

## **SOP 1: Field Season Preparation**

**Version 1.36 (August 2020)**

### **Overview**

This SOP describes preparations for the field season including fieldwork planning, annual field crew training, safety concerns, and equipment needs. CUPN's forest monitoring field season begins each year at Chickamauga and Chattanooga National Military Park over the course of the last few days in April and the first few days in May. This week typically serves as a time of training for core field season personnel. As such, updates to SOPs and other field season preparations should be completed before this time.

### **Staffing**

The vegetation monitoring protocol will be implemented by one or two teams (typically one field crew leader and one or two crew members per team, although teams can include up to four people) covering a total of 14 weeks during April-September each year. At least two team members must possess good identification skills for woody plants and have experience in forest sampling methods. At least one team member must be able to identify herbaceous and graminoid plants of the southeastern United States. Other desirable expertise includes knowledge of exotic plants, forest pests, ozone injury, pathogens, and soils. Implementation of the protocol will also require use of cameras, GPS units, compasses, and other field tools (see equipment list).

It is the Network Program Manager's responsibility to ensure qualified field staff are assigned/hired prior to April of each year. Student Conservation Association interns (SCAs), university interns, and other cooperators will assist through various cooperative agreements available to the CUPN.

### **Communication & Coordination with Parks**

A current NPS research permit is required for each park scheduled for vegetation monitoring. The permits should be completed in January of each year (if possible, permits should be requested for 2 years to cut down on the amount of paperwork from year to year). Some parks allow multi-year permits to cover long-term monitoring projects, while others require annual renewal. The status of vegetation monitoring research permits and applications for new permits is available at the NPS Research Permit and Reporting System website (<https://irma.nps.gov/RPRS>). The network program manager will ensure that each park has the current Vegetation Monitoring Protocol and a map of sampling locations so that any compliance issues can be addressed. All plot and tree marking procedures and any soil disturbance activities must be cleared with park managers prior to plot establishment. The project lead will be responsible for year-end reporting to NPS for each active permit as required by the National Park Service.

In addition to permits, the key park contact at each park should be emailed two weeks prior to each trip as a reminder that vegetation crews will be out sampling. When possible, crews should

stop by the Visitor Center or other park office for brief introductions and to meet any logistical needs such as picking up keys, hang tags etc. Park staff or interns may be interested in this project and are encouraged to join crews for at least one plot to learn more about monitoring and participate in field sampling based on their level of training and experience. Follow-up trip reports should be completed within two weeks of each return trip.

## Fieldwork Schedule

Fieldwork begins in late April/early May of each year. Depending on the year within the 5-year sampling cycle/panel, three to 14 parks are sampled during the field season (all parks are sampled in years 1-3, only the larger parks are sampled in years 4-5). Fieldwork will always follow a certain order and timeframe of parks being sampled, with work beginning at CHCH every field season (see Table 1.1).

**Table 1.1. Approximate schedule for fieldwork by month and week.**

| Park | Week        | Park | Week        |
|------|-------------|------|-------------|
| CHCH | May Week 1  | STRI | July Week 2 |
| LIRI | May Week 2  | NISI | July Week 3 |
| RUCA | May Week 3  | CARL | Aug Week 1  |
| GUCO | June Week 1 | FODO | Aug Week 2  |
| SHIL | June Week 2 | CUGA | Aug Week 3  |
| COWP | June Week 3 | MACA | Sept Week 2 |
| KIMO | June Week 4 | ABLI | Sept Week 3 |

Table 1.1 Note \*LIRI/RUCA, COWP/KIMO, and MACA/ABLI may be combined for one 10-day session rather than two separate weeks for more efficient work if that is preferable for those involved in the fieldwork.

## Training

Training includes demonstration and practice of all measurement procedures. The critical importance of careful, accurate, and steady data collection to this long-term monitoring program must be emphasized. Trainers must stress the importance of exact adherence to SOP instructions to prevent bias in measurements among years. Lack of strict adherence to protocols will inhibit our ability to detect long-term trends. The field team leader will encourage trainees to discuss with their supervisors any concerns that arise over field procedures, the datasheets, or the database during training or later during the field season. The crew should never deviate from established protocols or alter the datasheet or database without first consulting with the protocol lead. Any changes in procedures must be clearly documented in the SOP revision history, and the project database. Once plot revisits begin, additions/changes to SOPs to accommodate plot revisits must be reviewed thoroughly before training takes place. Prior to training, SOPs with updates resulting from the previous field season's operational review will be sent out to all field crew members with adequate time for review before training begins.

Training must emphasize the critical importance of careful plot behavior to minimize plot trampling. On steep slopes, in wetlands, or on plots with thick herbaceous or moss cover, all workers should place and unload packs outside the plot boundary, not within. Crew members should plan ahead and retrieve all gear for a particular set of measurements at one time, rather than taking extra trips across the plot. Crew members should minimize steps on the transects, especially in or near the eight nested subplots. Training will focus on field methodology, which is primarily SOPs 3 – 9. Safety will also be an important topic, as well as pertinent issues arising from the previous season's operational review.

Training will begin with a discussion of the documents that are brought to each park in a "field binder" that field teams will utilize as they complete plotwork. These items are detailed further below in this SOP. Training will also include an overview of safety issues that may be encountered by field crews which will conclude with the review and signing of the current field season's Job Hazard Analysis. This session will address potential hazards such as:

- Navigating challenging terrain (cliffs, steep slopes)
- Working in extreme weather conditions (storms, heat)
- Encountering harmful animals (ticks, yellow jackets, snakes)
- Encountering harmful plants (poison ivy)
- Safety discussion (review and sign Job Hazard Analysis)

Additional topics covered during training will typically include:

- Updates to plot datasheets since previous field season
- Updates to field SOPs since previous field season
- Deviations from field SOPs during previous field season
- Commonly encountered errors found during previous field season's data entry, verification, and validation steps
- Identifying and documenting evidence of forest pests when measuring trees
- Documenting early detection invasive species

Additionally, an interim field season training or check-in will be scheduled to discuss, among other topics, an overview of field data collection issues. This session, which will most likely be conducted via teleconference, will at minimum include the protocol lead, data entry staff and those involved in data collection.

## **Logistics**

Once the year's schedule has been set, the protocol lead will reserve a CUPN vehicle or rental car for transport to and within parks. For most parks, plots can be accessed via a standard car and reasonable hiking, though in some cases transportation assistance may be needed. For example, at CUGA and LIRI a few plots may require a four wheel drive vehicle, ATV, and/or an overnight camping trip. At MACA, boats along the Green and Nolin Rivers may be important to ensure efficient access to all plots. Park contacts need to be notified well in advance to allow for assistance with these needs.

The network program manager will attempt to reserve park lodging where available as soon as the field season is set each year. If no park lodging is available, nearby commercial lodging within government rates will be pursued by either the program manager or field crew leader. Wherever possible, lodging should include kitchen facilities and high-speed internet access.

## **Maps**

At least two weeks prior to visiting each park, field maps will be made available to the protocol lead for review. GIS projects for each park will be maintained on the CUPN server to help facilitate this review. During plot establishment years, maps will include alternate locations, in case some of the plot locations need to be thrown out. These plot locations are overlaid on the best available base maps, such as USGS topographical maps or park brochure maps with useful roads, trails, and park boundaries included. Line and point symbols for roads, streams, plots, and other features should be clearly visible but not large enough to obscure other features, and a scale on all maps showing distances in meters or kilometers should be included. If the park is large enough, a smaller park-wide location map inset will be added to show where in the park the plot is located. All field maps will be printed on waterproof marine paper / Rite-In-Rain paper using a color LaserJet printer (inkjet printing does not adhere well to Rite-in-Rain paper). Crews may also be supplied with additional maps as needed and where available. For example, some parks have National Geographic foldable, water-resistant maps or other similar fine scale maps with trail information to help facilitate navigation.

Before a plot is established at a particular location, maps will be sent at least one month in advance of field work to key park staff and these staff are asked if they see any problems with the location of any new plots that the team plans on establishing for that field season. If any plots are clearly centered directly on a large road, managed old field, building, pond, etc. they should be discarded and replaced by the next point not already assigned for sampling on the list of points. Refer to SOP 3: Site Selection and Plot Establishment, for additional details. However, if there is doubt as to whether the point is centered directly in one of these areas or not, then the point will be kept and field crews will decide whether to keep it or throw it out upon their first visit to the site. When planning for plot revisits, maps will contain established plot locations from the plot establishment year.

## **GPS Setup**

Prior to each field season, the CUPN GIS specialist will upload all of the field season's plot coordinates for each park into a GPS unit and backup unit. Refer to SOP 2: Using GPS, for additional details.

## **Quality Control**

Each year, 5% of the plots scheduled to be sampled that year will be selected for repeat sampling to ensure consistency in plot data collection across the network. This will occur at parks where enough staff are available to conduct the repeat visits (usually CHCH and MACA). Some points that are particularly difficult to access may be excluded from the points chosen, but otherwise this will be done randomly. Field crews measuring the plots will not be informed as to which plots were chosen. Instead, a separate field crew will be asked to go back and resample some of the key measures within the plot within 2 weeks of the first team's sample. The list of resampled plots will be given to the Network Program Manager, so logistics can be arranged separately from the regular plot work and so that the field crew that measured the plot originally does not

know that it is one of the quality control points. Once completed, the duplicate plot results will be compared to initial results to identify any differences that are deemed significant. If any large differences occur, then actions may range from better training the following field season for the measure that showed the largest differences to “disqualification” of the data for those measurements in that year so that the data is not used in trend analyses.

### **Communication and Crew Oversight**

The crew carries a NPS radio when traveling in remote areas of parks when required by park policy or where cell phone coverage is spotty. In all other situations, carrying park radios will be optional. Radios will be programmed to the appropriate frequencies for each park. Crew members must know which frequencies to use, how to contact park radio dispatch, and be familiar with proper radio etiquette. In parks with cell phone coverage, crew members will be encouraged to carry a cell phone in the field for safety and to call their supervisor concerning protocol questions, although this is by no means required. It is essential for the crew to maintain regular contact with CUPN staff throughout the field season. Establish a regular weekly telephone call time between each team leader and supervisors to review the week’s work. The update should cover questions or problems related to plots, protocol, logistics, and scheduling. The CUPN Program Manager and any other supervisors should try to join field teams at least once during the field season to directly observe data collection procedures.

Within 1-2 weeks of end of field week, a 1-2 page summary of the work completed at the park will be forwarded to the park land manager and/or superintendent as a trip report. These summaries should not take more than 30 minutes to 1 hour to complete and will mainly rely on the anecdotal experiences of the field crew (interesting plants seen, plots visited, etc.).

### **Contracts**

If soil samples are taken in a particular year, CUPN will select an experienced forest soils chemistry laboratory, and have a purchase order or other contract in place for soil sample analysis. Several soil laboratories have sufficient capabilities and have capacity to quickly analyze samples, including the labs used by the Carolina Vegetation Survey (Brookside Labs in New Knoxville, Ohio). The Network Manager will make a final decision about the lab to be used to analyze samples during the summer of each year.

### **Review of Yearly Staff Roles**

Timing and staff roles are presented in Table 1.2.

**Table 1.2. List of protocol tasks, responsible staff, and schedule.**

| Task                                                                    | Staff                                        | Timing   |
|-------------------------------------------------------------------------|----------------------------------------------|----------|
| Finalize field schedule for crews                                       | Project Leader                               | January  |
| Reserve in-park housing for field crews (where that opportunity exists) | Project Leader                               | January  |
| Establish and refine annual and seasonal budgets                        | Project Leader/Network Program Manager (NPM) | January  |
| Acquire the appropriate permits                                         | Project Leader                               | February |
| Hire seasonal field crew if needed                                      | NPM/Project Leader                           | February |
| Prepare, repair, and/or purchase equipment                              | Field Crew Leader                            | March    |

| Task                                                                                                                                                                                                                                                               | Staff                                                      | Timing     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------|
| Confirm with park managers the correct method for permanently marking plots (some parks may want to opt out of conduit)                                                                                                                                            | Project Leader                                             | March      |
| Randomly select 5% of the plots for QAQC                                                                                                                                                                                                                           | GIS Specialist/NPM                                         | April      |
| Identify who will be taking QAQC data for the year                                                                                                                                                                                                                 | NPM/Project Leader                                         | April      |
| Prepare database and datasheets for the field season (review species lists, add crew members names, etc.)                                                                                                                                                          | Project Leader/Data Manager                                | April      |
| Compile training and field packet that includes maps of all points, coordinates of points, species lists, and datasheets                                                                                                                                           | Project Leader, NPM, Early Detection Leads, GIS Specialist | April      |
| Arrange and conduct field crew training                                                                                                                                                                                                                            | Field Crew Leader                                          | May        |
| Coordinate directly with park resource managers when conducting field work in each park (call at least two weeks in advance to confirm field work dates and one month in advance to arrange for assistance from park personnel in transportation, logistics, etc.) | Field Crew Leader and NPM                                  | May – Sept |
| Identify plants accurately and/or process unknown plants for later identification                                                                                                                                                                                  | Field Crew Leader                                          | Ongoing    |
| Participate in field season and oversee field crew during field season, providing logistic and administrative support                                                                                                                                              | Field Crew Leader                                          | Ongoing    |
| Ensure plot work meets quality standards                                                                                                                                                                                                                           | Field Crew Leader                                          | Ongoing    |
| Ensure adequate numbers of plots are established and/or measured each season at each park                                                                                                                                                                          | Field Crew Leader                                          | Ongoing    |
| Ensure effective communication between park staff, field crew, and other CUPN staff                                                                                                                                                                                | Field Crew Leader                                          | Ongoing    |
| Enter all data into master database as soon as practicable after data are collected                                                                                                                                                                                | Data Manager<br>Crew Members<br>Data Intern                | Ongoing    |
| Conduct annual operational review and, if needed, revise monitoring protocol and standard operating procedures                                                                                                                                                     | Project Leader                                             | November   |
| Conduct data verification on 10% of forms once data from hardcopy forms are entered into database                                                                                                                                                                  | Data Manager<br>Crew Members<br>Data Intern                | November   |
| Conduct data validation after records are entered into database                                                                                                                                                                                                    | Project Leader                                             | November   |
| Assure datasets and specimens are processed according to NPS guidelines                                                                                                                                                                                            | Curatorial Specialist                                      | November   |

| Task                                                                                           | Staff             | Timing            |
|------------------------------------------------------------------------------------------------|-------------------|-------------------|
| Compare QAQC data to original data for the 5% of plots that were resampled during field season | Project Leader    | November          |
| Data analysis and report writing                                                               | Project Leader    | November-December |
| Submit summary reports to permit reporting system for each active permit                       | Field Crew Leader | December          |

## Supplies & Equipment

Required equipment and supplies for vegetation monitoring are listed below. Equipment must be organized and maintained in good working condition. At the end of each season the crew leader will inventory the condition of all equipment and prepare a list of required repairs or replacements. Mark each piece of equipment with a piece of brightly colored flagging or tape to assist with locating it on the forest floor during data collection. Order any new supplies required for work by February. Especially, plan for having enough 12” long pieces of aluminum conduit and other hard-to-get items.

For parks where two teams are used, each team will need its own separate set of equipment. Equipment brought to each park will be kept in a large sturdy tub for vehicle transport and individual items taken to plots will be removed from the tubs and carried to plots by field crew members. See Table 1.3 for required equipment to be brought to each park by each team for fieldwork. Before leaving for a trip, the checklist will be used and reviewed when stocking each tub. Except for the plant press and optional items such as snake gaiters and insect repellent, the checklist will also be used when removing individual items to take to plots. During years when soil measurements are taken (this has not yet been implemented), a few additional items will be needed that are not currently included in the equipment checklists. These are: a sturdy trowel, a soil sampling square, a Bunny soil knife or keyhole saw, clippers, and sealable gallon-sized plastic bags for soil samples (3 per plot).

The field binder, file folder, and tablet computer will be prepared with specific materials by CUPN staff before each week of fieldwork so that field crews will have them ready to place in the tubs for transport to parks. These items and the specific materials pertaining to them are listed below:

### 1. Field binder

- Required items
  - Park-approved current research permit for park
  - Spreadsheet of plots to be sampled at the park (including information on plot location, and for revisit plots information on previous travel time to plot, previous plot sampling time, previous plot taxa count, and previous directions to plot)
  - Plot field maps for the park (including alternate plot locations during plot establishment years)

- Annually updated compass declinations for all parks
- Annually updated full list of vascular plant species known to the park
- Park-specific ecological community key
- Annually updated invasive species early detection table for all CUPN parks
- CUPN Incidental Observation forms for invasive exotic plants, forest pests, or rare/tracked plant species encountered during fieldwork
- Plant specimen forms for new-to-park plant species found at the park during fieldwork
- Annually updated emergency contact list for forest vegetation monitoring field crews
- Annually updated contact lists for all CUPN parks
- Directions to nearest hospital for all CUPN parks
- Additionally, several other documents may be added to the field binder as needed. These are subject to change and have included:
  - USDA and APHIS pest alerts for various invasive pest species as needed
  - Codes used for recording tree measurements with abbreviated definitions
  - Snag and coarse woody debris decay class chart
  - Definitions of irregularities in measuring tree diameters with diagrams
  - Techniques for measuring stand height on both flat and sloping ground, using a clinometer and tape measure
  - Diagram of a typical plot with information on which of the nested subplots get sampled
  - Rules for locating and establishing plots (during plot establishment years)
  - Instructions for laying out a plot (one version for newly established plots and one for resampled plots)

## 2. File folder containing required datasheets

- Datasheets for plot establishment years
  - Set of blank datasheets for each plot (4-12 sets, depending on park)
  - Set of blank plot datasheets on all-weather paper (x2)
  - Extra blank datasheets of pages 1 (x3), 6 (x3), 9 (x5), and 11 (x5)
- Datasheets for plot revisit years
  - Set of prepopulated datasheets for each plot, printed directly from database (4-12 sets, depending on park)

- Set of blank tree diagrams to insert into prepopulated datasheets (4-12, depending on park)
- Set of blank plot datasheets on all-weather paper (x2)
- Extra blank datasheets of pages 6 (x3), 9 (x3), and 11 (x3)

### 3. Fully charged Samsung Galaxy Tablet

- Files needed for plot establishment years
  - most recent protocol SOPs
  - digital field maps for park being sampled
  - most current taxonomic standard being used for the current field season
- Additional files needed for plot revisit years
  - scanned datasheets from previous plot visits
  - plot photopoints from previous plot visits

Additionally, each field crew member is responsible for bringing personal items needed for fieldwork such as a day's supply of water and food, a large backpack that can hold both personal items and field gear, sunscreen and hat if needed, rain gear including coat and pants if needed, and any medications for allergic reactions or other health conditions if needed.

**Table 1.3. CUPN required vegetation monitoring equipment list for each park.**

| <b>Required Equipment for Each Field Team (all items go to plot unless noted otherwise)</b>                                                                                                                                                                 | <b>Check</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Field binder containing required documents including current research permit for park                                                                                                                                                                       |              |
| File folder containing required datasheets (including extra blank forms)                                                                                                                                                                                    |              |
| Fully charged Samsung Galaxy Tablet and charger preloaded with required files                                                                                                                                                                               |              |
| Enclosed clipboards (x3)                                                                                                                                                                                                                                    |              |
| Snake gaiters (x3, if available)                                                                                                                                                                                                                            |              |
| GPS units with 2 fully charged AA batteries per unit (x2)                                                                                                                                                                                                   |              |
| Extra AA batteries (x8)                                                                                                                                                                                                                                     |              |
| Extra rechargeable AA batteries (8x) and charger (if available)                                                                                                                                                                                             |              |
| Compass (x2)                                                                                                                                                                                                                                                |              |
| Metal detector and spare 9V battery                                                                                                                                                                                                                         |              |
| Battery Tester                                                                                                                                                                                                                                              |              |
| 12" long aluminum conduit <ul style="list-style-type: none"> <li>• x7 per plot plus a few extra during plot establishment years (4-12 sets, depending on park)</li> <li>• x10 during plot revisit years (<math>\geq 3</math> need to go to plot)</li> </ul> |              |
| Pillowcase for transporting conduit                                                                                                                                                                                                                         |              |
| Blue anodized numbered tree tags <ul style="list-style-type: none"> <li>• x2 per plot plus a few extra during plot establishment years (4-12 sets, depending on park)</li> <li>• x10 during plot revisit years (6+ need to go to plot)</li> </ul>           |              |
| Nails <ul style="list-style-type: none"> <li>• x2 per plot plus a few extra during plot establishment years (4-12 sets, depending on park)</li> <li>• x10 during plot revisit years (6+ need to go to plot)</li> </ul>                                      |              |
| Hammer with prongs                                                                                                                                                                                                                                          |              |
| 50-meter tapes (x4)                                                                                                                                                                                                                                         |              |
| 30-meter tape                                                                                                                                                                                                                                               |              |
| Chaining pins (x8)                                                                                                                                                                                                                                          |              |
| Pin flags (x10)                                                                                                                                                                                                                                             |              |
| Clinometer                                                                                                                                                                                                                                                  |              |
| Digital camera with extra batteries and charger (charger does not need to go to plot)                                                                                                                                                                       |              |
| SD card                                                                                                                                                                                                                                                     |              |
| Spherical densiometer (concave model)                                                                                                                                                                                                                       |              |
| Laser range finder                                                                                                                                                                                                                                          |              |
| DBH tape (x2)                                                                                                                                                                                                                                               |              |
| Compact, waterproof binoculars (8x) for viewing canopy tree leaves                                                                                                                                                                                          |              |
| Leather gloves (for poison ivy vine removal)                                                                                                                                                                                                                |              |
| 10x hand lens                                                                                                                                                                                                                                               |              |
| Large and small plastic storage bags for plant samples                                                                                                                                                                                                      |              |
| Black permanent marker for labeling plant sample bags                                                                                                                                                                                                       |              |
| Meter sticks (x2)                                                                                                                                                                                                                                           |              |
| Biltmore stick                                                                                                                                                                                                                                              |              |
| Roll of colored flagging                                                                                                                                                                                                                                    |              |
| Roll of orange duct tape                                                                                                                                                                                                                                    |              |
| Pencils with erasers                                                                                                                                                                                                                                        |              |
| All-weather pen                                                                                                                                                                                                                                             |              |
| Insect vials (x2)                                                                                                                                                                                                                                           |              |
| Plant press with pressing sheets and newspapers (does not need to go to plot)                                                                                                                                                                               |              |
| Field first aid kits (x3)                                                                                                                                                                                                                                   |              |
| Insect repellent (permethrin x3 and DEET x3) (only take to plot if needed)                                                                                                                                                                                  |              |

## References

Perles, S., J. Finley, and M. Marshall. 2010. Vegetation and soil monitoring protocol for the Eastern Rivers and Mountains Network, Version 2. Natural Resource Report NPS/ERMN/NRR-2010/183. National Park Service. Fort Collins, Colorado.

## Revision History Log

Version numbers are incremented by decimals where minor grammatical changes or textual clarifications are incremented by hundredths (e.g., 1.01, 1.02, 1.03, ..., etc.) and moderate changes, such as equipment updates or changes in methodology that do not impact analysis are incremented by tenths (e.g., 1.1, 1.2, 1.3, ..., etc.). Whole number increments (e.g., 1.0, 2.0, 3.0, ..., etc.) are reserved for major revisions. Of course, differentiating between what is moderate vs. major may not always be clear, but it is anticipated that with a little “common sense” and discussion protocol leads can adequately document and track revisions through time to the benefit of future data users. It should be noted that prior to 2020 all revisions were incremented by tenths.

| Version # | Date     | Revised by              | Changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|----------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1       | 01/15/12 | B. Moore and R. White   | <ul style="list-style-type: none"><li>- Miscellaneous minor editorial changes, clarifications and formatting changes following initial field season</li><li>- Replaced generalized list of training topics with a detailed training week schedule</li><li>- Added 2012 monitoring schedule</li><li>- Updated supply and equipment checklist</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.2       | 9/26/12  | B. Moore and R. White   | <ul style="list-style-type: none"><li>- Added yellow jacket encounters and estimating cover values to training week schedule</li><li>- Added need to coordinate with park staff one month in advance where assistance with logistics is needed (Table 1.2)</li><li>- Miscellaneous minor updates to monitoring supplies and equipment checklist</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.3       | 3/28/17  | C. Bledsoe              | <ul style="list-style-type: none"><li>- Added note that training is scheduled to occur at CHCH each year since is first park</li><li>- Added note on importance of reviewing SOPs prior to training</li><li>- Minor miscellaneous updates to training week schedule</li><li>- Replaced specific annual dates with generalized schedule (e.g., May Week 1, Sept Week 2)</li><li>- Miscellaneous minor modifications in wording and directions to accommodate transition from establishment to plot revisit<ul style="list-style-type: none"><li>o Teams will be provided maps with established points</li><li>o Need for checking plot coordinates recorded when plot established</li><li>o Updates to supply and equipment checklist</li></ul></li></ul> |
| 1.35      | 3/29/20  | C. Bledsoe and B. Moore | <ul style="list-style-type: none"><li>- Changed sentence stating that monitoring would be implemented by two teams to monitoring would be implemented by one or two teams</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|      |          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |          |          | <ul style="list-style-type: none"> <li>- Removed detailed five-day training schedule and replaced with more generalized schedule</li> <li>- Updated NPS RPRS website URL</li> <li>- Correction/change CUGA from Aug week 4 to week 3 in table 1.1</li> <li>- Referenced fact that previous season's operational review will have implications on training topics</li> <li>- Removed recommended personal gear and soil measurement gear from equipment checklist and added to text section</li> <li>- Added note that ArcGIS files will be made available on network server to aid in field map review</li> <li>- Updated equipment checklist-removed un-needed items and added others, moved detailed items from field binder and datasheets folder to text section and added what will be on the Samsung Galaxy Tablet to text section.</li> <li>- Added note that a mid-season training will be held to review common errors encountered on datasheets during the field season.</li> <li>- Moved Revision History to end of SOP and added more detailed list of changes made to date</li> </ul> |
| 1.36 | 8/9/2020 | B. Moore | <ul style="list-style-type: none"> <li>- Address grammatical changes and clarifying comments made by IMD regional program manager</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |