

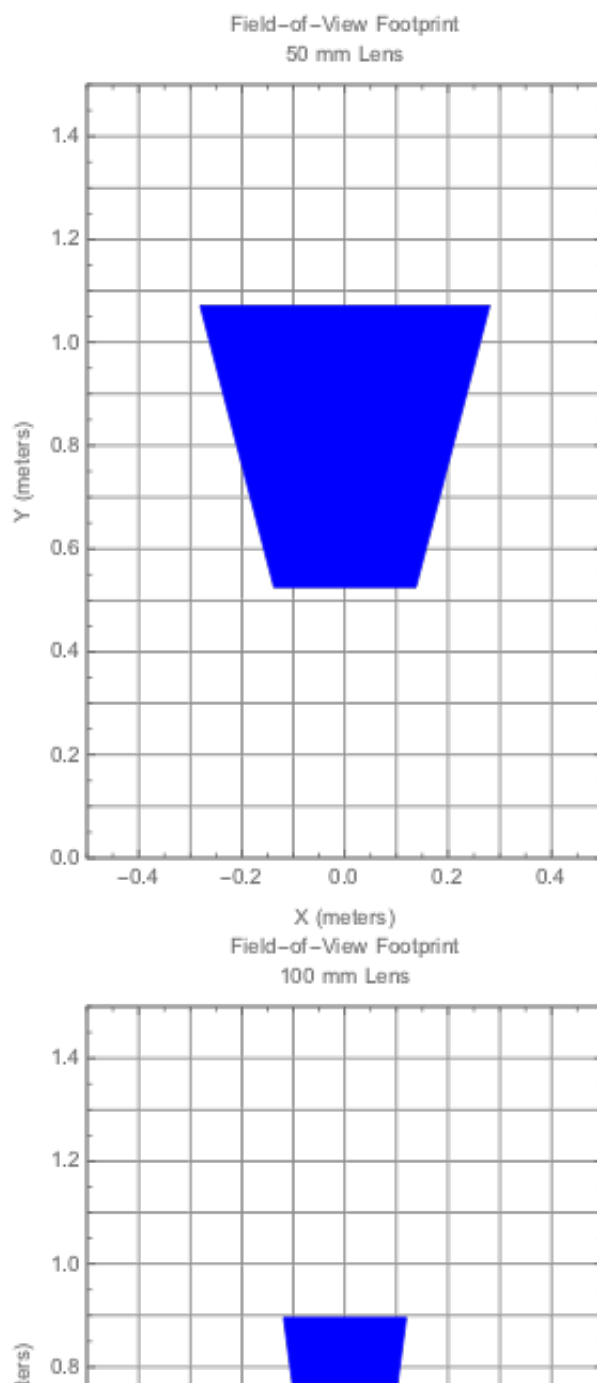
From: **Paul McGill** mcgill@mbari.org
Subject: Re: Smith macro camera
Date: March 23, 2020 at 2:42 PM
To: Alana Sherman alana@mbari.org

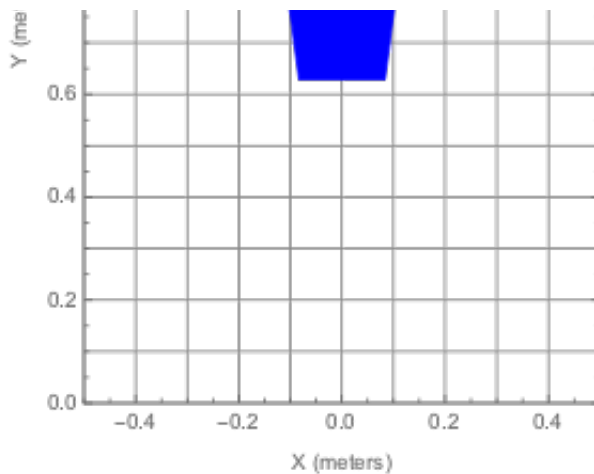
PM

Okay, I didn't have to do any photogrammetry after all because I found some calculations I did in August. Here's the executive summary:

Field of view in water with 50 mm lens: 29 deg x 20 deg
Field of view in water with 100 mm lens: 15 deg x 10 deg
Height of camera: 0.75 m
Down angle of camera: 45 deg
Distance to center of field-of-view on seafloor: 1.06 m

Here are the footprints on the seafloor for each field-of-view, with distances measured from the camera nadir. Note the longer lens (100 mm) is more "zoomed in" and thus has a smaller footprint.





"if you have time"? You're so sweet - I got nuthin' but time these days! Don't hesitate to throw tasks my way.

I'll take a look at your Google doc too.

On Mar 23, 2020, at 2:28 PM, Alana Sherman <alana@mbari.org> wrote:

Hi Paul

Sorry. I was hoping to have some idea what the FOV and the resolution of the Smith macro cam set up in my office was. So yes, please do make those calculations if you have time. I am just trying to give Jim Barry some rough idea of what we are looking at (in terms of image parameters). Also if you have a chance can you look at this google doc I made to start trying to put together requirements for what I am calling the coral macro cam. I am sure I am missing a lot of questions but I think this will get things started.

https://docs.google.com/document/d/1ywVSqEBQZEgo65PPBzQXUKtKfopCfyI7RDgcCK6p_2E/edit?usp=sharing

Thanks

Alana

----- Original Message -----

From: Paul McGill <mcgill@mbari.org>

To: Alana Sherman <alana@mbari.org>

Sent: Mon, 23 Mar 2020 14:11:17 -0700 (PDT)

Subject: Re: Smith macro camera

Oh, that's right. I agree with you, I think the images with the depth-of-field target were with the 50 mm because some of the shots on the resolution target are much more zoomed in, and are probably the 100 mm. I checked the EXIF data on the images but no focal length is listed because we used "dumb" lenses. It did confirm that we used a Canon EOS 5D Mark IV (you probably knew that) because I'll have to look up the image sensor size.

Here's what I'm going to do: I'll calculate the distance-to-target from the depth-of-field target and I'll calculate field of view for both 50 and 100 mm lenses. It will take a little while so if you don't need those numbers then let me know. I'm having trouble getting a clear answer from you on what you want :-)

On Mar 23, 2020, at 1:56 PM, alana <alana@mbari.org> wrote:

we had two lens we were trying out. The 50 and the 100.

On Mar 23, 2020, at 1:56 PM, Paul McGill
<mcgill@mbari.org> wrote:

Do you want me to run the calcs I mentioned (distance-to-target and field-of-view)? Isn't the exact lens we used in your B&H order history (or wherever you bought it)?

On Mar 23, 2020, at 1:52 PM, alana
<alana@mbari.org> wrote:

yeah, I wish I grabbed my notebook...that would really help now. I think those are done with a 50 mm lens but not 100% sure.

On Mar 23, 2020, at 1:42 PM, Paul McGill
<mcgill@mbari.org> wrote:

I didn't do any photogrammetry, but what do you want to know? I can probably calculate an approximate distance-to-target if you give me the focal length of the lens. With that I can also calculate a field-of-view in water, based on calculation and not measurement.

I'm afraid any other measurements I have of strobe separation or camera height are in my notebook at work. If I'd known I wasn't coming back for a while, I would've grabbed more stuff...

On Mar 23, 2020, at 1:31 PM, alana
<alana@mbari.org>
wrote:

Hi Paul

Hi Alana

Did you do any photogrammetry on the images we took for Ken's macro camera? They are in

<\\atlas\ProjectLibrary\900622.PelagicBenthic\CameraTripod\Macro\LensResolutionTestImages>

(I wrote that out by hand so I apologize if it is not correct but you will get the gist of where to find them. Unfortunately I don't have my lab notebook at home which probably has most of the notes. I think we measured our distance from the target and the lights spanned 1 m. I was going to put together a list of questions for Jim on putting together camera specs but I know he wanted to know the specs for the smith macro camera and I don't know those.

Alana

