Nutrient Diffusing Substrate Study Hemispherical Photo Notes

1. To better understand [factors influencing periphyton in streams, including the potential for light limitation](https://www.google.com/search?rlz=1C5CHFA_enUS873US873&ei=6_yVX4KfAdG3tAaS4rTwCQ&q=canopy+cover+light+limitation+periphyton&oq=canopy+cover+light+limitation+periphyton&gs_lcp=CgZwc3ktYWIQAzoFCCEQoAE6BQghEKsCUOEcWKQyYPU1aABwAHgAgAFeiAGWBJIBATaYAQCgAQGgAQKqAQdnd3Mtd2l6wAEB&sclient=psy-ab&ved=0ahUKEwjCwOST5tDsAhXRG80KHRIxDZ4Q4dUDCA0&uact=5), [hemispherical photos](https://en.wikipedia.org/wiki/Hemispherical_photography) were created to evaluate canopy cover percentages at each NDS site sampled in 2014.
2. Images were created using a [Canon EF 8-15mm f/4L USM fisheye lens](https://www.usa.canon.com/internet/portal/us/home/products/details/lenses/ef/ultra-wide-zoom/ef-8-15mm-f-4l-fisheye-usm) on a full-frame Canon EOS 5D Mark II camera creating a 180 degree field of view at 8mm.
3. The camera was placed on a tripod at a location as close to the NDS rack and the surface water elevation as possible. The camera was leveled and oriented in such a manner that the top of the image was oriented due north.
4. Most images were taken at 8mm, but do to user error, a couple of images were taken at focal lengths of >8mm and will need to analyzed appropriately or results adjusted following the analysis.
5. The .jpeg files submitted are named as follows:
   1. Photo Date,\_Waterbody Name, Station Number, Keywords, Exposure.jpg
   2. Four exposures have been submitted: 1-3 are single exposures from darkest to lightest (metering: -1,0,+1), HDR is a composite of these three exposures
6. The HDR files have been edited to clip the edges outside of the round fisheye image, so these values should be completely black (solid blue area in screenshots below). This may help facilitate analysis.
7. Photos could be further edited to ease analysis if necessary. This could include clipping values for both shadows (solid blue area in screenshots below) and highlights (solid red area in screenshots below) so that those values could be more easily selected in analysis.

A picture containing photo, sitting, green

Description automatically generatedA close up of a logo

Description automatically generated