

TA Manual for University of Florida Natural Area Teaching Laboratory

Last revision: February 2015

NATL website: <http://natl.ifas.ufl.edu/>

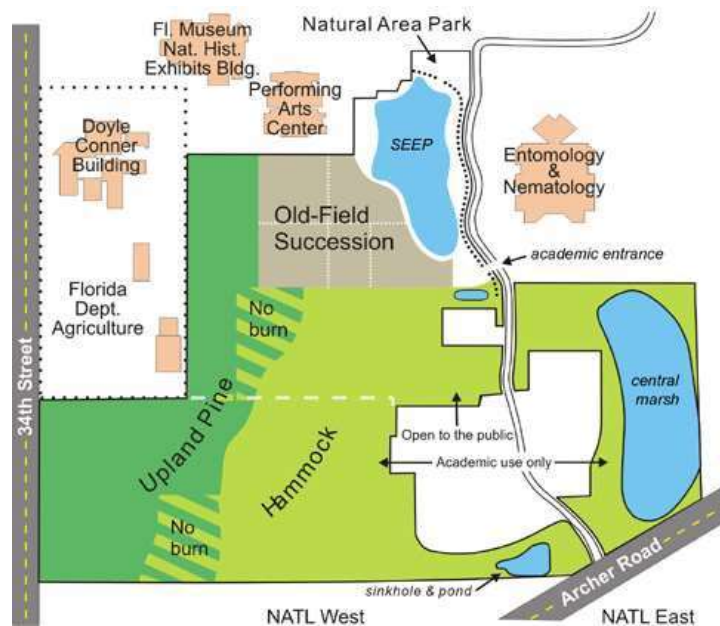
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TA Manual

INTRODUCTION

The UF Natural Area Teaching Lab (NATL) is a 60-acre natural area on campus. Its objective is to educate the UF student body and the general public about biodiversity and ecology. NATL is used by classes from various departments at UF for field trips and as an outdoor laboratory for field experiments. It also provides a place where students and the public can enjoy nature on their own.

NATL consists of two parcels: NATL-west, a 49-acre tract west of Surge Area Drive, and NATL-east, an 11-acre tract east of Surge Area Drive. NATL has nature trails open to the student body and the public during daylight hours. These trails traverse NATL's different ecosystems: [Hammock](#), [Upland Pine](#), [Old-field Succession](#), and [SEEP \(Wetlands\)](#).



TA DUTIES AND ACTIVITIES

Job Description for NATL Graduate Teaching Assistant

This position is a 1/3-time teaching assistantship provided by the Dean of the College of Agricultural and Life Sciences to help maintain, operate, and improve UF's Natural Area Teaching Laboratory. The Graduate Teaching Assistant (GTA) is selected by the Chair of the Natural Area Advisory Committee (<http://natl.ifas.ufl.edu/management>) and the appointment must be approved by that committee.

The Chair of the Natural Area Advisory Committee supervises the NATL GTA. They discuss plans, progress, and problems each week at the Operations Committee meeting.

Responsibilities

A core responsibility of the GTA is NATL's **routine maintenance** (as described below). This may be accomplished entirely by the GTA or with the help of an undergraduate teaching assistant (UTGA). Another core responsibility is to **help academic users of NATL**—for example, by giving classes or instructors introductory tours of NATL. A final core responsibility is to **help the NAAC Chair fulfill his/her duties** as outlined in [NAAC Operating Policies](#).

Core responsibilities are not intended to require all the hours of a 1/3-time assistantship—especially if the GTA elects to delegate most routine maintenance to an undergraduate teaching assistant. Remaining time should be used in ways that are rewarding to the GTA as well as beneficial to NATL. For example, the GTA may undertake a special project in NATL that complements the GTA's research or professional interests. For example, past GTAs have gained administrative experience by organizing volunteer events that benefit NATL. They have also conducted research on control of invasive plants and used the four self-guided nature trails to help educate the public.

Routine Maintenance

Weekly

- Walk or drive NATL's utility vehicle along principal trails in public area, pick up trash along trails, and monitor for fallen tree limbs, obscured or missing signs, and other problems that need attention.
- Renew stocks of maps and brochures at academic and Natural Area Park [NAP] kiosks.
- Remove fallen tree limbs from NAP and other open sites.
- Remove obviously abandoned academic items (traps, flag stakes, etc.).

- Walk the four nature trails, pick up trash, and monitor for problems that need attention. (Take along hand clippers for trimming vegetation where needed.)
- Check stocks of trail guides at the three upland nature trails. (Graduate TA will supply new trail guides as needed.)

Every two weeks

- Walk or drive NATL's utility vehicle along principal trails in restricted (=academic-only) areas, pick up trash along trails, and monitor for trees or broken limbs across trails, and other problems that need attention (including unauthorized projects).

Monthly

- Make sure all picnic tables are present and in good condition (six in pavilion and eight in NAP).
- Sweep pavilion.
- During growing season, spray invasive plants with herbicide (only the person with the license can spray).
- Check Natural Area Park for missing or damaged tree-ID signs.
- Upload and process TrailMaster and rain gauge data.

As needed

- Mow nature trails with Kee mower.
- Add and keep updated the photosigns on the 4 nature trails.
- Remove vegetation that is encroaching on main trails (which, if one-sided, causes vehicles to veer off the roadway).
- Clean lexan windows protecting kiosk displays.
- Remove vegetation that obscures trail signs (herbicide, handpull or trim).
- Use chain saw to assist in removing limbs and trees that have fallen across trails.

Always

- Be courteous and helpful to users of NATL.
- Keep shed and surroundings neat and easy to access.
- Keep shed locked unless in the immediate vicinity.
- Keep all equipment in working order and record maintenance in booklets in shed.

UNDERGRADUATE TEACHING ASSISTANT SUPERVISION

You will also supervise the activities of NATL's Undergraduate Teaching Assistant (UG TA), which will also require regular meetings. It is important to discuss your goals with the UG teaching assistant and to communicate with them on a regular basis in addition to weekly meetings. You may want to set a weekly meeting time with the UG TA. Try to overlap your schedule with the UG TA to ensure that you have time to provide any necessary training, answer questions and collaborate on larger projects.

WEEKLY MEETINGS

As a NATL TA (graduate or undergraduate) you will attend the weekly meeting of the NATL Operations Committee currently comprised of the NATL Chair, the NATL Administrative Assistant, the NATL Vice Chair, and the TAs. This meeting is intended to discuss management plans, NATL log updates, upcoming events, nature trail updates, and Facebook and Twitter updates. You should use the meeting time to update the Operations Committee on what you have been doing that week and what you are planning on doing the following week.

NAAC MEETINGS

As a TA (graduate or undergraduate), you are required to attend the biannual meetings of the Natural Area Advisory Committee (NAAC). Be prepared to brief the group about happenings at NATL and provide a report of what you have accomplished the previous semester. You will be required to send your report to the NATL chair approximately two weeks in advance of the meeting. They will distribute an agenda of topics to be discussed

to all committee members via email one week before the meeting date. You should also be prepared to take minutes for the meeting. All minutes from previous meetings are posted on the website (http://natl.ifas.ufl.edu/management/naac_documents.php#minutes) and can be used as a guide if you are unfamiliar with taking minutes.

NATL SHARED AREA NETWORK DRIVE (Walker folder)

The NATL Shared Area network drive is a place for you to store and share NATL related files. The drive contains important data such as photos, sign masters, guides and sequences, TrailMaster and rain gauge data, the volunteer log, and GIS data. To get access to the network drive, contact Steve Lasley (sel@ufl.edu), the Senior Systems Programmer. Once you have access, the network drive can be found by choosing start and entering `\\ad.ufl.edu\ifas\entnem\private\walker` into the programs and files search box. After receiving access to the drive, you should create a folder with your name to store your work. The computer located in the south side of EYN 2115 is dedicated to NATL TA use. If you need to use a flash drive, one can be found in the desk drawer of the computer desk.

GIS

All NATL GIS (Geographical Information Systems) information is saved in a folder called NATL GIS in the Walker folder. ArcMap, the software used to create and edit GIS files, is not downloaded to the NATL computer so you must access it from the CALS virtual machine. To connect, double click the *VMware View Client* shortcut on the desktop. The connection server should automatically come up as **virtual.ifas.ufl.edu**. If not, enter this address. Choose *connect* and in the next window choose *OK*. Sign in with your GatorLink username and password. In the next window, CALS students should automatically be highlighted. Choose *connect*. Once in the virtual machine, you can find the Walker folder by choosing *start*, Search programs and File, then open: <\\ad.ufl.edu\ifas\entnem\private\walker>

To leave the virtual machine, choose *start* and then *log off*. The master NATL ArcGIS project is called NATL Master Project.mxd and can be used to create various maps of the area. It contains layers depicting the NATL boundary, trail system, gridpoints/lines, trees, buildings, roads, etc. Each individual layer can be turned on/off by checking/unchecking the box next to the layer name, and edited as needed. Maps can be made by scrolling to an area, selecting the desired features and Exporting the map as a JPG. Instructions for doing so can be found in the ArcGIS folder. **No changes should be made to this file without the approval of the Operations Committee.**

WEBPAGES THAT REQUIRE MAINTENANCE

Rain gauge (<http://natl.ifas.ufl.edu/naturetrails/raingauge.php>) **and TrailMaster** (<http://natl.ifas.ufl.edu/naturetrails/trailmaster.php>) **pages:** once a month, after the data is collected.

Rain gauge page:

In the Walker folder there is a folder called Rain Gauge. In it, there are Excel files for both the HOB0 rain gauge and the original milk can rain gauge. The information from the HOB0 data logger and the sheets inside of the milk can must be recorded in these Excel files every month. Typically, these data are collected on the first of the month along with the TrailMaster data. The raw data files must be replaced each month in the “docs” folder of NATL_Local. Once in Excel format, the data can be used to update the figures that are on the webpages. For the Rain Gauge page, simply do the following:

1. Open the HOBO_Rain_Gauge_Summary.xls file in the Rain Gauge folder.
2. To the right of the raw information, there is a chart showing rain (in inches and centimeters) per day for a month. A new monthly chart should be made with the addition of each month's data. To do this, use the previous month's chart as a template by copying it and pasting it below the existing chart. Be sure to change the title to the appropriate month.
3. To make the chart reflect the data for the appropriate month, right click *Select Data* and change the *in* and *cm* series to the numbers for the current month. This can most easily be done by dragging the boxes that highlight the data reflected in the chart to the appropriate month's data. As long as nothing else is changed, this should remain an accurate way to generate more charts.
4. Make the chart into a new JPG. This can be done by copying and pasting the chart from Excel into Photoshop. To do this, open Photoshop, right click on the chart in Excel and select *Copy*, in Photoshop select *File>New*, then right click *Paste* and the chart will appear. **This must be done in this order – once the chart is copied to the clipboard, Photoshop will provide a new blank document of the exact size.** Save that chart as a jpg with the name “HOBO_(month)(year)”.
5. Now that the new chart for the month is made, put it in the “i” folder in NATL Local and open the rain gauge webpage (./naturetrails/raingauge.php) in DreamWeaver.
6. Display the new chart on the main webpage, and alter the Figure 1 legend to reflect the new data from the Excel file. Add last month's chart to the list below the most current chart.
7. Check to make sure all the links work!

TrailMaster page:

This webpage can be changed in the same way the rain gauge page can be changed. The new raw data files must be replaced in the “docs” folder every month. To update the chart, using the previous month's charts and plugging in the new data should work so long as nothing else is changed. Some of the information of this page does not need to be updated monthly because it shows TM data over time, and that will not change. Simply updating the JPG of the chart (TM_chart02.jpg) will suffice for updating the page – there is no need to use DreamWeaver.

Principal Improvements: as needed, at least a few times a year something should be added. See the log for ideas of things to add. On the Principal Improvements pages (photogallery/improvements.php) the Facebook and Twitter accounts are listed as improvements. These descriptions have a count of how many Likes and Followers NATL has for each account, respectively. This should be updated every couple of months or so, or after a surge in numbers.

Upland Pine and Old Field pages: after each major change to the ecosystem, i.e. restarting an Old Field plot. See log for dates and other information. The pages are named uplandpine_management.php and old-field_management.php.

NATL log: post weekly

NATL LOG

All major NATL events should be entered into an Excel spreadsheet called the NATL log. Items that need to be added are usually discussed at the weekly Operations Committee meetings. Specific shorthand codes and topics are noted at the top of this Excel file, which can be found in the NATL Local folder. It is also available to the public, along with logs from years past, at <http://natl.ifas.ufl.edu/management/actions.php>.

TRAILMASTERS AND HOBO RAIN GAUGE

Three TrailMaster units are installed at NATL's Academic, Cultural Plaza and Natural Area Park entrances. These units measure NATL usage by counting the number of people passing through each of the three entrances. The Cultural Plaza (CP) entrance has had a TrailMaster installed since July 2010, however initial technical difficulties yielded unreliable data in the first few months. Subsequently, two additional units were installed at the Academic entrance (AE) (June 2011) and Natural Area Park entrance (NAP) (April 2012). The unit located at the Cultural Plaza entrance had difficulties during the summer of 2013 possibly due to an ant infestation and was replaced in May 2014.

In March 2013, Dr. Mark Clark donated a data-logging rain gauge, which records rain with a tipping bucket rainfall collector. This new gauge gives digital readings of water level and can be found on the East Trail near the SEEP, beside the original milk can rain gauge.

At the beginning of each month, data from the three TrailMaster (TM) units and Hobo Rain Gauge should be downloaded with the NATL laptop using the following instructions (also found in the laptop bag). All TM rechargeable batteries should also be replaced at this time. A battery charger is located on the computer desk. **Start recharging the batteries at the beginning of the month so that you have enough time to charge them all.** If you find that the batteries are not holding a charge for the full month, try recharging the batteries and then use the battery life checker to see if it is still in the "good" zone. The checker should be located in the drawer where the laptop is stored (bottom left). The battery life of the rain gauge battery will be displayed when uploading the data. Batteries should be replaced when 2-3% remains. New batteries for the rain gauge can be found in the drawer used to hold the laptop (ECR2032 3V Lithium).

To upload TM data to the laptop:

1. Make sure laptop battery is sufficiently charged before going outside.
2. Take the bag with the laptop, TM accessories, and recharged batteries to the site where the TM is installed.
3. At the site, use the keys on the download cable to unlock the box containing the receiving unit (monitor).
4. Open the box and verify that the monitor is working properly by observing the initial count and then walking into and out of NATL (to break the infrared (IR) beam that activates the unit). If screen reads [*Lo b*], or there is a blank screen, batteries are low/dead.
5. Before opening the laptop, plug the download cable into the serial port on the back of the laptop, and plug the miniphone plug (black) into the data port of the TM unit (labeled PTR).
6. Open the StatPack program located on the desktop.
7. In StatPack, click *File > Import New*
8. Press the *SetUp* button on the monitor until you see [*S. up*] and continue pressing it until you see [*Sn d?*] displayed on the monitor screen *see below
9. Press the *R/O ADV* button on the monitor and you should see [*Sn d!*] (after the data has downloaded, the display will change to [*thru*]/ on laptop will say *Receiving Data > waiting*).
10. In StatPack, press *Process Data*. In the save file as window, indicate the date of upload and TM location

before the period (ex: tm050506June3AE.00a). Choose *OK*.

11. In StatPack, go to *File* -> *Open* -> select the file you just created and click *Open*. Then go to *File* -> *Export* -> "*filename*".*csv* -> *OK*. Unplug download cable from monitor and laptop.

12. To clear the data on the device, push *Set Up* twice until you see *5.UP*, then press *R/O ADV*. Device should display *CLR*. Press *Set Up* again to clear device.

13. Replace batteries in both sides of the unit using the screwdriver in the laptop bag. When batteries are removed, the time and date are reset. **Be careful when setting the time because the TM units run on military time.** Leave the back of unit unscrewed until you have successfully set the time and date (if you mess up you can remove a battery and start over).

14. To set the time and date, press *R/O ADV* to change the numbers (NEVER PRESS *SET UP*). The *time set* button changes the next setting (ex: time, year, date).

*-If you ever get [*c l r*] on the monitor, be very cautious and press *R/O ADV* button until you see [*S. up*] then continue from step 8.

To upload rain gauge data to the laptop:

1. Set laptop on milk can rain gauge (make sure it is not wet!).

2. Remove lid from HOBO rain gauge and pull out the cord.

3. A black cord to connect the rain gauge to the computer can be found in the laptop case. Plug the USB end of the cord into the laptop.

4. Plug the cord coming from the rain gauge into the "pendant coupler" end of the cord coming from the computer.

5. Open Hoboware on the laptop and click *No* when asked to check for updates.

6. Look to the bottom of the window to make sure "SHOBOUA-003-64 Pendant..." is displayed. This means the rain gauge has successfully been detected.

7. Choose *Device* on the top menu bar and then choose *Read Out*. In the next window the device should automatically be chosen (if it is connected correctly). Click *OK*.

8. When asked to stop logging, choose *Stop*.

9. In the save window, name the file the days logged since last upload. For example, May 2nd through June 1st would be named 5.2-6.1.

10. In the plot set up window, choose *plot*.

11. Next, choose *File* and then *Export Data Table*. In the export data window, uncheck everything except event and then choose *Export*. You should name the file the same name as when you saved the project in the previous step (ex: 5.2-6.1). Click *Save*. The csv table should automatically be saved to the Rain Gauge Data folder on the desktop.

12. After the data has been saved, the rain gauge needs to be “launched” in order to start logging again. Choose *Device* and then *Launch*.

13. Choose *Device* and name the launch the current data. This way you can easily remember what date you started logging the next time you upload the data.

14. Choose *Launch* and look to the bottom of the window to see if “*Launch Successful*” is displayed. If successful, you can unplug the cords.

15. The cord connected to the Rain Gauge should be carefully wound up and placed around the holder. Make sure the cord is not interfering with the movement of the tipping bucket!

This is a useful document showing the model number and contact information for this specific rain gauge:

http://www.inmtn.com/docs/onset/HOBO_Rain.pdf

To process the TrailMaster data on the NATL lab computer:

1. Plug “Cruzer” thumb drive into the laptop and open the HOBO and TrailMaster Folders.

2. Drag the one .csv file from the HOBO folder and the three .csv (NAP, AE, CP) files from the TrailMaster folders into the thumb drive folder (Cruzer). Safely remove thumb drive and plug into desktop computer.

3. Open the aaTrailMaster folder within the shared Walker Folder.

4. Begin by opening the AE TM Monthly Summary.

5. Next, open the AE .csv file in the Cruzer folder.

6. In the AE .csv file from the Cruzer folder, highlight and copy data below the heading line (3 columns) to the last day of the month.

7. In the Monthly Summary file, choose the tab corresponding to the month of interest and paste data below the last month's partial entry.

8. Right click on the Month tabs at the bottom and choose *Insert, Worksheet*, and then name it the next month.

9. From the AE.csv file in the Cruzer folder, highlight, copy and paste the remaining data into the new worksheet.

10. For the full month's data recently entered, scroll to the bottom of the rows to see how many rows there are. Do not use the value in column A for a total count!

11. In the summary tab, add the newest month to the bottom of the list and enter the total counts from the previous step.

12. The “number of full days” column refers to the number of days the TM actually recorded, while the “days in month” column refers to the total number of days in the month. Number of full days could be less than the days in the month if there was a problem that caused the TM to stop logging for some days. The other columns should automatically fill in.

13. Write down the estimated count for the month (last column) on a piece of paper. You will need to put in the

number of visitors (counts/2) into the General TM Monthly Summary Excel file and report the number at the OpComm Meeting.

14. Repeat steps 1 through 13 for CP and NAP.

15. Open the General TM Monthly Summary Excel file (only work with the general info tab!).

16. At the bottom of the list of records, input the estimated counts/2 in the appropriate columns.

17. Highlight bottom row of the yellow block and pull down one row to autofill the values for the new month.

To process the rain gauge data on the NATL lab computer:

1. Open the Rain Gauge folder within the Walker folder.

2. Open the HOBO folder.

3. From the Cruzer folder, copy the .csv file associate with the previous month into the raw data folder.

4. Open the file from raw data folder.

5. In the first cell under the Event, unit column enter 0.01 (the amount of water recorded each time it tips). Drag cell to the last row of data.

6. For each day, calculate the sum of the number of tips (events) by using the =sum() function.

7. Save this edited file as the dates recorded (ex: 8.2-9.3) followed by "totals". Save this file in the "Readouts with daily totals" folder.

8. Delete any data you think you may have caused by putting the cord back into the rain gauge.

9. In the HOBO folder, open the HOBO Rain Gauge Summary file (do not edit summary tab).

10. At the bottom of the list of data, create headings like the months preceding (Month, Rain (in), Rain (cm)) and type in days of the month. In the row after the last day of the month, create "Total" and "Average/day" columns.

11. Enter the totals from the Totals file into the Summary file. *These are recorded in inches so they should go in the inches column.

12. To calculate amount of rain in cm, drag down the rain (cm) column from previous month (these contain a conversion formula). Rewrite data in rows where the formula did not work

13. Calculate Total and Average/day using Excel formulas.

14. With the data that overflows into the next month, create a new list for the next month.

SEMI-ANNUAL PHOTOS

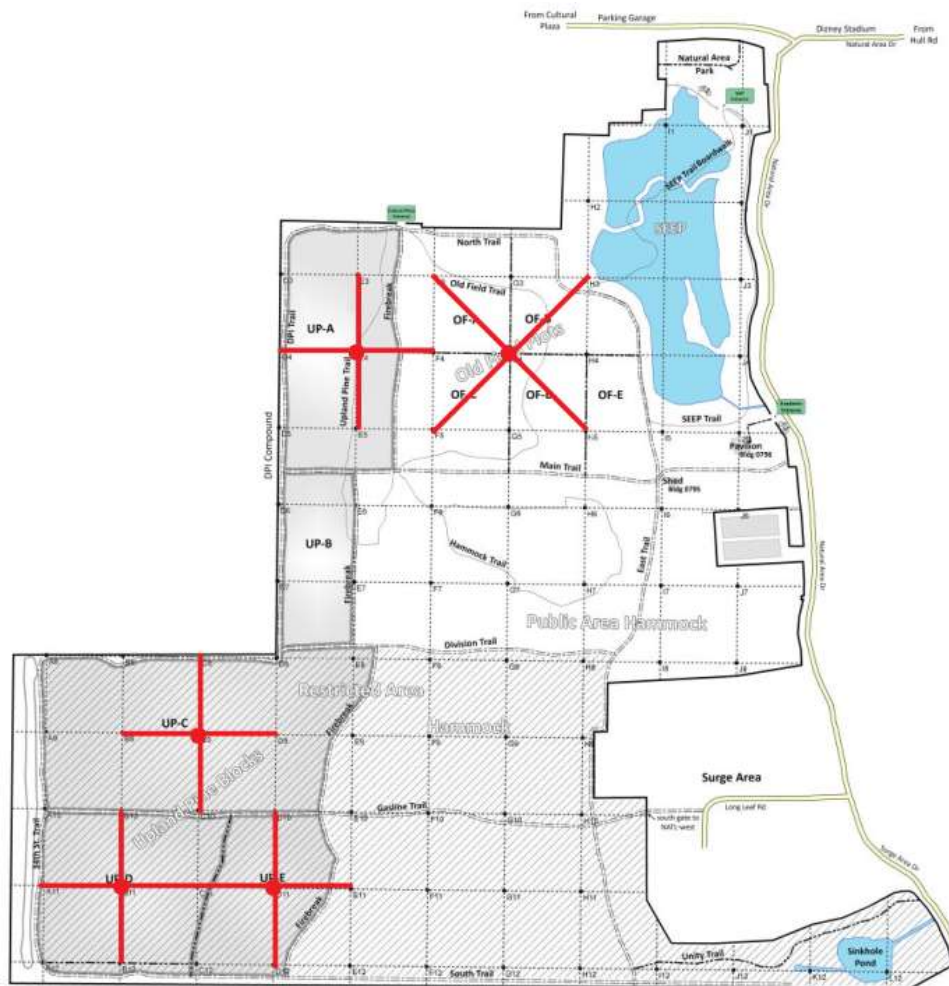
Twice annually, preferably in January and July, photos are taken in the Old-field succession plots and Upland Pine restoration areas. Photos should be taken with the Canon EOS 20D camera, which should be mounted on the SLIK Universal U-210 tripod. The lens opening should be kept at *f/16* by using the aperture-priority, automatic-exposure mode. Image quality should be set at *Large Fine*, which records an 8.2 million pixel image

in a low-compression JPEG file. The ISO light-sensitivity value should be set at *100 or 200* depending on the amount of light. The camera mounted on the tripod should be placed as close to the gridpoint (indicated below) as possible. Adjust the camera height so that the viewfinder eyepiece is about 5 ft. above the ground. You should focus the camera at the top of the adjacent gridpoint flag pole in the direction you taking the photo.

Old-field Plots: Gridpoint G4 is at the corner of each Old-field plot. Photos are taken with the camera directed toward gridpoint F3 for Plot A, H3 for Plot B, F5 for Plot C, and H5 for Plot E (**NOT north, south, east, and west**). See map below.

Upland Pine Areas: Photos are taken in each of the four cardinal directions (north, south, east, and west) at gridpoints E4, C9, B11, and D11. The camera should be focused at the top of the adjacent gridpoint flag pole. For example, at gridpoint E4 you would focus on E3 (north), D4 (west), E5 (south), and F4 (east). See map below.

Uploading Images: The card reader is located in the green camera bag. No folder exists in the Walker folder for these images. A temporary folder is created in one of the TAs folders and then the images moved onto the live website by the TA.



PHOTOSIGNS and Other Trail Signs

The purpose of the photosigns is to make the four NATL nature trails more informative and aesthetically appealing to visitors. Photosigns should reflect current conditions on each of the nature trails. Three major duties of the NATL TAs include:

1) Placement of 5x4 in. photosigns on each of the NATL nature trails that reflect plants currently in bloom or of interest, and animals found in NATL.

2) Creation of new 5x4 in. photosigns and maintenance of the 5x4 photosign collection, both real and electronic.

3) Maintaining the 11x7 in. photosigns and wayfinding signs, as well as cleaning all signs in the Natural Area, including the 3ft. x 2ft. signs and the kiosks. Be vigilant when it comes time to doing the sequences and reading the text on signs. Some 11x8 in. text signs need to be reprinted or modified when they fade, or talk about a living tree that has died. The way finding signs around the Old-Field ecosystem must also be reprinted time to time depending on their text. For example- the sign may say “last tilled December 2013”, but if the plot was actually restarted since then (maybe December 2014) then the sign should be replaced!

Organization of 5x4 in. Photosigns

A master file including indexing tags (see list below) of all currently available 5x4 in. photosigns is accessible through the NATL Graduate TA folder:

\\Graduate TA\Photosigns\5x4 Photosigns\5x4_photosigns_master.pptx

A search is easily performed within the document using the *CTRL+F* function*. This allows the TA to search for flowers/plants based upon some simple criteria, such as flower color, trail, or season, using a set of established tags contained in the ‘notes’ section under each slide. For example, if an unknown white flower is identified on a nature trail, a search of ‘WHT’ will yield all white flowers for which a photosign exists. Similarly, a modified search of the PPT file may yield better results if the plant has no flower, has a seed pod of interest (SED), or is present in winter (WIN), etc. If, after a thorough search of the .PPTX master file, a plant is found to have no suitable photosign, the plant should be authoritatively identified and the master file searched by the scientific name. This is made easy by the slides in the master file being arranged alphabetically by scientific name. If a new photosign is needed, it may be created following the instructions in the next section.

**Note* All photosign tags in the photosign master file are in CAPITAL letters. To search for tags using the *CTRL+F* function, ensure that the box *Match case* is selected. Search for tags using all capital letters. Various tags are listed below.

Photosign tags

Flower color

BLU blue
PRL purple/violet
ORG orange
YLW yellow
WHT white
RED red
PNK pink

Growth form (other than forb, the default)

GRS grass, sedge, or rush
TRE tree
VIN vine
FRN fern
SHB shrub

Trails:

UP upland pine
OF old field
HM hammock

Season (that photosign depicts):

SPR spring (=Mar, Apr, May)
SUM summer (=Jun, Jul, Aug)
FAL fall (=Sep, Oct, Nov)

SP seep

WIN winter (=Dec, Jan, Feb)

Stage, habit, etc.

AQU aquatic/wetland plant

FOL foliage FLW flower

SED seed

FRT fruit/berry

Creation of new 5x4” Photosigns

A supply of 5x4’ template slides can be found in:

Walker> aaNATLsignMasters> 5x4photoSigns> 5x4 Templates > Template for 5x4ps.ppt

As templates are used they should be replenished by using the ‘duplicate slide’ command (right click on *slide thumbnail* > *duplicate slide*) to ensure future availability of templates. To create a **new 5x4” photosign**:

- 1) Fill in Common Name (1st listed common name on NATL’s Vascular Plants webpage: <http://natl.ifas.ufl.edu/plants.htm>), Description, Family, and Scientific name (also following NATL Vascular Plants webpage) information following the format instructions located on the template slide.
- 2) Ideally images should be 600 x 876 pixels and can be resized using Photoshop or another photo-editing software. Insert photo into file, and delete template photo and text box.
- 3) Enter tags (see list above) in the ‘Notes’ section below the slide, including flower color, size, blooming season or season otherwise present or of interest, seed pod, etc.

The first line of the notes section should include tags that describe the plant growth form. Next add tags that describe the trails on which the plant may be found. Finally, list the seasons in which the plant may be found (make sure this matches with what the photosign portrays, e.g. WIN if the photosign depicts the winter seeds of Canada Goldenrod, etc.). An example follows: YLW FLW

Trails: OF Seasons: FAL

[space]

--other notes—

This indicates that this photosign includes information about a plant with 1) yellow flower(s) (YLW FLW), located on the Old Field trail (OF), and is conspicuous in fall (FAL).

5x4 in. Photosign photos

All photos for 5x4 in. photosigns are stored in a folder under the following directory:

\Graduate TA\Photosigns\5x4 Photosigns\Photos

Photos should be cropped to 2.0 in. wide x 2.92 in. tall (600x876 pixels, 300 dpi). Each file should be named as follows:

AABBB, where AA is the first two letters of the genus name and BBB is the three first letters of the species name. For example: a photo of Canada Goldenrod, *Solidago canadensis*, should have the following name:

SOCAN.jpg

In addition, suffixes (indexing tags) may be added, to indicate winter form, fruit, seed, etc. For example:

SOCANwin.jpg, indicating *Solidago canadensis*, winter form. Lower case letters for suffixes make parsing easier.

Printing temporary photosigns

When one or more photosigns are needed that cannot await the printing of a batch of 35 permanent signs by Color Reflections. The following protocol should be followed:

(5x4_photosigns_master.pptx) to be printed, or create a new one following the instructions detailed above.

1. Copy slides from the master file to the template file for printing (4_5x4_photosigns_Target_Copy_template.pptx), located in the following directory: \Graduate TA\Photosigns\5x4 Photosigns\Templates and Instructions
2. The file should then be converted into PDF format, and stored both on a flash drive and in the following directory: \Graduate TA\Photosigns\5x4 Photosigns\Photosigns for Target Copy
3. 5x4 in. photosigns should then be presented to the NATL Operations Committee at their weekly meeting for comments, suggestions, and tentative approval. The NATL Graduate TA will agree to make the suggestion corrections/improvements and then print the photosigns at Target Copy in Gainesville. Resubmission to the Operations Committee is not necessary, and this is designed to get temporary signs in the field as quickly as possible when needed.
4. Take the 5x4 in. photosign PDF files, along with DURA Copy waterproof plastic paper (located in Entomology 2115) for printing to: Target Copy:
1412 W University Ave. Gainesville, FL 32603
5. Individual 5x4 in. photosigns are then cut and glued onto plastic backings using 3M Super 77® spray adhesive (stored in the NATL shed or in Entomology 2115) before placement in metal 5x4 photosign holders located in the shed or the sound lab (Entomology 2136). Special keys for adjusting the holders to receive the signs are kept with the signs.

Temporary photosigns that do not require color printing can be printed on a regular printer, on waterproof paper. This is an especially useful method for the 8.5 x 11 nature trail signs, which have had the colored text changed to black for this purpose. The printer in the NATL lab cannot print these signs. This printer may be used for other purposes (printing maps, Top 50 booklets, etc.). The vice chair or any other NATL OpComm member with a Purchase card must supply the ink cartridges. Paper can be found in the Taxonomy room.

Printing permanent photosigns

A stock of permanent 5x4 in. photosigns should be maintained and updated occasionally. New photosigns may be printed when new ones are created, or when old ones are modified, are lost, or fade. Permanent signs are printed by Color Reflections of Orlando, or another printing company agreed upon by the NATL Operations Committee after they have been approved at the weekly meeting.

5x4 in. photosigns are printed in batches of 35. 11x7 in. and 12x6 in. (way finding) signs are printed in batches of 10. The matrices that hold each of these batches are already configured to the correct size, just copy the new signs into the desired matrix one at a time. Each sign will be sent to be printed with dimensions slightly smaller than the desired size (see table below). To achieve the desired dimensions, in PowerPoint open the slideshow and then go to Design tab, followed by the Page Setup link. The reason for this is that if our sign holder is 5x4 in. and we order a 5x4 in. sign, it would not fit inside the holder because they are the same size. When designing a new 3x2 ft sign it is necessary to keep a blank half inch space all the way around the sign, which will be taken up by the framed boarder when holding the sign in place. The size conversion for printing new permanent signs

is as follows:

Sign Size	Dimensions sent to be printed
5 x 4 in.	4.88 x 3.88 in.
11 x 7 in.	10.88 x 5.88 in.
12 x 6 in.	11.88 x 5.88 in.
3x 2ft.	35.88 x 23.88 in.

1. Select 35 5x4 in. photosigns to be printed.
2. 35 photosign slides are copied into the following file within the Walker folder: aaNATLsignMasters
3. The file containing the proposed 35 new 5x4 in. photosigns should be saved as follows:

35_5x4_photosigns_CR_slides_[MONTH AND YEAR].

For example:

35_5x4_photosigns_CR_slides_7_2010.

4. At this point, the NATL Operations Committee will revise the 35 proposed photosigns and offer comments/corrections.
5. After receiving comments/corrections from all NATL Operations Committee members, the NATL TA will have one week to make changes based on the recommendations of the committee and resubmit the updated file to the committee.
6. After final inspection by all committee members, and if the committee has no reservations, the file matrix for the signs should be converted into a PDF and sent to Color Reflections. As of August 2014, the contact person should be either Jennifer Benson (jennifer@color-orlando.com) or Tim Hoover (tim@color-orlando.com). You should always remind Color Reflections that 5x4 in. and 11x7 in. signs are to be printed aluminum (Icut-square edges). The 4x6 in., 3ft. x 2ft., and way finding signs are to be 1/8 dibond (rounded edges).
7. Once the new permanent, 5x4 in. photosigns have been printed, add the entire PowerPoint to the 5x4 in. Master File. Next, make sure the following is listed in the 'Notes' field:
'Permanent sign printed by Color Reflections [MONTH AND YEAR]. For example:
Permanent sign printed by Color Reflections 7/2010
8. Each time a batch of permanent 5x4 in. photosigns is created, each species for which a new sign is made should have an updated PDF version posted to the NATL Vascular Plants webpage (<http://natl.ifas.ufl.edu/plants.php>). For animal signs, the appropriate Biota page should be updated.

Note: when creating a new 3 x 2 ft. sign ensure that a border is present of at least 1/2 inch (ideally 3/4-1 inch), around the sign. If there is no border then part of the sign may be obscured when the sign is fixed to the stand.

Installing new 3x2ft signs

There are two jigs located in the rafters of the NATL shed. These will help provide the desired spacing of boards when installing the frame for the sign, and hold them in place while you are working.

STOCKING KIOSKS & OTHER LOCATIONS

The kiosk at the academic entrance (near the pavilion) should always be stocked with grid maps, NATL brochures, invasive species brochures and Top 50 booklets. The kiosks at the cultural plaza and NAP entrances should always be stocked with brochures. Packages of self-guided tour guides (color map cards) should be brought to the Florida Museum of Natural History as needed. When you start to run low on self-guided tour guides and/or brochures, make sure to remind the person in charge of the UF Purchase Card to order more. For the NATL map cards, contact someone in the Graphic Design office (currently Jane Medley jmedley@ufl.edu) to place an order. Master copies of the gridmap and Top 50 booklet can be found in the desk drawer.

TRAIL MAINTENANCE

One of the first things you should do as a NATL TA is walk all of the trails and familiarize yourself with the different ecosystems. For nature trails, bring along current copies of all trail guides and note any discrepancies between what is written and what is visible. You will soon take over the duty of updating the guides and so should begin to develop an eye for changes in vegetation/potential new stations. Trails should be monitored weekly for felled trees and limbs, trash and inappropriate uses (e.g., vandalism). Trash is often greatest along the South trail, particularly in the SW section. All “main” trails (the ones large enough to accommodate a large tractor) are supposed to be mowed by PPD (Physical Plant Department) every two weeks during the growing season and as needed in the winter. It is your responsibility to contact PPD if mowing does not occur at the appropriate times. As of August 2014 the contact person at PPD is Russell Seay (rseay@ufl.edu) if you have any mowing problems or requests, a map of NATL outlining the areas they mow is found by opening the Walker folder and then within the PPD and Volunteer Maps folder- the map should be sent when contacting them to mow. We typically ask them to mow the restricted area when needed, but have them mow the public area every two weeks. When it is time to restart one of the Old-Field plots, email Russell about sending a tractor to help out. They mow the vegetation down and then disc the field twice, once from each direction. If it is an older plot that has not been restarted in several years, he needs made aware that we will need heavy equipment to cut down and remove the trees that have grown since the last restart. When contacting PPD about restarting a plot, send the appropriate map found in the PPD and Volunteer Maps folder with the desired plot area shaded so they are aware of where to go, and make sure that you meet them there the morning of the restart so there is no confusion as to what they must do.

The push mower should be used to mow the Old-field, Upland Pine, hammock, and SEEP trails every week during the growing seasons and as needed in the winter. The weed eater should be used to trim around signs and kiosks with the same frequency as mowing (shears could also be used). Loppers and shears should be used to trim all trails as needed. In the past these jobs have been delegated to the undergraduate TA.

If a work order is required, file it through the PPD Work Management Center by calling (352) 392-1121.

VOLUNTEER EVENTS

There are several groups on campus that are eager to volunteer at NATL. You can find a list of these groups in the **Contacts** section below along with contacts for borrowing tools and equipment for these events. Planning a volunteer event is a good way to spread the word about NATL and to get help with big undertakings such as trash clean-up and invasive plant management (e.g., pulling *Ardisia*). These groups are typically available to work on weekends; make sure that you indicate your availability on Saturdays and Sundays to save time when planning. Below are things to consider from Kevin Ratkus (former NATL TA) when planning and conducting volunteer events.

- Frequently fewer volunteers will show up than promised from the service coordinators.
- Make sure you stress that the volunteers will not have a good time if they are inappropriately dressed. Frequently projects require closed toed shoes & long pants.
- Take lots of photos to post to social media sites and the NATL website.
- Enlist friends or students familiar with NATL to help supervise your groups (~10 people / supervisor). Do not rely on the supervision by the service group providers.
- Provide water if the service coordinators do not commit to providing it. Frequently they say they will, but forget. We now have a 5 gallon cooler stored in the shed for use on volunteer days.
- You can try to coordinate large projects with large event days where several volunteer groups come out on the same day at different times. Two hours of work is the max of good work from each group.
- Run the events “rain or shine” - it is inconvenient to re-schedule in the event of rain. Plan indoor activities like folding Top 50 minibooklets or reviewing the NATL website. This would also be a good opportunity to use the group of volunteers as a “focus group” and ask them questions about what they like about NATL and what they would like to see us implement in the future.
- As long as you start working before it actually starts to rain, you can normally get things done. If there is a storm and thunder has been heard or lightning has been seen then the outdoor activities should be stopped and the volunteers moved to a safe location.
- Consider the personalities and interests of the group or individuals when assigning tasks and choosing projects. Consider mixing up the work, so people get a variety of activities at different times if desired.

INVASIVE PLANT MANAGEMENT

Management of exotic plants is a major part of the management and restoration plan at NATL.

As the NATL TA, controlling (or coordinating others to control) these species will be one of your most important tasks. A master list of vascular plants in NATL can be found at <http://natl.ifas.ufl.edu/biota/plants.php>. Non-native species are marked with an asterisk. This page provides links to images and detailed information on where in NATL these species occur. We do not attempt control of most non-native species because although they are found in NATL, they are not a major threat to any of the ecosystems. There are 21 invasive plant species that we manage in NATL, they can be found at http://natl.ifas.ufl.edu/ecosystems/invasive_Ctrl.php. A list of NATL’s most problematic invasive species that you should ALWAYS be focusing on eradicating from the natural area can be found at <http://natl.ifas.ufl.edu/ecosystems/invasives.php>. Some past problematic species for the hammock have been Japanese climbing fern, air potato, coral ardisia, and skunk vine. For the Upland Pine and Old-field problematic species have been cogon grass, guinea grass, johnson grass, and mimosa.

Manual Control

- Many of the invasive shrubs and grasses can be hand pulled (ardisia, guinea grass, johnson grass), Cat’s claw vine and air potato produce tubers underground and can easily be dug up if you trace the vine down to the ground. Almost every invasive tree (mimosa, camphortee, paper mulberry) can be hand-pulled when it is 3 ft. or shorter in height, however some species can be pulled easily up to about 6 ft. high.

Chemical Control

- In order to apply herbicides in NATL you **MUST** possess a pesticide applicator license and be certified to spray in natural areas. **NOTE: Although part of NATL, SEEP is a wetland and a separate license and aquatic labeled herbicides are required before you can spray there. DO NOT SPRAY THERE unless you have met these requirements.** If you do not have one, you cannot spray anything in NATL. As of August 2014, Ethan Carter is the NATL applicator and anything needing sprayed should be brought to his attention. **If NATL does not have a TA possessing a license, it should be brought to the Chair of the Operations Committee’s attention to see if NATL will pay for one of the TAs to get the license.** Two manuals (the core and natural areas) can be purchased at the IFAS bookstore to study for the

exam. The two exams (the core and natural areas) can be taken on campus in a building just down from the IFAS Bookstore (pass the road where the bookstore is and take the next left, the test is administered in the building by the road). Taking the exams is free, but if you pass them both then you must go online and pay for your license. It costs about \$250.

For information on how to remove these invasives (e.g., pull, spray, cut/spray) and for questions on past efforts (e.g., cogon grass experiment) inquire with past NATL TAs or with **Tom Walker**.

According to Ken Glover (EH&S), as long as a pesticide is for general use (i.e., it is sold for homeowners to use), not restricted use (i.e. the applicator must have a license), we are fine to use it in NATL. However, it's very important that you follow all directions on the label and ensure that you have the correct pesticide applicator license. Be particularly careful about handling concentrated solutions of herbicide and do not spray into the wind or in another manner that would cause you to be unduly exposed to the spray.

PRESCRIBED BURNS AND BRUSH REMOVAL

A crucial part of management of longleaf pine restoration is prescribed fire. Prescribed burns are conducted in the Upland Pine area of NATL. As NATL TA you should help with organizing these burns and with the burns themselves when possible. Several people must be contacted prior to a prescribed burn. Tom or the NATL chair may ask you to help contact them.

Notifications prior to the day of the burn (by Burn Master)

Two facilities adjacent to portions of NATL's upland pine may be significantly impacted by smoke being drawn into their ventilating systems. These should be contacted by the burn master as early as feasible prior to making final plans for a controlled burn. The Phillips Center wants 48 h but that may be related to the possibility of a burn being planned for a Sunday. DPI appears to be OK with knowing the day before the burn, and minor smoke briefly reaching their buildings could be a significant inconvenience but not a major disaster.

UF's Phillips Center for the Performing Arts (at northeast corner of UP Block A)

Matt Cox, Operations Manager, UF Performing Arts Center, 273-2474 (office) or 256-7999 (mobile) and mcox@performingarts.ufl.edu, will help NATL's burn master avoid planning for controlled burns on days when smoke reaching the Phillips Center would be unacceptable.

When the NATL Operations Committee selects Upland Pine Blocks to be burned and sets a target range of dates for the burn, the NATL controlled burn coordinator will email this information to Matt, and Matt will reply with a list of safe dates for burns in NATL during the target period.

[For example, late in February, when Matt Cox was told that the next controlled burn in NATL would target Blocks A and B and occur as soon as all conditions were favorable during March through April 2014, he replied within 30 minutes with a list of dates that burns could occur without the possibility that scheduled uses of the Phillips Center would be impacted.]

With his safe list, Matt Cox indicates that he wishes to be notified by email.

DPI insect rearing facility (directly north of UP Block C and west of UP Block B)

These two DPI staff members expect to be notified by phone.

George Schneider: 395-4646 (George.Schneider@FreshfromFlorida.com).

[If Schneider is not available, contact Michael Banaszek 395-4637 (Michael.Banaszek@FreshfromFlorida.com)].

Eric Rohrig: 395-4744 (Eric.Rohrig@FreshfromFlorida.com).

E-mail notifications the morning of the burn (by NATL burn coordinator)

The occurrence of a smoke-producing fire on the UF campus is of general interest and concern; thus it is important that those likely to be contacted about such fires have accurate information. Because the Alachua

County Communications Center is notified of each prescribed burn at the time a permit is issued, such information is always publicly available by calling 911. However, most of those concerned about the source of campus smoke would more likely call some other potential source of information such as those listed below. There are also near neighbors of campus who should have advanced information about the burn (last two email addresses listed below).

Below are those who will be notified on the morning of the burn as soon as the permit has been issued or when the burn master informs NATL's controlled burn coordinator that the permit will be issued.

Secondary notifications of those that are on the burn master's list (see section above)

Matt Cox: mcox@performingarts.ufl.edu

George Schneider: George.Schneider@FreshfromFlorida.com

Michael Banaszek: Michael.Banaszek@FreshfromFlorida.com

Eric Rohrig: Eric.Rohrig@FreshfromFlorida.com

Primary notifications of these persons:

Donna Bloomfield, PPD Work Management, 35213-8920 (mobile); dbloomf@ufl.edu

Fred Gratto, PPD Grounds (392-1148); fgratto@ufl.edu

Dave Kramer, Fire Safety, EH&S (392-1591); dkramer@ufl.edu

If this bounces, send email to W. Properzio (392-1590): bill@ehs.ufl.edu

Kevin Heinicka, Director, IFAS Facilities Planning & Operations, 392-6488 ext 238): kmhgolf@ufl.edu

Adam Boudreaux, Asst. Director, IFAS FPO (392-6488 ext 235): aboudreaux@ufl.edu

Richard Gaskalla, Director, Division of Plant Industry (395-4528): Richard.Gaskalla@FreshfromFlorida.com

Dianne Behringer and Diane Milner, tour schedulers for FLMNH: dbehringer@flmnh.ufl.edu and dmilner@flmnh.ufl.edu

Regency Oaks Apartments, 378-5766; regencyoaks@gmail.com

Archer Woods Apartments [Saul Silber Properties 338-1000]: archerwoods@saulsilber.com

Note: The Gainesville and University of Florida Campus Police Department would be notified if it could be done by email but they have an alternate information source—viz. the Alachua County Communications Center (911), which is notified as soon as a permit for a prescribed burn in Alachua County is issued. Should an emergency occur in relation to the burn, these are the contact numbers of the two police departments:
Gainesville Police Department Communications 955-1818.
University of Florida Campus Police Dispatch Center 392-1111.

CHAINSAW POLICIES

- Never chainsaw alone.
- Always bring a cell phone.
- Wear appropriate safety gear:
 - ear protection
 - eye protection
 - gloves
 - thick pants (jeans/cords)
- If you become uncomfortable with a task, stop working and seek help from another NATL employee with more experience or put in a request for PPD to finish the job.
- While working, if you see chain saw dust instead of chips, the chain is dull. Stop ASAP and take the chain in to a professional to be sharpened.
- Before using the chainsaw check fuel and bar-and-chain oil levels.
 - Gasoline must be diluted with 2-cycle oil, the mixed solution is supplied by Tom Walker - if you run low on gas or oil let Tom know.
 - Make sure fuel is stored correctly and that any containers you take to the work site are not in danger of spilling.

- In the event of a fuel or oil spill you should stop the spill (turn the container so it is no longer leaking) and seek help from the UF Environmental Health and Safety Spill Response by calling 352-392-1591.
- Chainsaw jobs appropriate for TAs include:
 - Cutting up trees that have fallen across roadways, trails, and gridlines.
 - Felling trees that threaten users of roadways and trails.
 - Cutting up trees that have fallen in areas that are to be bush-hogged, disked, or burned. This includes snags that are partly embedded in the soil.
 - Cutting down small trees that are encroaching on trails or are invasive species.

GENERAL UPKEEP OF INFRASTRUCTURE AND EQUIPMENT

NATL infrastructure and equipment to consider includes the pavilion, boardwalk, corral fence, storage shed (and items within), kiosks, picnic tables, bike rack, TrailMasters, rain gauges, cameras, tagged trees.

General upkeep of infrastructure may include:

- pavilion – check for any damage, sweep regularly
- SEEP boardwalk - should be assessed for compromised boards, e.g. damaged or rotten, compromised boards should be reported to the NATL Operations Committee and the Wetlands Club.
- corral fence – check and repair any damage
- storage shed - keeping the equipment storage areas tidy, equipment in the shed should be kept in working order (instruction manuals are inside the shed), maintenance of equipment should be recorded in the booklets in the shed. Contacts for equipment maintenance are listed below.
- kiosks – making sure kiosks are in good condition and the materials inside are visible and in good condition
- picnic tables - making sure picnic tables have not been moved or removed (6 in academic pavilion and 8 in Natural Area Park). Periodically clean tables, particularly those in pavilion.
- bike rack – check it has not been moved or damaged
- TrailMasters – during monthly data collections check in good working order
- rain gauges – during monthly data collections check in good working order
- cameras – check for damage
- trees with ID tags should be periodically checked for missing or damaged tags.

EVENTS AND PROJECTS

As NATL TA you will be expected help plan, coordinate, and execute projects or events at NATL (e.g., Earth Day event). For Earth Day events, contact the Entomology Club, the Wildlife Society Club, and the Wetlands Club to provide assistance. The Entomology Club and the Wildlife Society Club typically bring live specimens or skulls from animals that are native to NATL, and the Wetlands Club can give tours of SEEP. Another good idea is to collect a few frogs from the PVC pipes along the trail to showcase for visiting children. Also advertise that you will lead tours of the trails. Set up tables (provided by FLMNH) under the shade tree near the sign to the NATL self-guided trails, but advertise in the FLMNH entrance to increase participation.

For some of these events, the FLMNH acquires young, live alligators to show to visitors. Naturally, there are many things to consider when working with these animals – such as temperature, time of year and safety – and these precautions can be explained in detail by those providing the gators. You can borrow baby gators from FWC (at the FWRI lab on Williston Road). A good contact to get in touch with is Kyle Mader (WEC Alum) at Kyle.Mader@MyFWC.com. Another contact is Rosie Pahl Donaldson at qthorse9@gmail.com. She is currently a WEC undergrad and is in charge of the FWRI gator outreach. It is a good idea to email them both initially. (This information was added to the manual 24 October 2013.)

SITE TOURS

Often classes and groups will request a tour or introduction to NATL. Depending on the time allotted for the tour and focus of the group you can decide where to take them. You can coordinate this with the instructor or group leader. A tour guide created by previous TAs can be found in the Walker Folder.

UNAUTHORIZED EXPERIMENTS

Periodically patrol NATL for unauthorized experiments in the restricted area. Classes or individuals conducting experiments should follow [general rules](#) as well as the specific rules for the [restricted area](#). You should remove any abandoned equipment from completed experiments.

ADVERTISE NATL FOR INCREASED EXPOSURE AND USE

To better accomplish the objective to educate students and the public about biodiversity and ecology it is important to spread the word about the resources NATL has to offer. This can be done by:

1. word of mouth to students and professors,
2. presentations. There is a version of a PowerPoint presentation titled "NATLpresentation" in the shared folder on the desktop. Familiarize yourself with this and update it accordingly.
3. collaborations with the Florida Museum of Natural History,
4. distribution of brochures
5. providing tours
6. keeping social media sites, e.g. Facebook and Twitter active and up to date

TA MANUAL

Lastly, as a NATL TA you should update this manual to be comprehensive and up-to-date. This will make the progression between NATL TAs go smoothly.

Equipment:

Equipment in NATL shed

- Stihl brush cutter (practically new: blade needs to be sharpened)
- 4x2 Gator (Works well but may be difficult to start and sometimes shifts out of drive gear)
- 2 Poulan chainsaws
- Water Hoses
- Hand tools (loppers, shears, small sledge, shovels, post hole diggers, planting dibble, machete/file)
- Gloves for volunteer events
- Kee brush cutter mower
- 5 gallon water cooler

Equipment in Entomology pesticide storage building

- 3.5 gallon Solo backpack herbicide sprayer
- Glyphosate (Round-up)
- Triclopyr (Garlon) and stainless steel sprayer
- Imazapyr (Habitat or Arsenal)

Tool borrowing for events

Contact: Donna Bloomfield

Title: Landscaping/Groundskeeping Superintendent

Department: UF Physical Plant

WebSite: <http://www.ppd.ufl.edu/grounds.htm>

Office: 294-0813

E-mail: dbloomf@ufl.edu

Notes: In the past Marty Werts voluntarily provides tools and landscape plants for NATL's volunteer work events. Must pick up tools after PPD is done working with them on Friday afternoon (~4pm) & return them Monday morning (~7:30am). Shovels, Rakes, Wheel barrels, Large buckets (nursery), help on construction projects, landscape rocks, landscape plants, trash dumpster, small amount of fill dirt. Donna Bloomfield (as Marty's replacement) has indicated that she is happy to continue this service to NATL.

Also, Dr. Walker has provided some of his personal tools for volunteer events.