonal values.
- **Mask Sky:** Automatically creates a mask of the sky in the current image.

- **Show Mask**: Displays the current mask either as a red overlay or as grayscale.
- **View Mode**: Sets the Show Mask mode to either red overlay or grayscale.

Settings Menu

- **Reset All Settings**: Resets all Edit module settings.
- **Reset Develop Settings**: Resets all Develop settings.
- **Reset Effects Settings**: Resets all Effects settings.
- **Reset Sky Settings**: Resets any sky replacement.
- **Reset Portrait AI Settings**: Resets Portrait AI settings.
- **Reset All Retouching Tools**: Resets any retouching applied in the Edit module.
- **Reset Local Adjustments**: Resets all local adjustments.
- **Reset Liquify Tool:** Resets any application of the Liquify tools made to a photo.
- **Reset Crop**: Resets cropping made to a photo.
- **Reset Text**: Resets text blocks added to a photo.
- **Copy Settings**: Copies all of the settings (Develop, Effects, retouching) applied to a photo.
- **Paste Settings**: Pastes the copied settings (with options)
- **Paste Settings from Previous Edit:** Applies (to the current photo) any Edit module adjustments made to the previous photo.
- **Sync Settings:** Selectively applies the Edit module settings from the primarily selected image to the rest of the images in a selection.
- **Sync All Settings:** Applies all of the Edit module settings from the primarily selected image to the rest of the images in a selection.
- **Create Version:** Makes a virtual copy of a photo, without duplicating the file on your hard drive.
- **Save Settings as Preset**: Saves the editing settings of the selected photo as a preset.
- **Update Preset with Current Settings**: If an image with a preset has had some settings changed, this lets you update the preset with the new settings.
- **Rename Preset**: Renames a preset.
- **Delete Preset**: Deletes a preset.
- **Export Preset**: Exports a preset as an ON1 preset file.
- **Import Preset**: Imports ON1 preset files.
- **Get More Presets**: Goes to ON1's Photo Presets web page.

Settings	
Reset All Settings	⇧⌘R
Reset Develop Settings	
Reset Effects Settings	
Reset Sky Settings	
Reset Portrait AI Settings	
Reset All Retouching Tools	
Reset Local Adjustments	
Reset Liquify Tool	
Reset Crop	
Reset Text	
Copy Settings	⇧⌘C
Paste Settings...	⇧⌘V
Paste Settings from Previous Edit	⌥⌘V
Sync Settings...	⌥⌘S
Sync All Settings	⌥⇧⌘S
Create Version	⌘'
Save Settings as Preset...	
Update Preset with Current Settings...	
Rename Preset...	
Delete Preset	
Export Preset...	
Import Preset...	
Get More Presets...	
Save Settings	⌘S
New Snapshot...	⌥⇧⌘N

- **Save Settings:** Saves the current state of your edits in the Edit module, in case of crash.

- **New Snapshot:** Creates a new snapshot of the current editing state.

View Menu

- **Zoom In**: Zooms the preview window in one increment. This will make the preview image larger.

- **Zoom Out**: Zooms the preview window out one increment. This will make the preview images smaller.

- **Fit to Screen**: This sets the preview image so that the entire image is on screen at once. Think of this as an overview of the entire image. This is the setting you will use most of the time.

- **Actual Pixels**: This sets the preview image so that it zooms to actual pixels or 1:1 also called 100%. This setting allows you to see every pixel in the image. This is useful when making precision adjustments.

- **Preset Browser**: Sets the Preset panel browser view to 1, 2 or 3 columns.

- **Show Clipping**: Shows the clipping overlay view, displaying the pure white or black pixels.

- **Show Focus Mask:** Displays a green overlay on those portions of the current image that are in focus.

- **Show Preview**: Toggle to enable or disable the preview.

- **Compare**: Displays an adjustable split-screen view of the current image, with the Before view on the left side of the preview area.

- **View Mode**: Toggles between Filmstrip and Detail view.

- **Preview Background Color**: Lets you set the background color options.

- **Enable Soft Proofing**: Turns on soft proofing for the current image.

- **Gamut warning**: Displays colors that the printer can't reproduce with a red overlay.

- **Profiles**: Displays a list of installed printer and display profiles; choosing a profile will apply soft proofing for that profile's paper type.

- **Intent**: Lets you switch between perceptual or relative rendering intent for the current image.

- **Simulate Paper and Ink**: When turned on, Photo RAW will set the white point and black point of the display to account for that of the chosen profile.

Window

- **Minimize**: Minimizes your screen.
- **Zoom**: Zooms your window to full-size.
- **Full Screen**: Toggles full-screen mode (hides menus).
- **Dual Mode:** Turns on dual-display mode
- **Navigator**: Hides or shows the Navigator, Loupe, Histogram and Info pane.
- **Layers**: Collapses the Layers pane.
- **Solo Mode**: Keeps only one pane open at a time.
- **Show Layers**: Completely hides/shows the Layers pane.
- **Open Quick View Browser**: Opens the Quick View Browser overlay for the selected preset category.
- **Show Bumper Labels:** Hides/reveals the text labels in the module selector.
- **Show Browser Panel**: Hides/shows the Browser Panel.
- **Show Control Panel**: Hides/shows the Control Panel.
- **Hide Panels**: Hides or shows all Panels.
- **Document Name**: Shows the name, zoom level and bit depth of the open image.

Help

- **Search**: Searches the menu options (MacOS only).
- **Learning Hub:** Opens the Learning Hub.
- **ON1 Photo RAW 2022 Online Help**: Opens ON1.com support page in your default web browser.
- **Video Tutorials**: Opens ON1.com product training page in your default web browser.
- **Getting Started**: Opens the initial Photo RAW startup screens.
- **Check for Updates**: Checks with the ON1 update server an updated version. If there is a newer version, you will be notified and be walked through the update process.
- **Sign-In/Sign-Out**: Uses your ON1 account login information to authenticate your copy of Photo RAW.
- **Provide Feedback**: Opens the default web browser and goes to the feedback page of the ON1 website.
- **About ON1 Photo RAW (Windows Only)**: Opens the about box with the version number displayed.
- **Help Improve ON1 Products**: Opens the Improve ON1 Products dialog.
- **Show ON1 Log**: Diagnostic tool that can help ON1 support when you're having issues with Photo RAW.

Resize Menus

ON1 Photo RAW (MacOS Only)

- **About ON1 Photo RAW**: Opens the About box and displays your version number. (This is in the Help menu on Windows)

- **Preferences:** Opens the preferences dialog. (In the Edit menu on Windows)

- **Quit ON1 Photo RAW**: Quits ON1 Photo RAW 2022.

File Menu

- **Done**: Saves the current image and returns to Browse (or external source).

- **Cancel**: Cancels any Resize operations and returns to Browse (or external source).

- **Quick Export**: Saves the current image in Photoshop, TIFF, JPEG or PNG format

- **Export:** Opens the Export window.

- **Export with Preset:** Exports the current selection using a preset from the hierarchical menu, bypassing the Export window.

- **Export with Previous:** Exports the current image with the last-used Export setting.

- **Print**: Opens up the print dialog box.

- **Manage Extras:** Opens the Extras Manager window.

Edit Menu

- **Undo**: Removes the last file operation.

- **Redo**: Redoes the undo operation.

- **Cut**: Cuts the currently selected item.

- **Copy**: Copies the currently selected item.

- **Paste**: Pastes the items in the clipboard.

- **Preferences (Windows):** Opens the Preferences dialog.

- **Keyboard Shortcuts:** Lets you add or modify the hotkeys for many of Photo RAW's commands.

Settings Menu

- **Reset all Settings**: Resets any settings made in Resize.

- **Reset Resize Settings**: Resets changes made in Settings.

- **Reset Crop**: Resets the crop.

- **Save Settings as Preset**: Saves the current Resize settings as a preset.

- **Update Preset with Current Settings**: If an image with a preset applied has had some settings changed, this lets you update the preset to reflect those new settings.

- **Rename Preset:** Renames the current preset.

- **Delete Preset**: Deletes the currently selected preset.

- **Export Preset**: Exports the current preset.

- **Import Preset**: Imports ON1 Resize preset files.

- **Get More Presets**: Opens ON1's Presets page in your web browser.

View Menu

- **Zoom In**: Zooms the preview window in one increment. This will make the preview image larger.

- **Zoom Out**: Zooms the preview window out one increment. This will make the preview images smaller.

- **Fit to Screen**: This sets the preview image so that the entire image is on screen at once. Think of this as an overview of the entire image.

- **Actual Pixels**: This sets the preview image so that it zooms to actual pixels or 1:1 also called 100%. This setting allows you to see every pixel in the image. This is useful when making precision adjustments.

- **Show Clipping**: The clipping overlay view displays the pure white or black pixels in the current image.

- **Preview Background Color**: Lets you set the background color options.

- **Enable Soft Proofing**: Turns on soft proofing.

- **Gamut warning**: Displays colors that the printer can't reproduce with a red overlay.

- **Profiles**: Displays a list of installed printer and display profiles; selecting a profile will apply soft proofing for that profile.

- **Intent**: Lets you switch between perceptual or relative rendering intent for the current image.

- **Simulate Paper and Ink**: Sets the white point and black point of the display for that of the chosen profile.

Window

- **Minimize**: Minimizes your screen.

- **Zoom**: Zooms window to full-size.

- **Full Screen**: Toggles full-screen mode (hides menu bar).

- **Navigator/Loupe/Histogram**: Hides or shows the Navigator, Loupe, Histogram (Levels) and Info pane.

- **Pixel Dimensions**: Toggles the Pixel Dimensions pane.

- **Document Size**: Toggles the Document Size pane.

- **Settings**: Opens or closes the Settings pane.

- **Sharpening**: Opens or closes the Sharpening pane.

- **Film Grain**: Opens or closes the Film Grain pane.

- **Tiling**: Opens or closes the Tiling pane.

- **Gallery Wrap**: Opens or closes the Gallery Wrap pane.

- **Solo Mode**: Keeps only one control pane open at a time.

- **Show Control Panel**: Hides or shows the Control Panel.

- **Hide Panels**: Hides or shows all Panels.

- **Document Name**: Shows the name, zoom level and bit depth of the open image.

Help

- **Search**: Searches the menu options (MacOS only).

- **Learning Hub:** Opens the ON1 Learning Hub.

- **ON1 Photo RAW 2022 Online Help**: Opens ON1.com support page in your default web browser.

- **Video Tutorials**: Opens ON1.com product training page.

- **Getting Started**: Opens the Photo RAW startup screen.

- **Check for Updates**: Checks with the ON1 update server for an updated version.

- **Sign-In/Sign-Out**: Uses your ON1 account login information to authenticate your copy of Photo RAW.

- **Provide Feedback**: Opens the default web browser and goes to the feedback page of the ON1 website.

- **About ON1 Photo RAW (Windows Only)**: Opens the about box with the version number displayed.

- **Help Improve ON1 Products**: Opens the Improve ON1 Products dialog.

- **Show ON1 Log**: Diagnostic tool that can help ON1 support when you're having issues with ON1 Photo RAW 2022.

Preferences

ON1 Photo RAW 2022 has a number of system-wide settings that you can set via the Preferences window. To access Preferences, either click on the gear icon at the lower left side of the screen, or choose Preferences from the ON1 Photo RAW 2022 menu (MacOS) or the Edit menu in Windows.

The Preferences window has seven tabs: General, Files, Plug-Ins, System, Services, ON1 360 and Auto Mark. The settings in each tab are described below.

GENERAL SETTINGS

The General settings tab adjusts basic settings for the Photo RAW workspace, including background color, scrolling controls and more.

Scrolling Controls

Lets you select how the mouse scroll wheel or scrolling gesture works. The options are:

- **None**: Default.
- **Preview Zoom**: Adjusts the zoom of the preview window.
- **Preview Pan**: Pans the image.
- **Brush Size**: Adjusts the size of the current brush tool.
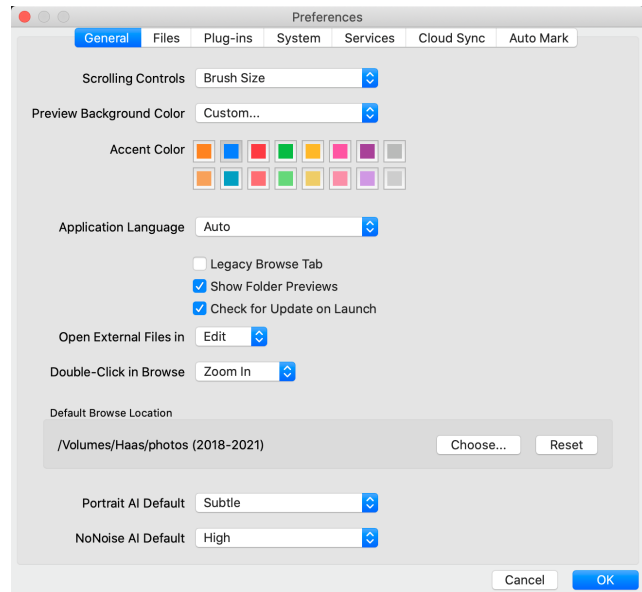
Preview Background Color

You may select the color of the background behind the preview image. The default color is black. There is options for black, white, light gray, dark gray and custom. The custom option has a color picker where you can select your own background color.

Accent Color

Lets you choose the display color for highlighted items in the Photo RAW interface.

Application Language

Lets you change the display language for Photo RAW. Auto will use your system's default language.

Legacy Browse Tab

Checking this will change the separate My Catalogs and Browse panels to the single Browse panel found in earlier versions of ON1 Photo RAW. (See "My Catalogs, Browse and Presets Panels" on page 19.)

Show Folder Previews

When checked, will display a thumbnail of an image from the enclosing folder in Browse.

Check for Update on Launch

Enabled by default, the product will communicate with ON1's software update server when you start ON1 Photo; if an update is available it will prompt you to download or skip.

Open External Files

When double-clicking a photo in Photo RAW from either MacOS Finder or Windows Explorer, specifies whether to open the file in the Browse module (default) or the Edit module, the latter by using Edit a Single Photo mode (see "Edit a Single Photo" on page 18).

Double-Click in Browse

Sets the behavior when double-clicking on a photo in Browse's Grid view. The default is to zoom in to the photo; the alternative is to open the photo in the Edit module.

Default Browse Location

By default, the Pictures short cut in Browse is either Pictures (Mac) or My Pictures (Windows). You can change that location via this setting.

Portrait AI Default

Sets the strength of Portrait AI's retouching algorithms when you open a photo in the Portrait tab. There are two options, Subtle and Strong. The default is Subtle. (See page 163 for information on the options.)

NoNoise AI Default

Sets the strength of NoNoise AI's noise reduction when you open a photo in the Portrait tab. There are three options, Low, Medium and High. The default is High. (See page 124 for information on the options.)

FILES

The Files tab is used to determine what file type ON1 Photo RAW will create when opening a file in Resize, or when creating copies to send to an external editor from within Browse. It also lets you apply camera-based presets.

What to Edit

There are five options in this tab:

1. **File Format**: Sets the file type you wish to create: PSD, TIFF, or JPEG. If you wish to use a layered workflow, you must choose PSD.

2. **Color Space**: Sets the default color space when opening a copy of a file; the list includes Adobe RGB 1998, Apple RGB
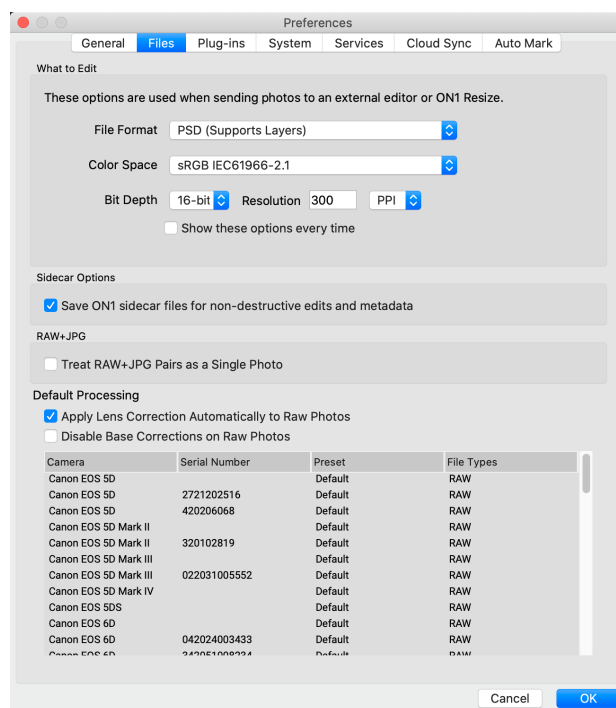
(MacOS), sRGB, ProPhoto RGB, or ColorMatch RGB. (If you imported a profile, it will also be available here.)

3. **Bit Depth**: Sets the bit depth for the file when opening a copy of a file.

4. **Resolution**: Sets the resolution when opening a copy of a file.

5. **Show these options every time**: If you do not wish to use a predefined set of file characteristics for opening photos from Lightroom or Photoshop, click this box.

Sidecar Options

Click this box if you wish ON1 Photo RAW 2022 to create ON1-specific 'sidecar' files when you are editing images. This is helpful if you are using the same image library with multiple computers (on an external hard drive, for example), and want your edits to be visible on each machine.

Treat RAW+JPG Pairs as a Single Photo

If you shoot RAW+JPG, you can use this option to 'stack' both photos inside Browse. (RAW+JPG pairs are shown with a small icon in the lower left corner of the thumbnail.)

Default Processing

The Default processing section contains three options, for lens correction, base level raw-file corrections, and applying camera-based presets. The first, Apply Lens Correction Automatically, will use the lens correction automatically on any raw photo when you view it in Detail, Filmstrip or Compare modes. The Disable Base Corrections option turns Photo RAW's basic raw-file correction settings off. This can be helpful for scientific/technical photography, time-lapse, and other specialized applications.

The Camera-Based Presets section at the bottom of the Files pane will contain a list of known cameras you have shot with. You can have Photo RAW automatically apply any preset to a specific camera by choosing the preset from the appropriate pop-up. (See page 111 for more about using camera-based presets.)

PLUG-INS

The Plug-Ins tab is used to load third-party Photoshop plugins for use within Photo RAW. To install them in Photo RAW's default location, click the Open Default Folder button and copy the plugin files there. You can also have a secondary plugin folder; to use this, click the checkbox, and then choose the folder by clicking on the Choose button.
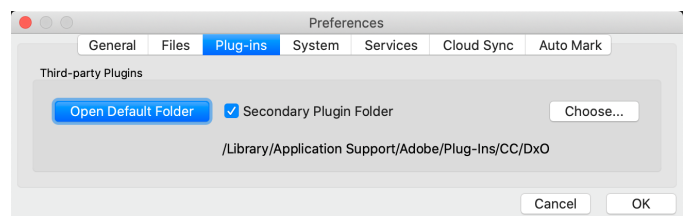
See "Using Photoshop Plugins with Photo RAW" on page 8 for information.

SYSTEM

The System tab displays performance-related characteristics of Photo RAW 2022.

Memory Usage

- **System Usage:** Specifies the amount of RAM that is used by the application. The maximum (default value) is 80%.
- **VRAM Usage:** Specifies the amount of video memory (VRAM) used. The maximum (default) is 80%.

Scratch Folder Location

Lets you move or reset your memory cache, to speed editing operations while you're running Photo RAW. This is helpful if your system drive has limited space and wish to use a faster external drive as a cache. This cache information is purged each time you quit the application.

Browse Cache

ON1 Photo RAW 2022 stores thumbnails previews on disk so that the next time you browse a folder it loads much faster. This setting lets you adjust the memory cache size as well as empty the cache, move it to another location, or reset it if you are having issues with Browse.

> **TIP:** If you use cataloged folders and have a small SSD boot volume, move the Browse cache to another drive for performance and space considerations.

Performance

The Performance section is designed to help you optimize Photo RAW for your specific setup:

- **Video Card Strength** balances updating the preview of the image and the movement of brushes and gradient tool overlays. If your brush is sticking try turning it down. If you have a high-end video card try turning it up for faster preview updating.
- **Fast Panning** reduces the preview quality (makes it less sharp) while panning the photo to improve performance of panning.
- **Fast Preview** reduces the preview quality (makes it less sharp) while painting or making other adjustments to improve paintbrush performance. This is off if you have a high-end video card.
- **GPU Render** uses the GPU (video card) to render preset thumbnails, exporting, printing, sharing and caching. This can greatly improve performance. It is on by default for systems that support it. It may be disabled on lower-end GPUs.
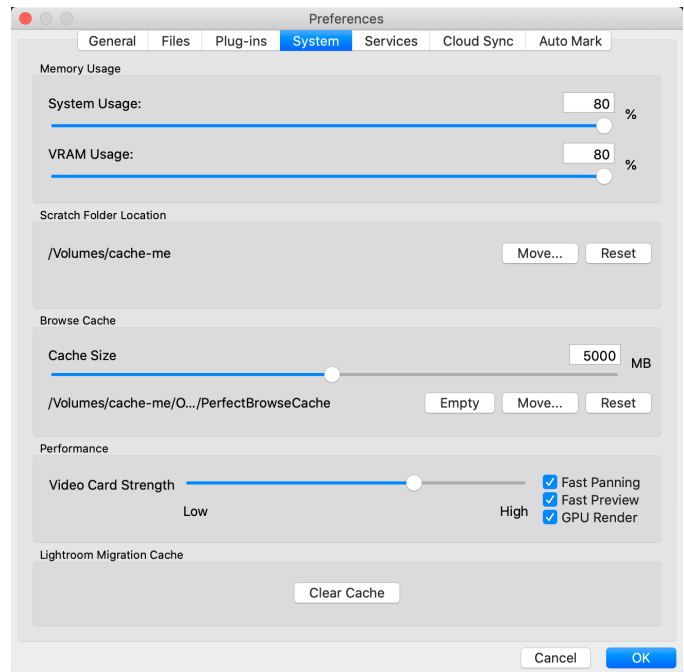
Lightroom Migration Cache

If you run into problems with the Lightroom Migration Assistant, you can clear the cache here. (See "Moving Your Lightroom Catalog to Photo RAW" on page 249.)

SERVICES

This tab controls which online storage services are displayed in the Sources pane in Browse and Layers. Currently, ON1 Photo RAW 2022 supports Dropbox, Google Drive, and Microsoft OneDrive. Photo RAW 2022 will automatically add any of the services if finds them on your computer during the installation process, but if you add (or remove) any of these services later, use this tab to manage them.
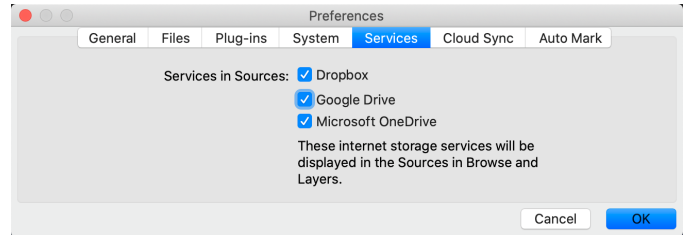
CLOUD SYNC

If you have subscribed to the ON1 Cloud Sync service, this tab lets you set the name for your device (which will be displayed on your other synced devices), as well as whether or not you wish to publish RAW+JPG pairs and your presets and imported extras.

The Reset Cloud Sync button will return your sync setup to its original state, removing all photos and devices.

Detailed information about Cloud Sync can be found starting on page 63.
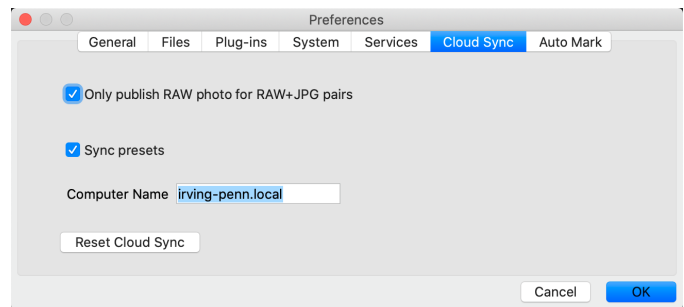
AUTO MARK

This tab lets you set the various criteria Photo RAW uses when using the Smart Organize feature in Browse. See page 47 for details on Smart Organize, and how to adjust the Auto Mark settings to fit your needs
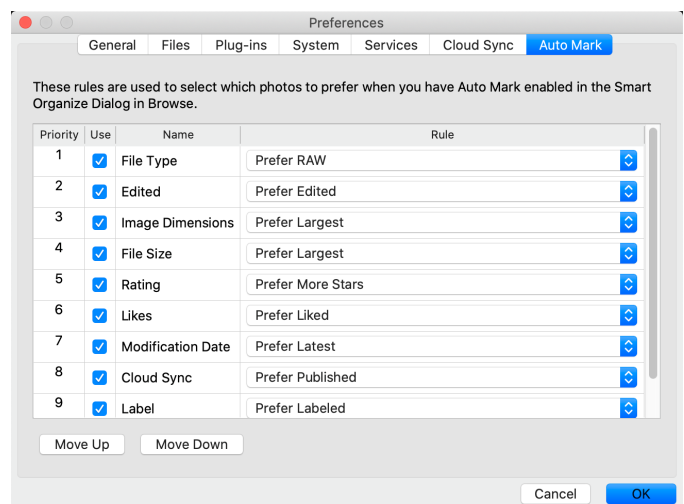
Moving Your Lightroom Catalog to Photo RAW

If you are a Lightroom user and you wish to make Photo RAW your primary editing application, you can use our Lightroom Migration Assistant to transfer most of your catalog settings and metadata from Lightroom into Photo RAW. You can even—with a few caveats—transfer photos that have been edited in Lightroom so that they appear inside ON1 Photo with corresponding (non-destructive) edits applied to them. And, it does this without changing any of the original files in your Lightroom catalog, or the catalog itself. Instead, we use machine learning to migrate the actual Lightroom edits in a re-editable, non-destructive way.

> **NOTE:** This tool is designed for one-time migration of catalogs. As such, the migration process can take a long time. You can continue to use Lightroom and ON1 Photo RAW 2022 during the migration period. The migration process can also temporarily use a large amount of disk space on the drive (or drives) where you store your images. Make sure you have plenty of space before you begin.

This tool performs the following tasks:

- Top-level folders in Lightroom's Folders pane become cataloged folders in Photo RAW. All the photos and videos in those folders will be cataloged automatically.

- Metadata changes made in Lightroom will be migrated, and include ratings, flags, keywords, descriptions, GPS data, color labels, orientation, and so forth.

- Standard Lightroom collections will be migrated as well. (Smart collections are not converted.)

- Most raw processing and editing settings made inside Lightroom's Develop module are migrated non-destructively—and are editable—inside Photo RAW. These operations include crop, retouching, local adjustments, vignettes, noise reduction and sharpening, and more. (See "Which Lightroom Settings are migrated?" on page 251 for exact details of which settings are transferred and which ones are not.)

To migrate your catalog, open it inside Lightroom, and choose Migrate Catalog to ON1 Photo from File > Plug-In Extras. An assistant window will open up; the first and second tabs of the window have an introduction about the process. If you would like to see any additional up-to-date information on the Migration Assistant, click the Learn More button, which will take you to a help page on the ON1 website.
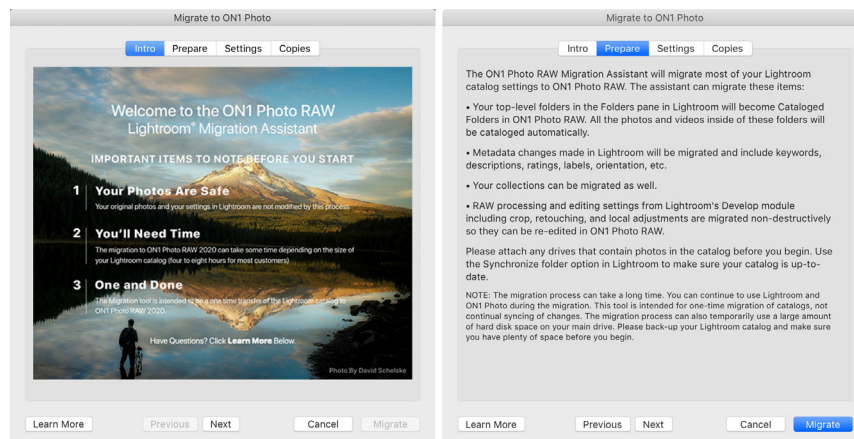
The Intro and Prepare tabs give you information about the Lightroom Migration assistant. Click the Learn More button to go to the ON1 website for more detailed information about the process.

Click on the Next button when you're ready; this will take you to the Settings tab, where you can choose whether to have the Assistant transfer your standard Lightroom Collections (Smart Collections are not transferable) and any Develop adjustments made in Lightroom. Once you've made your selection, click on the Next button to go to the Copies tab.
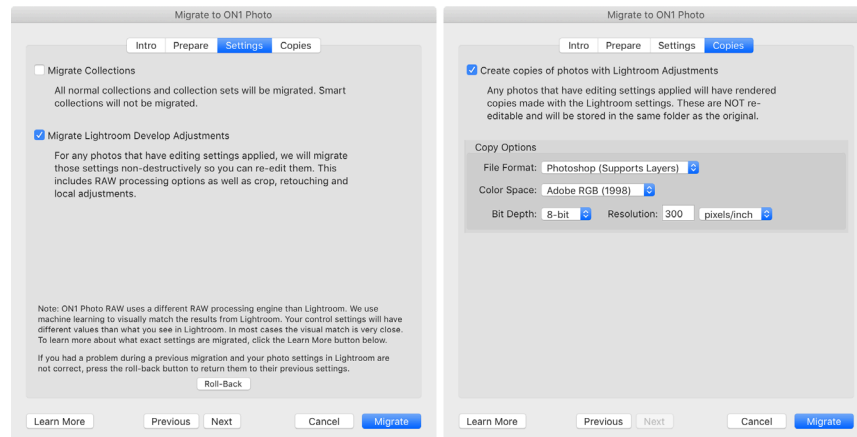
The Settings and Copies tab offer multiple options for the conversion operation.

NOTE: If you migrated your Lightroom catalog, and your photo settings in Lightroom are not correct, launch the Migration Assistant again, go to the Settings tab and click the Roll Back button at the bottom of the tab. This will return your Lightroom settings to the state before you started the Migration process. (Click the Cancel button when the roll-back procedure is complete.)

The Copies tab lets you export copies of any photos that have Develop adjustments made to them inside Lightroom into a new file that includes all of those edits. These copies are created based on the options chosen in the Copies tab, and include the following options:

- **File Type**: This menu determines what type of file will be created. The default is PSD, which maintains layers. You can also select JPG or TIFF, if you prefer those formats.
- **Color Space**: The color space drop-down menu determines what RGB working color space is used; Adobe RGB 1998, sRGB or ProPhoto RGB.
- **Bit Depth**: This sets the copied file's bit depth to either 8 or 16 bits per pixel.
- **Resolution**: The resolution drop-down menu determines the resolution of the file.

When the Copies option is checked, any photo that has been edited inside Lightroom will have a new copy saved in same folder as the original image. Both images will be visible in Photo RAW after the migration process is complete.

Once you have set your options in the Assistant window, click the Migrate button. Once initiated, the following steps happen:

1. Using the Photo RAW plugin, small JPEG versions of all images in the catalog—used for comparison purposes during the migration—are exported to a temporary location, as are separate sidecar files that contain metadata (.on1) and edit information (.on1meta) for each image.
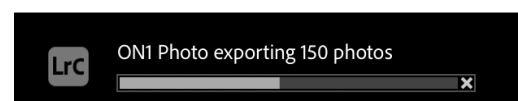
Once you've clicked the Migrate button, Lightroom will begin the process of exporting catalog information to ON1 Photo RAW 2022.

2. If you checked the Copies option, those images are also exported and saved to the same folder as the original.

3. When the process is complete from within Lightroom, Photo RAW will launch, and the Lightroom catalog's folders will show up as Cataloged Folders inside the Browse module's Folders pane. (The thumbnails for the images will initially be based on the temporary JPEGs exported in Step 1 above.)

4. In the background, Photo RAW will go through the cataloged folders and, using the information stored in the .on1meta files, will perform a conversion process to align edits between the Lightroom versions and the new ON1 Photo RAW version.

5. When viewing migrated catalog folders inside Browse, any image that has not yet been converted will have a small 'LR' badge in the lower right corner of the thumbnail. Once Photo RAW has finished the conversion on that image, the badge will change to a small '+/-' badge.

6. As Photo RAW completes the conversion on each image, the temporary files are deleted, and the .on1 sidecar files are updated.

> **NOTE:** Choosing the Create Copies option will create a copy of all photos that have *any* adjustment made to them. This includes such things as lens profiling or default noise reduction, which some people use as an import preset when bringing photos into Lightroom. We recommend examining your catalog, and determine how you wish best to proceed with the migration. In some cases, it might be better to use Lightroom's export dialog to selectively export edited photos into a new folder, and add them to ON1 Photo RAW as a new cataloged folder—or however you might wish to organize them inside Photo RAW.

The process, which, as noted, can take quite some time, although you can continue work inside Photo RAW once the Lightroom export component has been completed. If you quit Photo RAW and restart it later, the app will continue to work in the background until all of the migrated images are translated into ON1 Photo RAW edits.

> **NOTE:** Migrating the Lightroom Develop adjustments does not affect either the original photos or their settings inside the Lightroom catalog. What ON1 Photo RAW does is apply a 'translation' of the Develop settings of your Lightroom edits to Photo RAW's Develop settings, and saves those edits in an ON1-specific sidecar file. When you open a migrated photo inside the Edit module, you'll see ON1's approximation of the edits you made in Lightroom.

WHICH LIGHTROOM SETTINGS ARE MIGRATED?

Due to the complexities of moving editing settings from one raw development environment to another, not every setting in Lightroom is converted when you migrate your catalog. The following table lists key Lightroom features, if they're converted, along with some notes about the specific feature mentioned.

| FEATURE	CONVERTED?	NOTES
Folders	Yes	All top-level Folders in Lightroom become top-level cataloged folders in Photo RAW.
Photos/Videos	Yes	All photos/videos in the cataloged folders are added. This may include some photos that are not cataloged in Lightroom. Photo RAW only migrates available photos and does not migrate photos from offline volumes.
Virtual Copies	Yes	Virtual Copies become Versions inside Photo RAW.
Stacks	No	
Collections	Yes	All normal collections are migrated to albums. Collection sets become album sets. Smart collections are not migrated.
Crop	Yes	
Spot Removal	Yes	Spot Removal is migrated to the Clone Stamp when used in Clone mode. When used in Heal mode it is migrated to the Perfect Eraser. The results will not be a pixel perfect match but will generally remove the same spots with comparable results.
Basics	Yes	Camera Profiles are matched for Adobe® and Camera profiles. Other LUTs or custom profiles are not migrated. Clarity is called Structure in Photo RAW. Dehaze is called Haze and will look a bit different.
Black & White	Yes	
Tone Curve	Yes	Point-based curve adjustments only.
HSL/Color	Yes	You will find this in the Color Adjustment filter in Effects.
Split Toning	Yes	You will find this in the Split Tone filter in Effects.
Detail	Yes	There are significant differences in the sharpening and noise reduction algorithms. We did our best to align them but they may require manual adjustments to taste before output.
Lens Correction	Yes	Automatic lens correction is applied if we have a matching lens profile. Manual distortion settings are not migrated.
Transform	No	Unfortunately, Lightroom's Transform function is very different and we couldn't find a practical way to migrate these settings. You can achieve similar results using the Transform pane in Develop in Photo RAW.
Effects	Yes	Found in the Vignette and Film Grain filters in Effects.
Camera Profiles	No	Profiles are proprietary to the developer of the raw engine.
Red Eye	No	You can reduce red-eye automatically in the Portrait module.
Graduated Filter	Yes	You will find these as adjustment layers in the Local module using the Adjustable Gradient. Range mask, Moiré and Defringe are not migrated at this time.
Radial Filter	Yes	You will find these as adjustment layers in the Local module using the Adjustable Gradient. Range mask, Moiré and Defringe are not migrated at this time.
Adjustment Brush	Yes	You will find these as adjustment layers in the Local module using the Adjustment Brush, including the Auto Mask function. Range mask, Moiré and Defringe are not migrated at this time.

Backing up Your Work in Photo RAW

To safeguard your peace of mind in the event of computer failure—or help you get set up quickly when you move to a new computer—ON1 Photo RAW 2022 includes a back-up and restore function. While this feature will not back up your photos, it will back up the following items related to your Photo RAW installation:

- All preferences, references to cataloged folders and other basic settings for Photo RAW.
- Albums created in Browse.
- Metadata changes made to images in Browse, including keywords, ratings, labels, and any data added via the Metadata pane.
- All presets and styles used in Photo RAW.
- All Extras, including any you have imported.
- All of the edits made on any image in the Edit module.

To back up your Photo RAW system, choose Back Up Data from the File menu in the Browse module. The Back Up Data window will let you choose a location for your backups, and also let you set a reminder schedule (daily, weekly, monthly, or no reminder) for backups. When you click the Back Up button, Photo RAW will create a .onbackup file in your chosen location, with the date and time embedded in the filename.
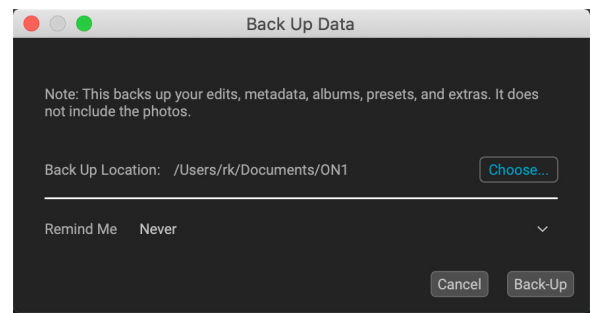
To restore your system to the latest backup, choose Restore Data from the File menu in Browse. (Depending upon the situation, you might need to reinstall ON1 Photo RAW 2022 first.) The Restore Data window will prompt you for the location of your backups, and will choose the most recent backup to restore from. (If, for some reason, you would like to use an earlier backup, just move the most recent one to another location on your hard drive.)

Clicking Restore will pull the information from the backup and apply it to your Photo RAW setup. During the restoration process, if Photo RAW can't find the proper folders with your photos, it will present the Missing Folders window, with a list of each folder that it can't find. You can click the Locate button to reconnect the folder, or you can click the 'X' to the left of the folder name in the window to remove it from Photo RAW's database.
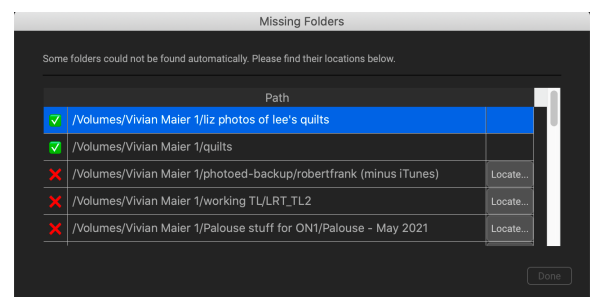
> **NOTE:** Photo RAW's back-up feature will not back up your photos; you should use other methods to ensure that your photos are backed up in a safe place.

ON1 PHOTO RAW
Common Keyboard Shortcuts

	Windows	macOS
Change Modules/Tabs		
Browse		G
Develop		D
Effects		S
Portrait		I
Local Adjustments		A
Resize		Y
Preview Nagivation		
Zoom-in	^ +	⌘ +
Zoom-out	^ —	⌘ —
Fit to Screen	^ 0	⌘ 0
Zoom to 100% (1:1)	^ ⌥ 0	⌘ ⌥ 0
Pan Photo	hold space	
View & Window Modes		
Grid View		G
Photo View		E
Filmstrip View		F
Compare View (Browse)		C
Fullscreen	n/a	⌘ ^ F
Hide Right Panel	^ →	⌘ →
Hide Left Panel	^ ←	⌘ ←
Hide Both Panels	→⊦	
Split-Screen Compare (Develop/Effects)	^ Y	⌘ Y
Preview and Masking Views		
Original View (Preview Off)	\	
Show Mask	O	
Show Clipping	hold J	
Enable Soft Proof	⌥ S	⌥ S
Browse		
Change Thumbnail Size	+ /—	
Browse a Folder	^ B	⌘ B
Select All	^ A	⌘ A
Select None	^ D	⌘ D
Deselect	/	
Set Rating	1-5	
Set Label	6-0	
Dislike	X	
Like	P	
Clear Like/Dislike	U	
Delete	⊠	
Enable Filters	^ I	⌘ I
Search Text	^ F	⌘ F
Presets		
Open Quick View Browser	⌥ ↑	⌥ ↑
Insert Preset	⌥ click	⌥ click

	Windows	macOS
Photo Settings		
Rotate 90	^]	⌘]
Rotate -90	^ [	⌘ [
Reset All Settings	⇧ ^ R	⇧ ⌘ R
Copy Settings	⇧ ^ C	⇧ ⌘C
Paste Settings	⇧ ^ V	⇧ ⌘ V
Sync Settings	⇧ ⌥ S	⇧ ⌥ S
Create Version	^ ′	⌘ ′
Brushing		
Bigger Brush	]	
Smaller Brush	[	
Increase Brush Opacity	⌥]	⌥]
Decrease Brush Opacity	⌥ [	⌥ [
Increase Brush Feather	⇧]	
Decrease Brush Feather	⇧ [	
Rotate Brush Clockwise	⇧ ⌥]	⇧ ⌥]
Rotate Brush Clockwise	⇧ ⌥ [	⇧ ⌥ [
Set Brush Opacity	⌥ 1-0	⌥ 1-0
Toggle Perfect Brush	^ R	⌘ R
Hold Perfect Brush Color	hold ^	hold ⌘
Toggle Paint-in/Paint-out	⇧ X or hold ⌥/⌥	
Invert Mask	^ i	⌘ i
Draw Straight Line	⇧ click	
Misc		
Quick Export	⇧ ^ S	⇧ ⌘ S
Print	^ P	⌘ P
Undo	^ Z	⌘ Z
Redo	⇧ ^ Z	⇧ ⌘ Z
Quit	^ Q	⌘ Q
Tools		
Crop		c
Adjustment Brush		K
Adjustable Gradient		⇧ K
Spot Healing Brush		Q
Perfect Eraser		⇧Q
Retouch Brush		R
Clone Stamp		S
Masking Brush		B
Gradient Mask/Masking Bug		M
Line Mask		⇧P
Refine Mask		N
Zoom/Pan		Z
Move/Transform		V
Text		T
Portrait		⇧I
Chisel		H
Blur		L

^ Control   ⌘ Command   ⌥ Alt   ⌥ Option   ⇧ Shift   →⊦ Tab

ON1 Photo RAW 2022 User Guide
©2016-2021 ON1 Inc.
Version 2022.1 (December 2021)