Time Lapse Camera Installation Notes from Grand Mesa, Colorado (SnowEx 2020)

September-October 2019; retrieved June and August 2020

Materials (for one setup)

1. Camera and Mount:
   a. Wingscapes Timelapse Camera
   b. 8AA lithium batteries
   c. SD Card (32GB recommended)
   d. Wood Shim (make these yourself – 10-15 degrees works well, cut from 2 by 4 pieces and around 6-10" length). If the area is flat, these don't need to be large or long.
   e. One 1-3/4 in. x 3-1/2 in. x 6 ft. Green Steel Fence T-Post
   f. 3-5 Zip ties (14" UV resistant work well)
2. Pole
   a. One 1-3/4 in. x 3-1/2 in. x 5 ft. Green Steel Fence T-Post (4' ones would work, too)
   b. Cut in half one 10' long PVC pipe (white originally, painted red/orange), 1.5" or 2"
      i. 1.5 can be fastened with three 14" zip ties, 2" will fit over t-post.
      ii. Ludo Brucker Modification: duct tape of another non-background winter color (yellow/red/pink/orange) can be used to create a 10 cm band around the top of the pole. Standard duct tape is 48 mm wide, so double wide.

Equipment

1. Gloves
2. Leatherman/multitool
3. T-post driver
4. Spray Paint (enough to cover poles and field touch-up as needed)
5. Duct Tape (black and red/yellow/orange)

Setup Procedure.

1. Locate desired area for depth measurement.
2. Install pole t-post. *If the PVC is 1.5", the "valley" of the t-post needs to point roughly where you want to place the camera so the t-post is not visible to the camera*.
3. Attach painted pole with a 10cm tape band on top of the pole that is a discernably different color than the pole. *If PVC is 1.5", it will cradle in the t-post on the outside toward camera position.*
4. One might need to trim vegetation around the base of the pole, if it is obscured as viewed from the camera's position. You should see entire pole.
5. Set up Camera t-post some distance away. This is usually ~8-20 m, depending on the site and angles. *If you turn the camera to the [SETUP] setting and press the center [OK} button you'll be able to see what the camera sees on the video screen. You want the pole to take up most of the frame and be clearly visible from top to bottom.*
6. Install t-post. Make sure the spade part is buried and the cradle faces the pole. You want a level surface to serve as your attachment mount.

7. Mount the wood shim to the t-post top. Sometimes wrapping the shim in duct tape is helpful to avoid sliding. Fasten shim to t-post with 2 zip ties and tape, or just tape.
8. Attach and aim camera (with batteries and card pre-loaded) with the shim and putting the 3 legs where it works to capture the stake. Fasten with zip ties. On the rear sides of the camera there are two rectangular brackets. I place one zip tie in one way, and the other zip tie the other so that both brackets are used for each zip tie. In cold conditions under strain, sometimes the zip ties can break. The strap can be used, too, but zip ties work well. Ideally you don't want movement in high winds or the strap flapping in front of the lens in a breeze.
9. Once the camera is attached and aimed, turn the camera to [ON]. It should start a 30 second counter. Note the camera only takes a photo if you are in the time lapse period (see camera setup instructions below).
10. Close the cover and leave it running. Make sure lens is clear/clean.

Camera Setup (before installing, or during installation; see manual)

1. Turn the power/slider button to [SETUP], which brings up the [general settings] menu.
2. Press the [right arrow] to scroll through settings (left arrow goes back)
3. [Date and Time] is the first setting. Press [OK]
4. Change date (MM/DD/YYYY) and time. Make sure time is correct, especially AM/PM.
5. Photo or Video [Photo]
6. Time Lapse Interval [1 hour] (this can be changed from 10 seconds to 24 hours; however, a couple images a day makes the camera run all year)
7. Time Lapse Programs Per Day [1]
8. T.L. Program #1 Start Time [11am]
9. T.L. Program #1 Stop Time [2pm] (creates two shots/day)
10. Upgrade Firmware [NO]
11. Program Security Code [0 0 0 0 0]
12. Temperature Unit [Celsius]
13. AC Connected [NO]
14. Wi-Fi SD Card [NO]
15. Camera Name [<site name>]
16. Imprint Info [YES]
17. Video Length [doesn't matter, 10 sec]
18. Video Quality [doesn't matter, FHD]
19. Photo Quality [ENHANCED (20 MP)]
20. Managed Memory [DO NOT OVERWRITE]
21. ERASE All Images [NO] (if you want to erase test images or format new card, use this)
22. RESET to FACTORY DEFAULTS? [NO]
23. Back at main menu/aiming

You can use the PLAYBACK setting to look at photos and make sure the stake is entirely in there.

Example Setup on Grand Mesa (note camera is looking northeast)