

Guidelines For Taking Geotagged Digital Photos

Purpose

This document was originally created to provide instructions to grantees for providing geotagged digital photos to the DWR Grant Manager as an alternative to DWR staff conducting site visits during the COVID-19 pandemic. The two primary objectives of taking geotagged digital photos are 1.) to ensure that all project area components have been sufficiently documented by the grantee in lieu of a site visit; and 2.) enables the DWR Grant Manager to verify and overlay photo locations using ArcGIS or other geographic information system (GIS) software. Geotagged drone imagery may be substituted for or supplement manual photos; please consult with DWR Grant Manager prior to submitting drone imagery.

General Guidelines For All Photos

- File Size: please check your phone or camera's settings and set to a moderate resolution to ensure that the photo resolution (quality) is adequate, but the photo's file size is not too large by taking a test photo and checking its file size. Generally a file size of 2.5mb – 5mb per photo is ideal.**
- Contextual photos: ensure that are taken of each of the project components listed on the grantee's scaled site plan and described in the grantee's application and/or any subsequent DEQ contract amendments.
- Orientation: take all photos with the camera oriented in a landscape (not portrait) position. An exception to this rule would be if taking a photo of a tall vertical structure or point of interest.
- Photopoints: take at least two photos, in opposite directions, at every photo location.
- Safety: please be aware of, and do not risk one's personal safety. Potential hazards include slips, trips & falls, stinging insect nests, property trespassing and extreme weather.

Stream Restoration Projects

- Photopoints
 - 1) Take at least two photos at every photopoint, one facing upstream and one facing downstream.
 - 2) Take as many photos as possible within the stream channel if conditions are safe.
- Structures
 - 1) Take photos of all in-stream structures constructed/installed. An additional photo shall be taken across an instream crossing (bridge, ford, culvert).
 - 2) Take photos of all out-of-stream structures within the riparian area constructed/installed. For livestock exclusion fencing please take photos in both directions of the fencing along the upstream, midstream and downstream portions of the reach.
- Riparian Buffer:
 - 1) Take photos along both sides of the stream along the upstream, midstream and downstream portions of the reach.
 - 2) Take at least one zoomed-in (close-up) photo of plantings along both sides of the stream along the upstream, midstream and downstream portions of the reach that show enough detail to determine the species and condition of the plantings in a small area.

Water-Based Recreation Projects

- Flagging: lightly flag proposed alignments if not in obvious rights-of ways prior to taking photos.
- Trails: take photos of the trail beginning, at least two photos along every 100 feet of trail and the trail end.
- Structures: take a photo from each end of the recreational structure and a photo of the entire structure (where possible and not in water).

Water Management Projects

- Photopoints: take at least two photos at every photopoint, one facing upgradient and one facing downgradient.
- Structure: take photos of the inlet and outlet.
- Drainage Area: take photos of the upgradient and downgradient areas. Both photos should show the structure inlet in relation to the drainage area.

To Enable Photo Geotagging

Most smartphones that are less than 5 years old have the capability of geotagging photos if the gps/geotag setting is turned on; additionally all gps-enabled cameras can geotag photos in their gps mode. Please be aware that the coordinates embedded in photos taken by smartphones may not be as accurate as those taken with a gps-enabled camera.

Below are links with instructions for how to take geotagged photos with smartphones. Please contact the DWR Grant Administrator if additional assistance is needed.

Android

Newer: [Geotagging With Android Smartphones](#)

Older: [How To Use Location Tag For Photos On Samsung Galaxy S7/Edge/S6/Note5/Note4](#)

IPhones & iPads

Newer: [How to add or change a photo's geolocation on your iPhone or iPad](#)

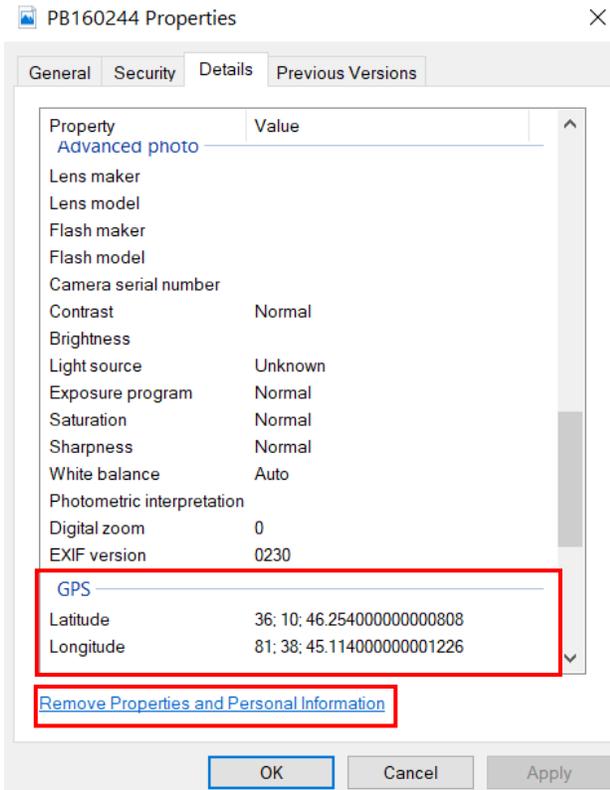
Older: [How to Geotag Photos on Your iPhone](#)

HEIC Files

Please export geotagged photos taken with iPhone in a JPEG file format since geotagged photos exported as HEIC files cannot currently be viewed or processed. For more information about converting HEIC files to JPEG see <https://blog.photobucket.com/how-to-convert-a-heic-image-to-a-jpg#:~:text=Open%20your%20HEIC%20file%20with,Save%20to%20complete%20the%20conversion>.

To Determine Whether A Digital Photo Is Geotagged

Save photos to a computer> Right-click on the filename of the photo> Properties> Details tab> scroll down and look for a GPS section with Latitude & Longitude coordinates. If this isn't listed, then the photo is most likely not geotagged.



Safety Note: please remember to disable the geotagging function if you do not want the recipient of your photos to be able to determine the location of where your photo was taken. To remove geotagging from a photo, click the *Remove Properties & Personal Information* link highlighted above.

To Verify The Location Of A Photo Using Google Maps

Enter coordinates in the Search area (see graphic below) with the following format: ### ##.#####N, ## ## ##.###W. For Example: 36 12 34.56789N, 75 12 34.56789W



Photo File Transfer to DWR

- Use an approved file-sharing website (Microsoft OneDrive, SharePoint, Dropbox, FTP site, etc.) to upload photos. Google Drive can be used but is least preferred because it cannot be accessed while connected to NC DEQ's computer network.
- Create folders to place photos in using the appropriate naming conventions (i.e. structures, riparian buffers and miscellaneous items).
- Email DWR Grant Manager ([Amin.Davis@ deq.nc.gov](mailto:Amin.Davis@deq.nc.gov)) a link to where the photos can be viewed and downloaded as part of the final reimbursement request for release of DEQ's 10% retainage of grant funds.

The DWR Grant Manager will review all of the photos taken to determine if they were taken in accordance with this guidance document and adequately document the project area. The DWR Grant Manager will contact the grantee regarding this determination and if any additional actions are needed associated with project review or close-out.