

Photography Group: Digital Session

Panoramas

by **Stephen Jones**

What is a Panorama ?

Definitions from three dictionaries are:

“An unbroken view of the whole region surrounding an observer”.

“An extensive, unbroken view as of a landscape, in all directions”.

“A view of a wide area”.

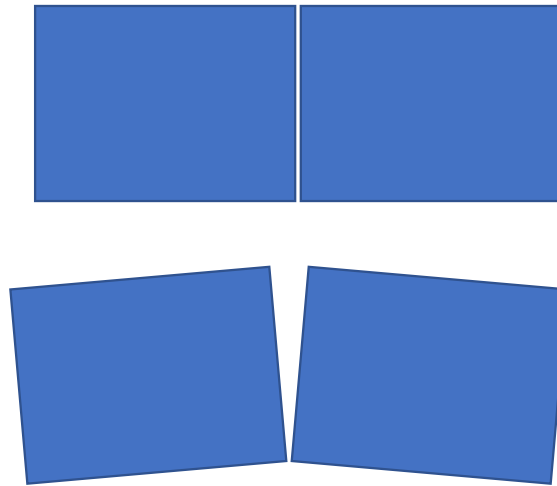
However, I would define a Panorama photograph as being

“Two or more photographs joined together to form a wider field of view” [than a single photograph could provide].

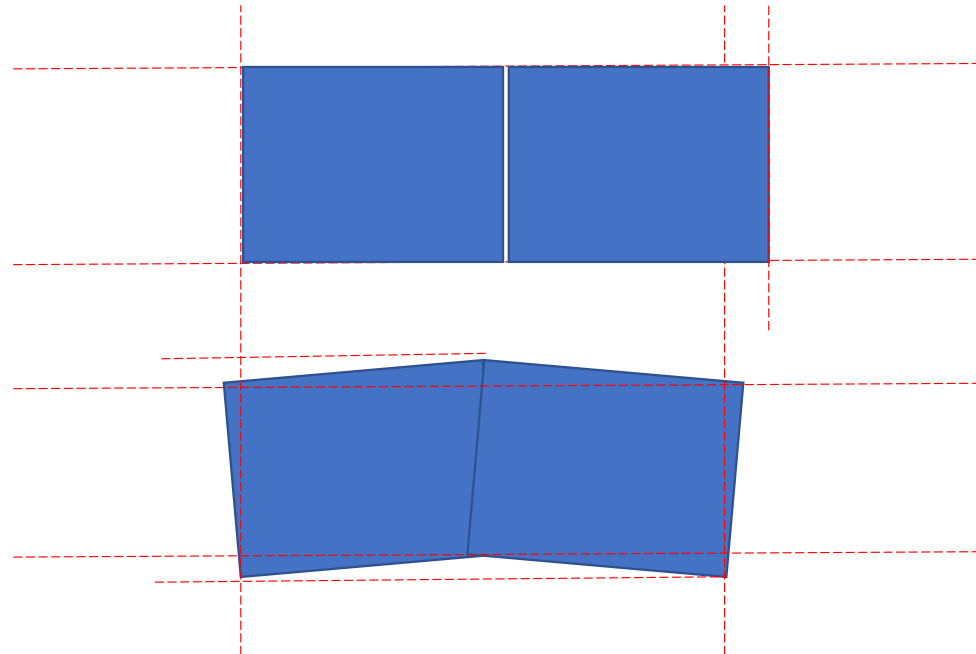
Panoramas

- Using the camera's Panorama picture mode
- Taking panoramas "manually"
- Technical considerations
 - Level
 - Perspective
 - Focus
 - Exposure
 - Lens – focal length
- Using software to stitch photos together
- Panorama examples

Technical considerations: Level



Technical considerations: Level



In-camera Panorama mode:

Most cameras nowadays have a “Panorama” setting.

While holding the camera level, you press and hold down the shutter and pan across the scene enabling the camera to take multiple exposures which it then stitches together in-camera to produce the final panorama.

We often associate a panoramic photograph as having a “letterbox-style” format but this need not always be the case.

Some cameras will allow you to take a panorama using a “portrait” orientation and in this instance, panning horizontally across a landscape, you will capture more foreground and sky.

“Manual” panoramas:

Why not always use the camera’s Panorama setting ?

The answer to this is twofold:

- The camera manufacturer does not believe you will hold the camera level while panning across the scene and so at the end of the sequence of panorama photos, the camera will automatically chop off huge amounts at the top and at the bottom of the frame to be sure of achieving a constant level. And this really does give rise to a “letterbox” format.
- The second – and to my mind – the major reason is that you may not wish to take as wide a view as the camera wants to take - if you use your computer to stitch photos together, you only need combine two photos to get just a slightly increased field of view which may be more appropriate to cover your subject.

Panoramas

“Manual” panoramas:

Single landscape wide-angle photo



3 x portrait photo panorama



“Manual” panoramas:

Keeping the camera level, take a photo, pan slightly – provide about a 30% overlap – take another photo ... and repeat until you have covered the entire scene.

The combining (“stitching together”) of these photos are done later on a computer using photo processing software such as Lightroom, Photoshop, etc..

Panoramas



Single photo, portrait

Panoramas



In-camera panorama, portrait

Panoramas



Manual panorama, 3 x portrait photos

Single photo,
landscape



Panoramas



In-camera panorama,
landscape



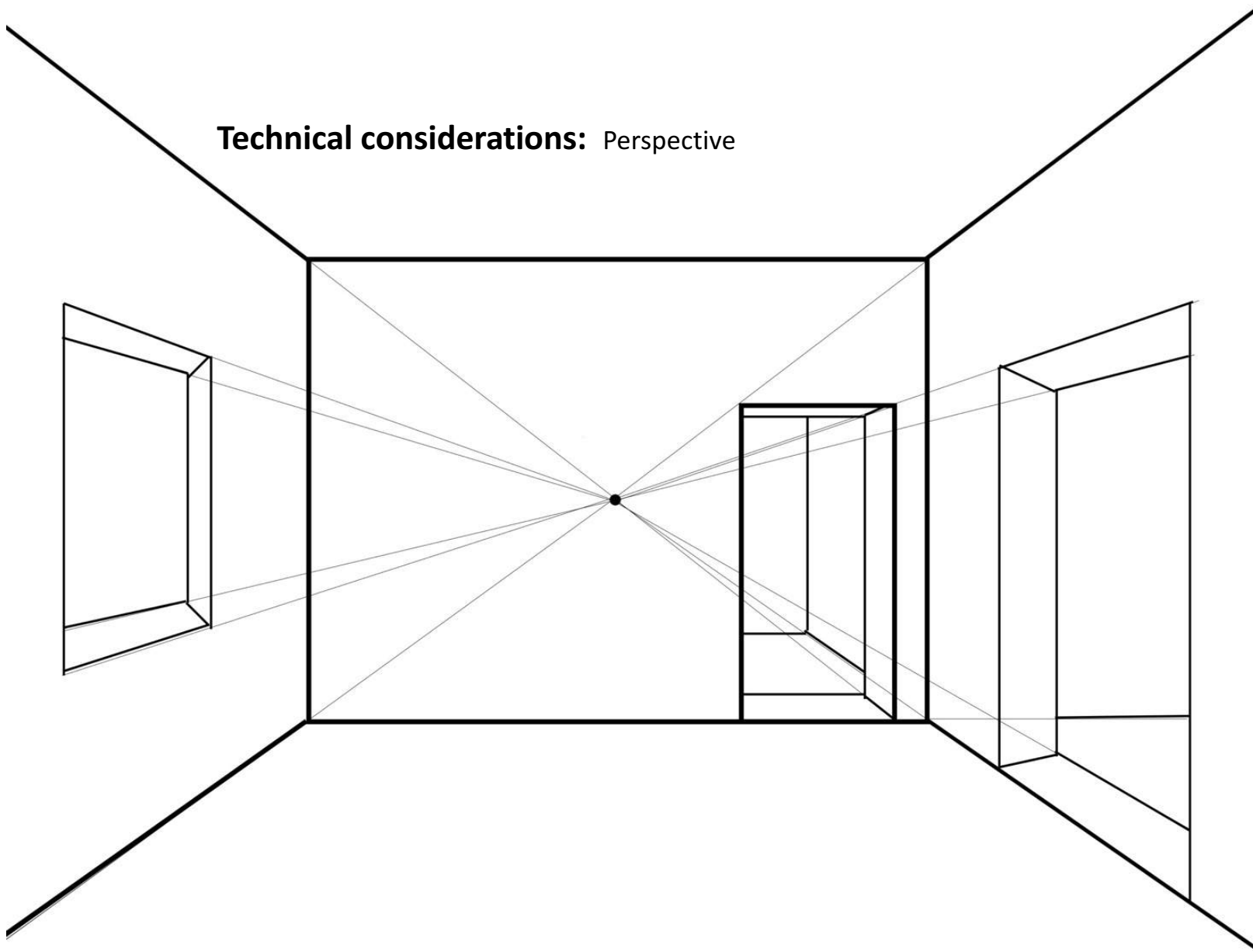
Manual panorama,
landscape



Manual panorama,
portrait



Technical considerations: Perspective



Technical considerations: Perspective



Technical considerations: Perspective



Technical considerations: Perspective



Technical considerations: Perspective



Move further away from a feature parallel with the camera's sensor in order to reduce perspective distortion.

Technical considerations: Perspective



Technical considerations: Focus

Before taking the panorama, pan through the range and check on both near and far objects.
Set the camera to manual focus and choose what you want to be in focus.



Technical considerations: Exposure

Before taking the panorama, pan through the range and check on the light – how does the exposure change across the extended scene.

Set the camera to manual exposure and choose an exposure - for example set an average, or perhaps set the exposure for a particular part of the scene which you want to emphasise.

Beware of being in the middle of a series of photos on a sunny day and the sun suddenly going behind a cloud.



Panoramas

Technical considerations: Focal length

Wide angle lenses are great for capturing a wider view – but they often create distortion and this can create errors when stitching photos together.

Give the stitching software a chance: try to keep geometric shapes in the centre of frames, rather than at the edges.



Panoramas

Technical considerations: Focal length

In fact, the software is brilliant (this panorama is the two previous images stitched together) but it's better not to test it so much !



Technical considerations: Focal length

If you are interested in a distant view, instead of using a wide angle lens and cropping the foreground, (therefore losing pixels and losing definition) use a telephoto lens and make a panorama (keeping pixels and high definition).

This is a single wide angle photo.



Technical considerations: Focal length

If you are interested in a distant view, instead of using a wide angle lens and cropping the foreground, (therefore losing pixels and losing definition) use a telephoto lens and make a panorama (keeping pixels and high definition).

3 x photo panorama in landscape format with a telephoto lens



Panoramas

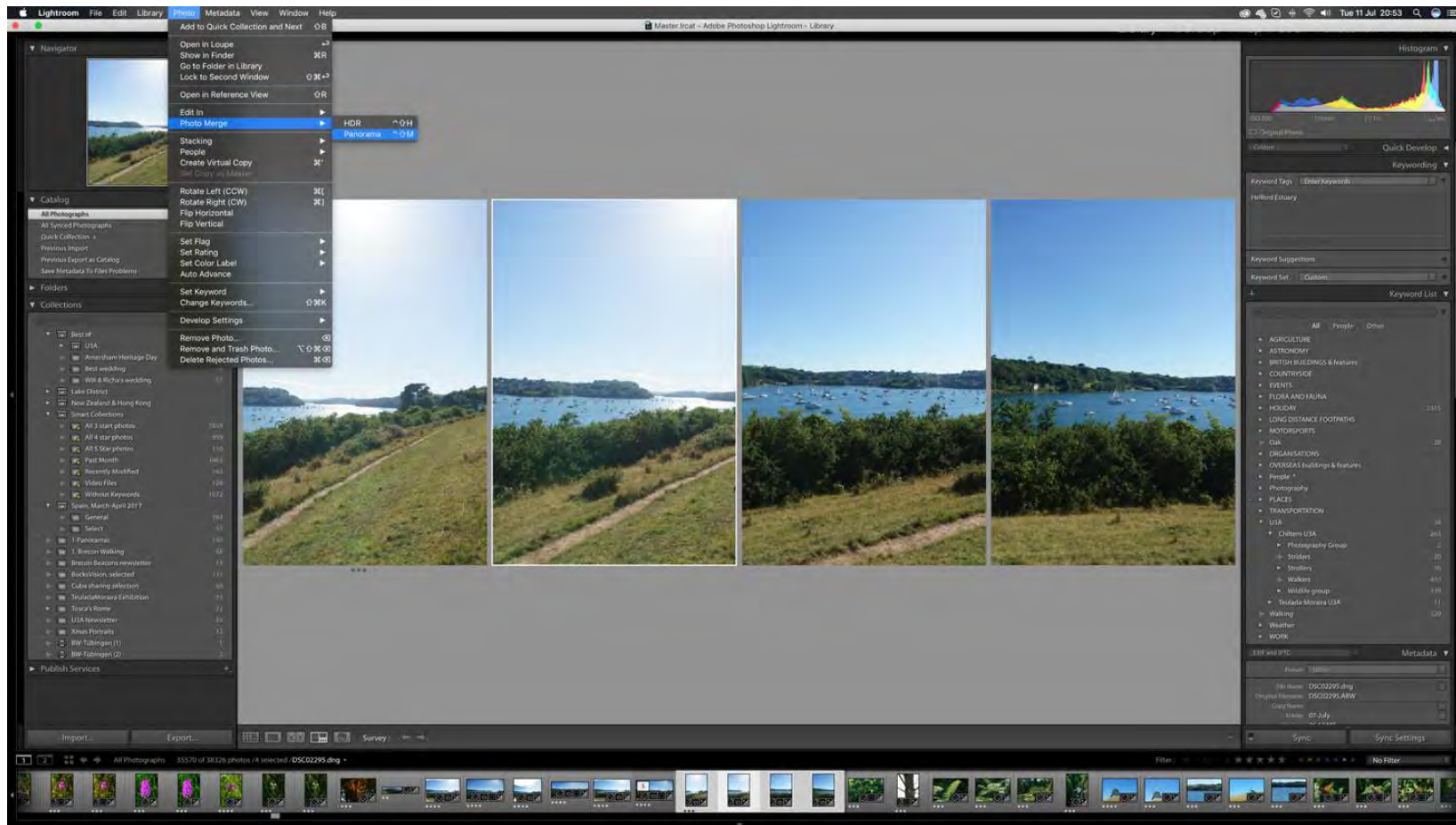
Using Lightroom to stitch photos together:

Select the photos you wish to merge in “Library” or “Develop” module and press Ctrl M.

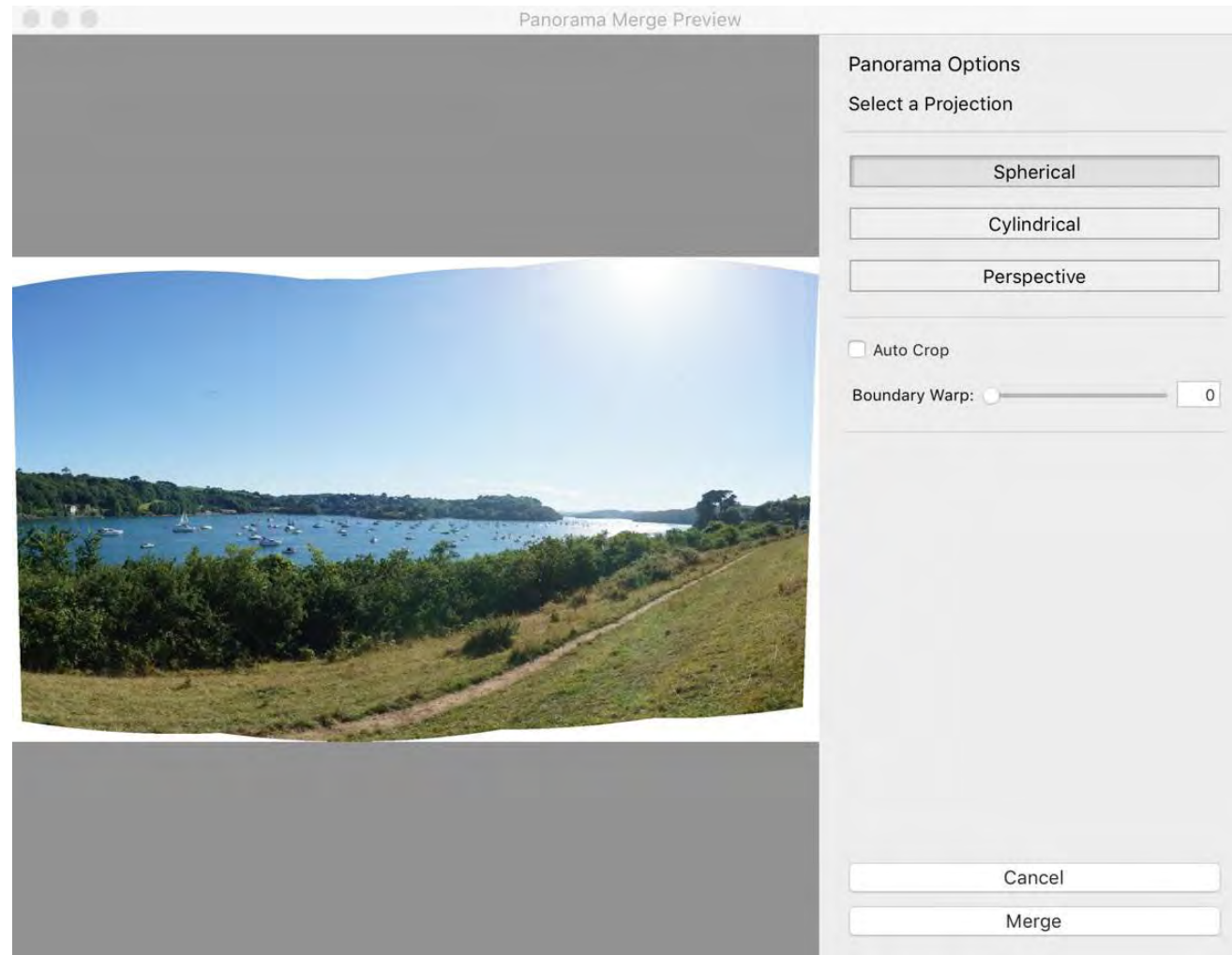


Using Lightroom to stitch photos together:

Alternatively go to the menu and select “Photo”, Photo Merge, Panorama.



Using Lightroom to stitch photos together:



Using Lightroom to stitch photos together: Spherical Projection



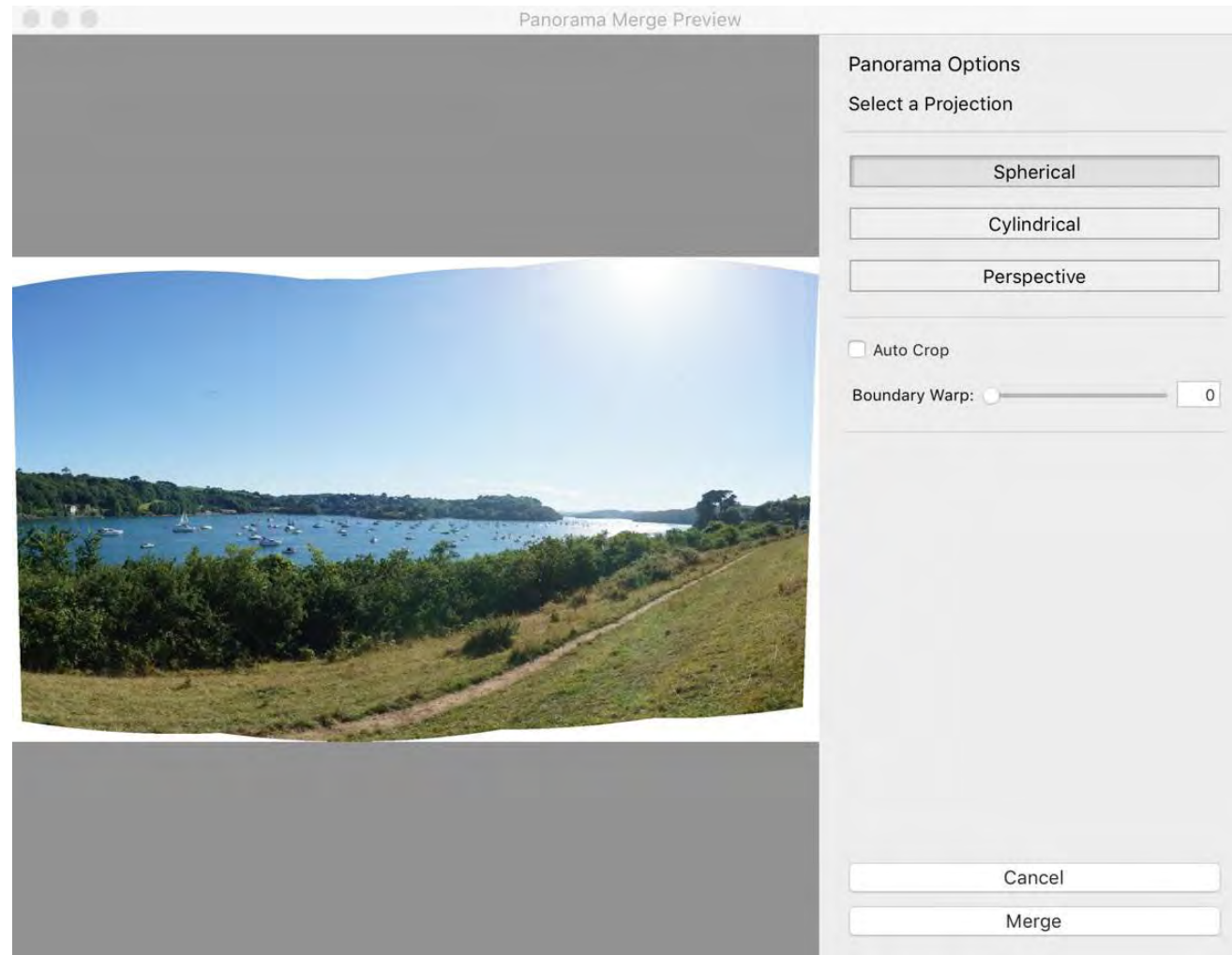
Using Lightroom to stitch photos together: Cylinder Projection



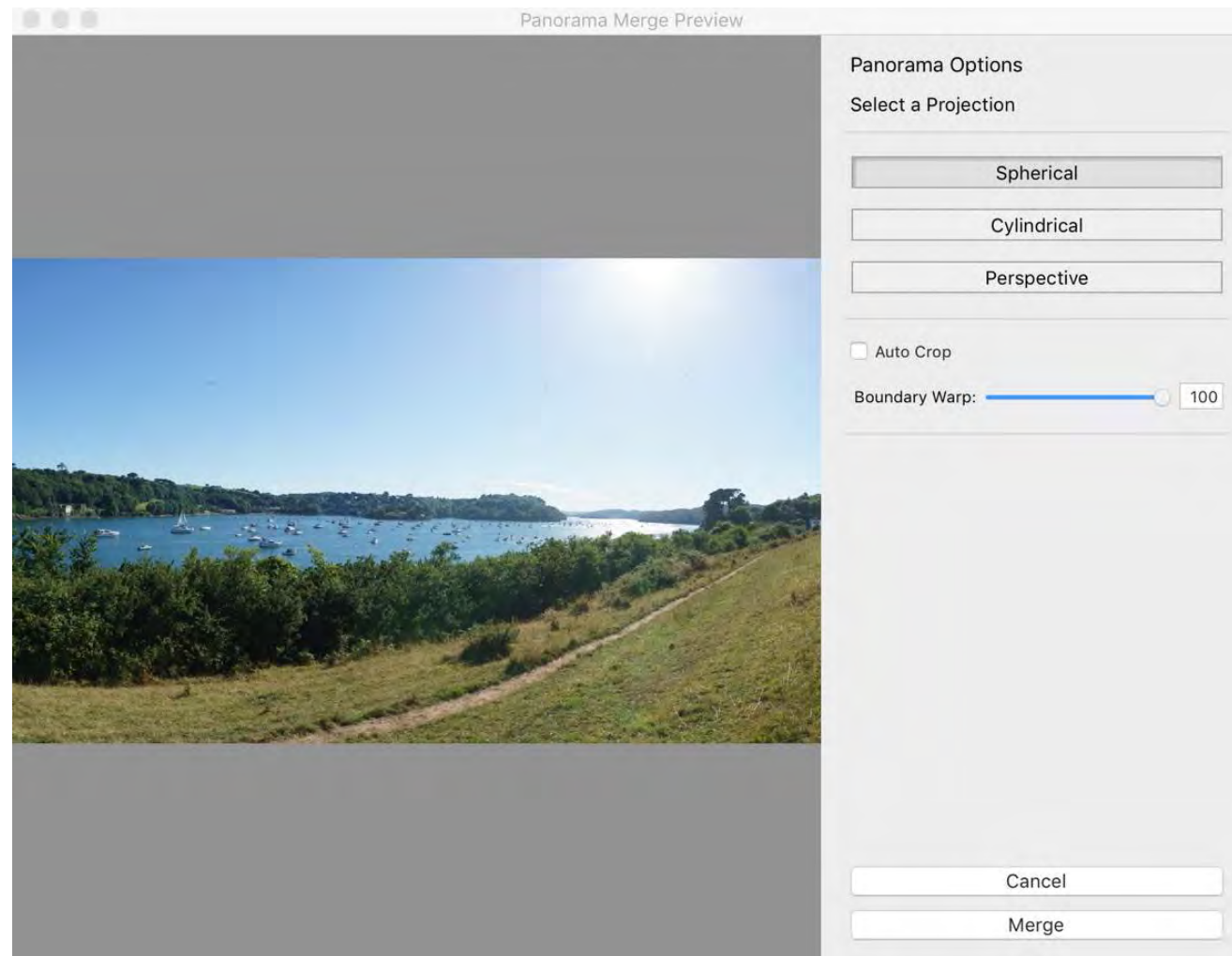
Using Lightroom to stitch photos together: Perspective Projection



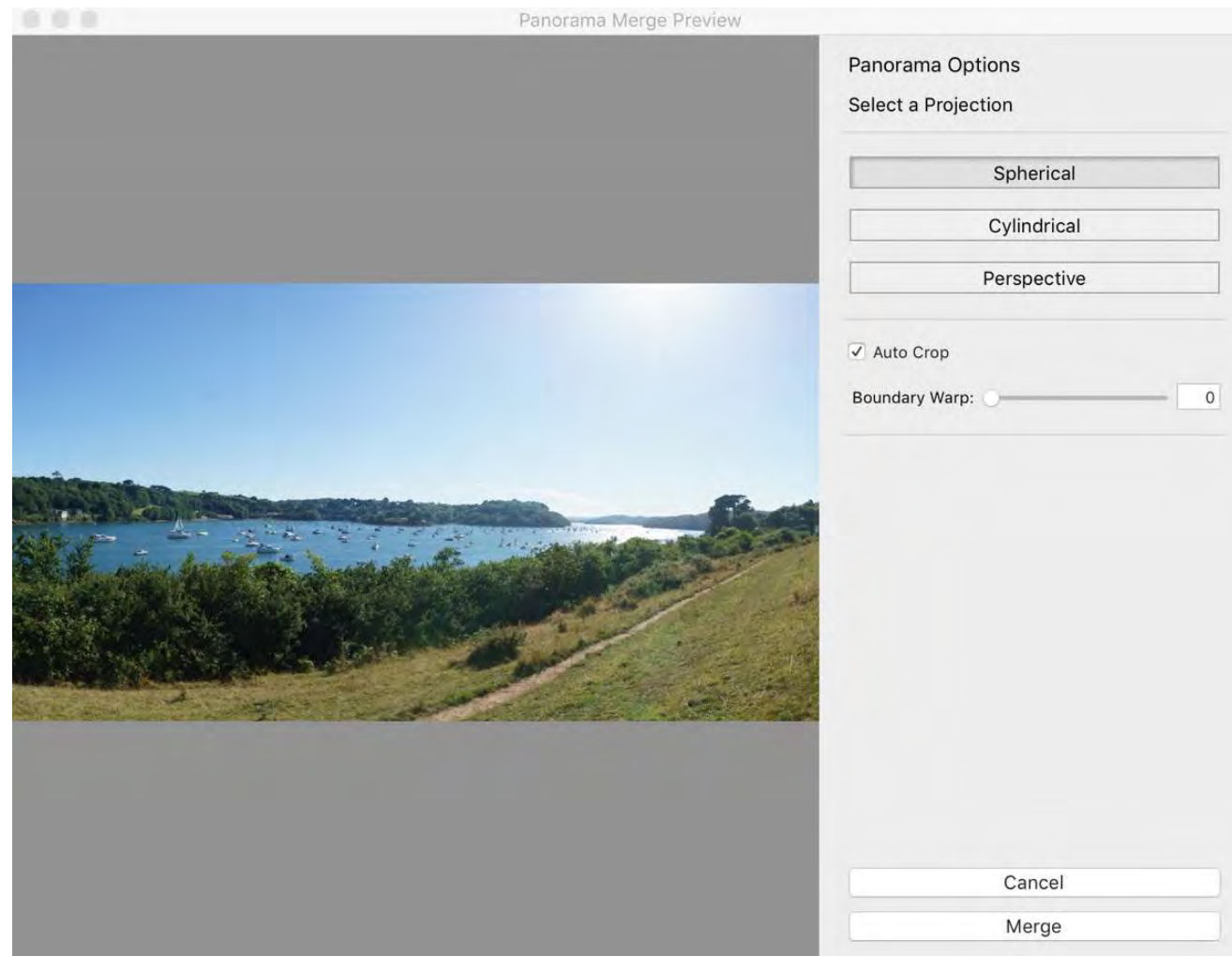
Using Lightroom to stitch photos together:



Using Lightroom to stitch photos together:



Using Lightroom to stitch photos together:



Using Lightroom to stitch photos together:

These are the three projection variations (all with Auto Crop).



Spherical projection



Cylinder projection



Perspective projection

Using Lightroom to stitch photos together:

The finished panorama (using perspective projection)



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



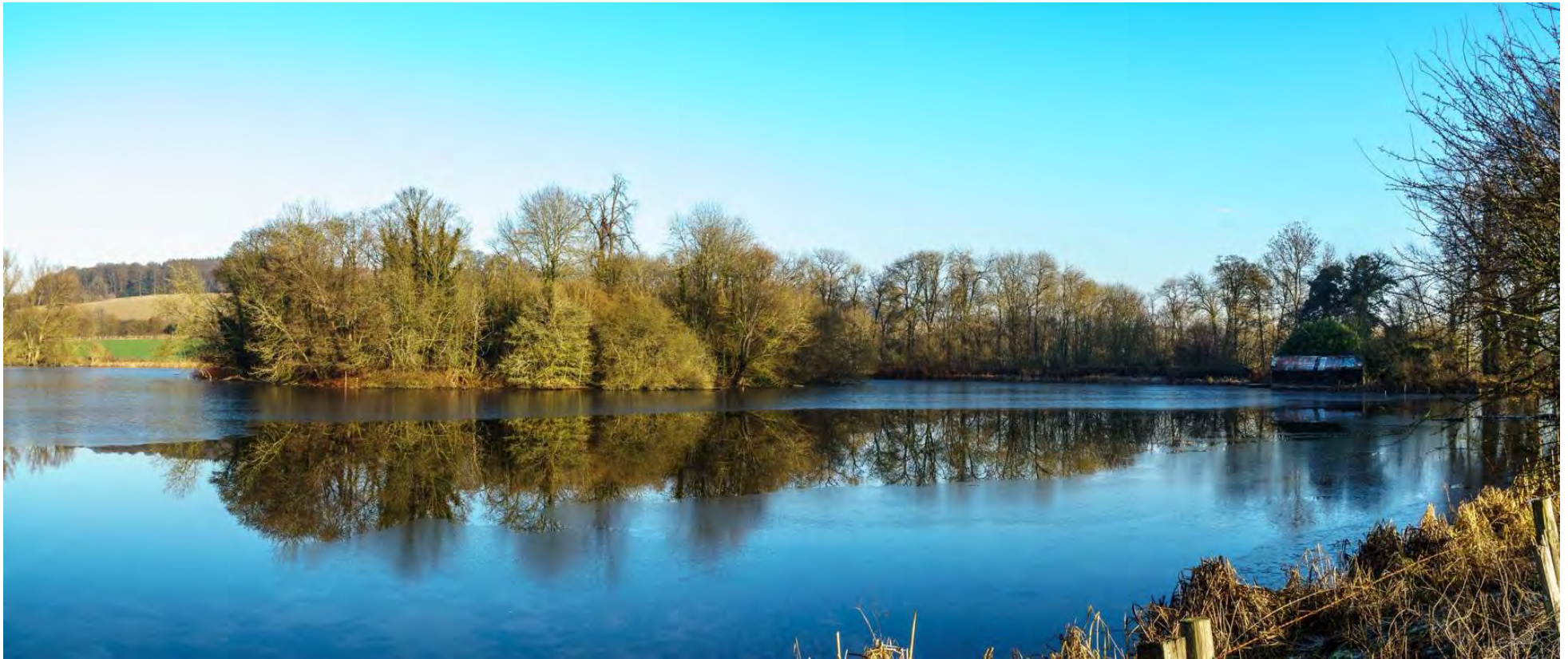
Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples



Panorama examples

This is a single photo taken with an ultra-wide angle lens.



Panorama examples

3 x photo panorama taken in portrait format with a wide angle lens.



Panoramas

Panorama examples:

Detail views, panorama photo above, ultra-wide angle photo below.



Panorama examples

3 x photo panorama taken in portrait format with a wide angle lens provides far more detail.

