New York STATE OF OPPORTUNITY | **Department of Environmental Conservation**

New York STATE OF OPPORTUNITY. | **Adirondack Park Agency**

# MANAGEMENT GUIDANCE

## VISITOR-USE MANAGEMENT AND WILDLANDS MONITORING OF FOREST PRESERVE LANDS IN THE ADIRONDACK PARK

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# Contents

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# I. Introduction

## Policy Direction

By law and policy, the Adirondack Park's three million acres of State-owned public lands are lands where protection of natural resources from the impacts of visitor use is a primary obligation of the State. This obligation is best stated in the Adirondack Park State Land Master Plan (APSLMP), where it reads:

> *If there is a unifying theme to the master plan, it is that the protection and preservation of the natural resources of the state lands within the Park must be paramount. Human use and enjoyment of those lands should be permitted and encouraged, so long as the resources in their physical and biological context as well as their social or psychological aspects are not degraded.*

This unifying theme should serve to focus the attention of you, as land manager and planner, on two critical sets of characteristics: the **natural resource conditions** of our State lands and the **visitor experiences** that are desired and considered appropriately suited to each area's land classification. Your active management of both the setting for recreational use (natural and managerial) and the recreational use, itself, should have the primary goal of achieving and maintaining these desired characteristics. Visitor-use management – or "VUM" – is simply the name of a process designed by experienced professionals to help you achieve this goal.

DEC and APA staff jointly developed this management guidance to be consistent with the federal "IVUM" planning framework (interagency work completed in 2019), as well as complementary to DEC's current UMP planning process. Your use of the guidance in developing your management proposals and following through with that management is intended to satisfy what are the APSLMP's most important directives regarding DEC UMPs: that they should be based on assessments of the carrying capacities of each area's resources, and they should prescribe management aimed at: 1) ensuring those carrying capacities are not exceeded; and, 2) rehabilitating any areas whose resources – both natural and experiential – are suffering degradation due to overuse.

## History

The APSLMP has long directed that DEC's unit management planning process should feature, for each area being planned for, "an assessment of the physical, biological and social carrying capacity of the area with particular attention to portions of the area threatened by overuse in light of its resource limitations and its classification under the master plan."  A professional methodology for undertaking such assessments has never been adopted and employed by the Department as a matter of policy, however, this has left land managers struggling to indirectly assess recreational carrying capacity on the basis of professional judgment from field observations, personal memories, available planning documents, and the anecdotal input of others.  While the issue of recreational carrying capacity has typically been noted in UMPs as a subject of concern, no direct and practical application of the concept has occurred.

The U.S. Forest Service, National Park Service, Bureau of Land Management, and Fish and Wildlife Service have faced similar challenges in assessing recreational carrying capacities across the wide variety of recreational opportunities on public lands since the 1964 establishment of the National Wilderness Preservation System.  And while each federal agency at first developed different, promising processes to address recreational carrying capacity (e.g., the Forest Service's "Limits of Acceptable Change" [LAC] framework), a number of years ago they concurred they would do well to team up to develop a more effective and uniform interagency approach.  They have accomplished this with recent completion and publication of the "Interagency Visitor-Use Management" (IVUM) framework noted above.  This IVUM framework embeds within it an LAC-type, wildlands monitoring approach designed to evaluate the natural resource and social conditions within a management area, as well as the effectiveness of protective and restorative management actions.  It includes use of educational programs and enforcement to support management decision-making and activities, and it is the framework that is herein adapted to planning for our New York State-owned land areas within the Adirondack Park.

With wildlands monitoring practices indisputably central to effective evaluation of most land management efforts, experience gained in recent years by DEC staff in the Adirondacks can now be built upon.  One prominent example of assessing the impacts of outdoor recreation as called for by an Adirondack Park UMP was the campsite-condition assessment work conducted in 1985 and 2002 for the St. Regis Canoe Area, which was followed by use of that information in drafting the 2006 UMP for the area.

The condition-class assessment protocol put to use in that effort was adapted from a U.S. Forest Service campsite monitoring protocol. The St. Regis Canoe Area UMP also included a general description of the LAC process and how it might be used to assess recreational carrying capacity within the area, particularly as related to camping and its impacts.

More recently, in 2018, amendments to the UMPs for the High Peaks Wilderness and Vanderwhacker Mountain Wild Forest were completed that included discussion and proposed application of the VUM framework through starting a systematic, long-term monitoring program for those two management areas. Results of the monitoring were specifically to be used to address recreational carrying-capacity issues and form the basis for evaluating each subsequent step of UMP implementation. The VUM framework is designed to support this type of "adaptive management" by helping land managers institute phased decision-making and actions over time within their respective units. As a result of those UMP planning processes and public review, the idea for creating this Visitor-Use Management and Wildlands Monitoring Guidance took hold.

## **Statement of Purpose**

Develop planning guidance for visitor-use management that incorporates wildlands monitoring as the main means to support the directive for DEC UMPs to assess the physical, biological and social carrying capacity of each unit's resources, especially related to impacts from outdoor recreation. Within the UMP planning and implementation processes, the VUM planning framework and the monitoring protocols provided will serve to contribute essential input to adaptive management, leading to more effective and efficient management and "best management practices."

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# II. Visitor-Use Management Workbook

## Basic Elements

An overview of the VUM Workbook process is presented in Figure 1, page 5, in the form of a standard flowchart diagram.  For clarity, its basic elements are elaborated upon here:

Development of the VUM plan ("Workbook Part A") involves either two or three processes (shown in the three rectangles) and a decision point (shown in the rhombus), the latter of which represents your key decision as to whether wildlands monitoring actions will be part of your plan or not.  If your decision is "NO," you will skip Sections VI – VII of the VUM Workbook after completing Sections I – V and finalize your VUM plan in Section VIII without any monitoring element.  It is expected that the majority of VUM plans, however, will rely upon monitoring, and in those cases the development of a monitoring plan via Sections VI – VII will need to be part of your effort.  This will require use of the VUM Workbook's appendices, which consist of a standardized (although also evolving) set of wildlands monitoring protocols developed to help ensure adequate natural resource protection and/or restoration where needed, as per the basic guidelines and criteria of the APSLMP.

Implementation of the VUM plan ("Workbook Part B") involves the single large process (shown in the large rectangle) that is either *paused* (figuratively speaking, at least) or else *concluded* by the decision point (shown in the rhombus) that represents the - important evaluation concerning whether your management actions have proved successful or not.   If your answer is NO, yet your evaluation reveals such progress and/or promise that no alteration of management actions seems called for, then implementation of your VUM plan is simply continued until the next evaluation is conducted on your plan's scheduled basis.  (This "loop" might well be, as conceived in an excellent plan, repeated multiple times.)  If your answer is NO, and your evaluation indicates your management actions are not likely to ultimately prove successful, then you should, instead, revisit your plan to reconsider and revise it.

If your answer is YES, you will probably have "in hand" satisfactory documentation showing how the standards you set in your plan (representing desired conditions and your plan's objectives) have been met.  This success will enable you to conclude implementation and take certain final actions, not all of which need to be part of this

guidance. *It is crucial at this point, however, to check back to Section I (Part A) of your plan to reread it and consider its objectives, as described there, and verify in your own thinking that those objectives you had in mind, originally, do seem to have been achieved.* It is possible for certain of your objectives to have been either incompletely captured by what you wrote there, and/or insufficiently represented by the standards or thresholds you selected during the planning process to represent them. *It is also important for you to think about what you have learned that could be of value to you or others in developing future VUM plans, and to document that as feedback in some form.*

# NYS DEC VISITOR USE MANAGEMENT GUIDANCE:
## OVERVIEW

DEVELOP VUM PLAN (Workbook Part A)

IMPLEMENT PLAN (Workbook Part B)

FEEDBACK

I.D. ISSUE(S)

DEVELOP VUM PLAN SECTIONS I - V

MONITOR-ING NEEDED?

NO

YES

DEVELOP MONITORING PLAN SECTIONS VI - VII

WORKBOOK APPENDICES: Monitoring Protocols

FINALIZE VUM PLAN SECTION VIII

TAKE ACTIONS

REVISE PLAN

CONTINUE ACTIONS

EVALUATE: STANDARS MET?

YES

NO

END ACTIONS (OBJECTIVES ACHIEVED)
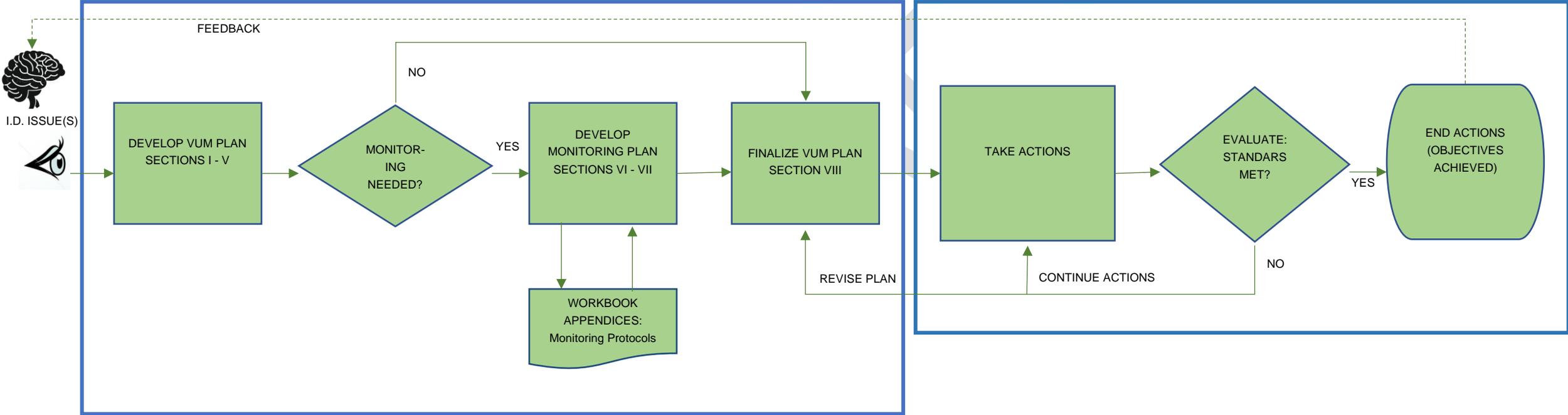
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# Workbook and Instructions

The intent behind providing the VUM Workbook as a "fillable form" is merely to help make the oftentimes challenging, visitor-use-management work you do easier and more effective.  While using it may entail a limited expansion of paperwork and process inherent to your workload, the benefits should greatly outweigh the downside of this.  The VUM Workbook should help you plan your management actions, explain and defend their value, undertake them in confidence, and then learn from them.  The workbook has been designed to simplify and streamline the assessment process and the educational and documentary value of any fully completed workbook, focused on a particular visitor-use problem, is evident.  Furthermore, the workbook, as it is presented here in its current iteration, is intended to be a living document – one that should be improved through time… amended as a result of your use of it and your feedback.

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# NYS DEC Visitor-Use Management Workbook

# PART A: DEVELOP YOUR "VUM" PLAN

## 1. SPECIFY YOUR MANAGEMENT PROBLEM

    a. **Brief narrative describing the setting and overarching visitor-use concern that calls for a project.  Highlight any special features or characteristics – or perhaps values of a place – deserving of protective action:** Click or tap here to enter text.

    b. **Issue or issues that comprise the problem (or most of it), and for each issue, the management need:** Click or tap here to enter text.

    c. **Objectives to be achieved through addressing the issue(s), above:** Click or tap here to enter text.

## 2.   REVIEW THE AREA'S PURPOSE AND RELEVANT EXISTING MANAGEMENT DIRECTIVES AND GUIDANCE

a. **State land classification category (or categories) and APSLMP definition(s) of the same:** Click or tap here to enter text.

b. **APSLMP guidelines and criteria of special relevance:** Click or tap here to enter text.

c. **DEC policies and/or regulations of special relevance:** Click or tap here to enter text.

d. **Other:** Click or tap here to enter text.

**SECTION 2 instructions**

    **(a):**  This can be a good reminder, helping to point to what your overall objectives might be.

    **(b):**  Review APA's *Adirondack Park State Land Master Plan*.

    **(c):**  Review relevant DEC policies.

    **(d):**  Some examples: UMP's, UMP amendments, RMP's for nearby conservation easement lands, *Great South Woods Complex Planning Recommendations*, relevant federal law such as the ADA.

## 3.  COLLECT INFORMATION ABOUT CURRENT CONDITIONS AND ASSESS NEED FOR MORE

   **a.  MAPPED LOCATION(S):** Click or tap here to enter text.

   **b.  PHOTOGRAPH(S):**

    (Also, see attachments if checked: __   Digital copies located in electronic file at: Click or tap here to enter text.)

   **c.  WRITTEN (GENERAL) DESCRIPTION(S) OF SITE CONDITIONS:**

    (Also, see attachments if checked: __   Digital copies located in electronic file at: Click or tap here to enter text.)

   **d.  DEC "CONDITION REPORTS":**  See attachments if checked: __   Digital copies located in electronic file at: Click or tap here to enter text.)

   **e.  WHAT ELSE MAY BE HELPFUL?** Click or tap here to enter text.

**SECTION 3 instructions**

**(a):**  The usefulness of a good map or maps cannot be understated.

**(b):**  Insert one or more photos, here, and/or attach other essential photos showing sites and site conditions. Good photos can be critical evidence to use in supporting your decision to take action.  These should be taken to contribute to your narrative about your management problem; they don't need to be the array of photographs you may take later to carefully document the current condition of particular indicators, if a decision is made that a wildlands monitoring program should be undertaken.

**(c):**  Think of this as the simple story you would tell, likely accompanied by the photos (above).

**(d):**  The usefulness of Condition Reports is critical to the planning effort.  Your site may not currently have any Condition Reports, but through the completion of this workbook, and/or as part of your planned teamwork, you will create reports for use in drafting your management approach.

**(e):**  Some examples: historic photos (*add captions, other helpful information*), field measurements or other data such as "counts," interview transcripts or summaries, relevant newspaper or journal articles.

## 4. CHOOSE APPROPRIATE FACILITIES AND SERVICES (AND/OR VISITOR ACTIVITIES) FOR THE AREA

**Identify and provide rationale[1]:**

**(Comments: Add helpful instructions concerning associated paperwork.)**

Click or tap here to enter text.

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**SECTION 4 instructions**

This section is NOT meant to imply there are always facilities and services that may appropriately be provided for visitors at locations where recreational use needs new management. It may be that no visitor activities besides off-trail explorations in a wild, undeveloped setting are appropriate, so nothing but this type of recreation should be managed for. (In other words, the action may be a straightforward closure, with nothing more than periodic checks to confirm effectiveness serving as "monitoring.")

Provision of one or more maps, here, to depict the intended final configuration of facilities (all DEC structures and improvements), use and impact zones, etc. is likely to be helpful.

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[1] Repeat as many times as necessary by copy-and-paste.

## 5. OUTLINE YOUR PLAN (parts a – d)

    **a. Project team members (excluding stakeholders), including titles and/or responsibilities of each:** Click or tap here to enter text.

    **b. Estimated project timeline:** Click or tap here to enter text.  Do different elements of the plan have individual timelines of importance?  If so, distinguish them and describe how their completion may affect the full timeline: Click or tap here to enter text.

    **c. Stakeholders (if any), including titles or organizations represented, and rationale for forming a stakeholders' group:** Click or tap here to enter text.

✓ **Task:** Create file(s) pertaining to stakeholders and their involvement.

✓ **Task:** Communicate in writing w/ stakeholders concerning the project's purpose and need, what is sought from them, and how/when their contributions can be made.

    **d. Summary of public outreach and/or public participation plan (if there will be one):** Click or tap here to enter text.

<p align="center">*****</p>

Note: parts "e" and "f" are to be completed in section 8. They are outlined here for reference only.

    *e. Deliverables[2] (as identified and agreed upon by project team):*

✓ *Task: Create file(s) pertaining to stakeholders and their involvement.*

    *f. Outline of plan's components/proposed actions, with schedule for the full timeline, ending with a target date for delivery of deliverables.*

✓ *Task: Develop a budget and list of needed resources to match the project.*

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[2] **Highlight deliverables that require monitoring.  For each, use the relevant monitoring protocols in the appendices and use Sections 6 and 7 (next pages) for documentation.**

**SECTION 5 instructions**

**(a):** You should assemble a team, and early input from them regarding the plan can be critical to developing a good one and to getting their buy-in and assistance throughout the whole of the effort.

**(b):** This should be presented as an ideal timeline. Every project is subject to many factors that make exact timing a challenge, but it is important to emphasize and prioritize project elements where timing is critical to meeting project goals.

**(c):** If a stakeholders' group is to be formed, it's extremely important for you to be able to articulate the nature of the input you seek from them and its potential value, as well as to be careful you do not foster unreasonable expectations on their part as to the extent to which their input will be used to guide the project.

# 6. DOCUMENT COMPARISON OF CURRENT CONDITIONS WITH DESIRED CONDITIONS, USING INDICATORS AND STANDARDS

**RESOURCE 1:** Click or tap here to enter text.

   a. **Describe / detail *current* conditions:** Click or tap here to enter text.

   b. **Describe / detail *desired* conditions:** Click or tap here to enter text.

**RESOURCE 2:** Click or tap here to enter text. [3]

   a. **Describe / detail *current* conditions:** Click or tap here to enter text.

   b. **Describe / detail *desired* conditions:** Click or tap here to enter text.

✓ **Task:** Establish a file for documentation of the above; list its contents and identify its location here: Click or tap here to enter text.

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**SECTION 6 instructions**

This section is where the management plan must start getting meaty. Refer to Section I, part c, and your first statement(s) about desired "overall results." With input from your team, reconsider and revise those as may be appropriate, then simplify, here, to well-articulated and obvious comparisons between existing conditions and the improved conditions you seek which, if achieved, will represent success. *If a wildlands monitoring effort is to be undertaken, you should now pause to use the Wildlands Monitoring portion of this workbook to plan that part of the effort.* (See "III. Wildlands Monitoring.)

The term, "RESOURCE" can refer to: natural resources such as soil conditions, tree health and water quality; "built" recreational resources such as foot trails, parking areas and tent pads; and psychological resources such as wildness, solitude, quietude and freedom (i.e., visitor experiences & opportunities).

To "describe / detail" conditions here, refer back to all of Section 3 and include (additional?) photographs and/or drawings (perhaps with measurements) as might be helpful.

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[3] Repeat as many times as necessary by copy-and-paste.

# 7. DECIDE UPON A MONITORING STRATEGY

**RESOURCE 1:** Click or tap here to enter text.

> **Indicator(s), threshold(s), and monitoring strategy (how, when, who):** Click or tap here to enter text.

**RESOURCE 2:** Click or tap here to enter text.

> **Indicator(s), threshold(s), and monitoring strategy (how, when, who):** Click or tap here to enter text.

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**SECTION 7 instructions**

This should become clear for each resource once your wildlands monitoring effort has been planned in detail via use of the Wildlands Monitoring protocols in the appendices.

## 8. COMPLETE THE OUTLINE OF YOUR PLAN (e – f)

    a. **Project team members (excluding stakeholders), including titles and/or responsibilities of each:** Click or tap here to enter text.

    b. **Estimated project timeline**: Click or tap here to enter text.  Do different elements of the plan have individual timelines of importance?  If so, distinguish them and describe how their completion may affect the full timeline: Click or tap here to enter text.

    c. **Stakeholders (if any), including titles or organizations represented, and rationale for forming a stakeholders' group:** Click or tap here to enter text.

✓ **Task:** Create file(s) pertaining to stakeholders and their involvement.

✓ **Task:** Communicate in writing w/ stakeholders concerning the project's purpose and need, what is sought from them, and how/when their contributions can be made.

    d. **Summary of public outreach and/or public participation plan (if there will be one):** Click or tap here to enter text.

    e. **Deliverables[4] (as identified and agreed upon by project team):** Click or tap here to enter text.

    f. **Outline of plan's components/proposed actions, with schedule for the full timeline, ending with delivery of deliverables:** (*Select visitor-use management actions from "the three E's".* [5]) Click or tap here to enter text.

✓ **Task:** Develop a budget and list of needed resources to match the project timeline.

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**SECTION 8 instructions**

It should now be possible to finalize your visitor-use management plan by completing parts "e" and "f" of the outline, and to take whatever steps are necessary to begin implementation. Prior to that, copy and paste parts "a" through "d" from Section V into this section for reference. Review the VUM Workbook's "Appendix II" (forthcoming) *and any of the literature/documents cited there that will help you be sure you've selected your proposed actions well from amongst "the three E's."*

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[4] **Highlight deliverables that require monitoring.  For each, use the relevant monitoring protocols in the appendices and use Sections VI and VII (previous pages) for documentation.**
[5] Review literature re: 1) site mgt. / **Engineering**, 2) information and **Education**, or, 3) regulation / **Enforcement**.

# PART B: IMPLEMENT YOUR PLAN

## 1. UNDERTAKE YOUR PLAN'S PROPOSED MANAGEMENT

Click or tap here to enter text.

## 2. EVALUATE MANAGEMENT EFFECTIVENESS

Click or tap here to enter text.

## 3. ADJUST MANAGEMENT AS NECESSARY

Click or tap here to enter text.

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**PART B instructions**

For each of these three Sections, consider your need for documentation.  As you undertake your management actions, for instance, they may or may not go "according to plan" (as you set forth in Part A, Section 8).  Think of Section 1, here, as the place where you keep a detailed "log," say,  of just when and where you actually do those things your plan has called for, and also the place where you note or describe events of special importance that occur during implementation.

Concerning Section 2, evaluations of management effectiveness should be evaluations made by your team, and given their great importance, they simply MUST be reduced to some type of well written form.

Concerning Section 3, adjusting management implies something of a "new plan."  This may amount to a significant revision or even replacement of your plan outline (Part A, Section 8), and if so, the revised plan should be inserted here.  If the adjustment is very limited or minor, however, it may only call for some brief notation here.

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# III. Wildlands Monitoring Concepts

Managing visitors in their year-round recreational pursuits on public lands involves addressing a wide variety of situations and taking various actions that do not all require the specialized effort of monitoring.  Therefore, it is important to carefully consider just when and where monitoring is required for evaluating the effectiveness of your management.  When wildlands monitoring is to be an element of a particular VUM plan, you will be completing Sections VI and VII of the VUM Workbook and – in so doing – consulting this portion of the Guidance, along with one or more of the specific monitoring protocols set forth in the appendices, which follow.

Wildlands monitoring efforts like these are designed to direct you in **systematically making observations and gathering detailed information** about natural resource conditions and visitor experiences impacted by outdoor recreation.  The results should then enable you as managers and planners to assess trends and adapt your management toward providing and protecting desired conditions:  allow you to objectively evaluate the success of your visitor-use management action(s).

Systematically making observations and gathering the detailed information you seek is the straightforward part of a wildlands monitoring effort, however, and it has no value in a planning vacuum.  It is only valuable in relation to certain all-important standards that have been decided upon[6] that aptly reflect desired conditions for the area(s), and that are expressed in terms of measurable "indicators."

In stepwise sequence, the remainder of this Guidance is intended to help you identify: 1) _conditions desired by land managers_ (which must meet, but which also can be chosen to go beyond, what is required); 2) _the best indicators to use_ to assess the impacts of various recreational activities; and 3) _the standards to be achieved_ for each _indicator_ based on policy and any other important managerial considerations. Concerning each of these:

- **Desired conditions** should be conceptualized to encompass not just natural resource and recreational facility conditions, but visitor experiences and opportunities, as well – all of which managers are tasked with providing and maintaining as per polices, regulations, laws and Article XIV of our Constitution. Desired conditions are aspirational and are not necessarily what currently exist. They should be well grounded in the State land classification of each area being planned for;

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[6] As informed greatly by – if not actually set via – the UMP planning process.

- **Indicators** are the measurable variables you select to represent desired conditions; chosen carefully, they should enable you to effectively and economically assess changes in those conditions (i.e., degradation or recovery).

- **Standards** can be thought of as "thresholds of acceptability" – the minimally acceptable conditions associated with each indicator. They serve as the data-rich references you can use to evaluate whether or not your management actions are meeting your objectives in achieving and maintaining desired conditions. Reviewed over time, they also allow you to determine important trends in changing conditions.

# **Desired Conditions**

Regarding conceptualization and description of desired conditions, you should consider those general ones, first, that are pointed to by the APSLMP definitions of the major State land classification categories. Four important conditions explicit or implicit in how **Wilderness, Primitive and Canoe** lands are defined or described by the language of the APSLMP are:

 **1) Untrammeled –** "an area where the earth and its community of life are untrammeled[7] by man – where man himself is a visitor who does not remain."

 **2) Natural –** "an area of state land or water having a primeval character, without significant improvement or permanent human habitation, which is protected and managed so as to preserve, enhance and restore, where necessary, its natural conditions."

 **3) Solitude –** "has outstanding opportunities for solitude or a primitive and unconfined type of recreation."

 **4) Undeveloped –** "appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable."

In *some* contrast, four important conditions explicit or implicit in how **Wild Forest** lands are defined or described by the language of the APSLMP are:

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[7] Not limited or restricted; unrestrained.

**1) Natural –** "retain an essentially wild character," as well as a "natural wild forest setting" and "wild forest atmosphere."

**2) Lightly impacted –** lands where "care must… be taken to avoid overuse, and the basic wilderness guidelines… apply also…  The relatively greater intensity of use allowed by the wild forest guidelines should not be interpreted as permitting or encouraging unlimited or unrestrained use..."

**3) Diverse opportunities –** allows for "those types of outdoor recreation that will afford public enjoyment without impairing the wild forest atmosphere" (nor "destroying the wild forest character or natural resource quality"), including limited "use of motor vehicles, snowmobiles, motorized equipment and aircraft" where such use on roads, trails and waterways are determined to be suitable in UMPs.

**4) Limited development –** may feature listed "structures and improvements… [that] will be allowed… in addition" to those allowed in Wilderness areas… And, "maintenance and rehabilitation of… [certain other] structures and improvements will be allowed to the extent essential to the administration and/or protection of state lands or to reasonable public use thereof but new construction will not be encouraged."

Each of your descriptions of desired conditions in Section 6 of the VUM Workbook may include and benefit from a brief narrative, general in nature, that takes direction from the above-noted (or other) language of the APSLMP, other sources, or simply your own thinking.  Such a narrative is not essential, however.

Separate from that, *what is essential is that each description of a desired condition focus on a particular resource and exactly how you would like for that resource to be characterized, once the planned management is successfully completed.*  (E.g., if a portion of prime, native brook trout stream habitat has been degraded due to loss of shading vegetation and sedimentation from streambank erosion, then desired conditions re shading (or water temperature) and sedimentation (or presence of clean gravel) should be described as precisely as possible).

## Indicators and Standards

**Indicators** should be considered and selected that effectively and economically measure trends in resource conditions and visitor experiences. Select indicators to represent the desired conditions and serve as measurable variables to assist you in

determining if desired conditions are being met. Indicators selected should monitor common recreational activities and a wide range of conditions within the UMP that are under your management control.

**Standards** (thresholds of acceptability) should be considered and selected that are the minimally accepted conditions associated with each indicator. Standards are the reference points for you as a manager to determine if current management activities are successful in achieving and maintaining desired resource conditions and visitor experiences. Additionally, standards are a numerical reference point to determine trends in conditions.

Indicators and standards are explained more specifically and repeatedly (with recommendations) in each of the monitoring protocols presented in the following appendices."

# IV. Appendices – Wildlands Monitoring Protocols

This final section of the Management Guidance presents five appendices that describe current monitoring protocols for: primitive tent site conditions; hiking trail conditions; trail use; visitor experience; and ecological integrity. **Other monitoring protocols may be added; for this to occur, the revised Management Guidance will need to be formally approved by APA and DEC.**

Each appendix in this section features a detailed monitoring protocol (in large part a field manual) designed to guide you from start to finish in your monitoring efforts. (See gray pages.) Being technical manuals, these are likely be revised in the future for any number of reasons, one likely one being changes in recommended or essential technology. The addition of helpful "tips" could be another. Consequently, the details of the manuals are not considered critical parts of the interagency Management Guidance that may only be revised via formal approval of APA and DEC. Instead, they may be revised by APA and DEC staff in consultation as needed.[8]

The use of different protocols with different methodologies is critical to detecting patterns and acquiring a depth of understanding around specific issues. It is important to remember, however, that this segregation of protocols and types of impacts to be "measured" amounts to an artificial construct – one you should not allow to prevent you from seeing the interconnected relationships between them. In completing monitoring work for primitive tent sites according to the protocol in Appendix A, for example, and arriving at "condition classes" for each site, it is possible to slip into thinking of those classes – as well as the various contributing, measured indicators – as primarily or entirely physical in nature. But "in nature," a severely compacted soil loses critical function; soil scientists who tend to regard and define soil functionally as something of a "living skin," consequently, are likely to consider the severely impacted <u>ground</u> at a primitive tent site as ecologically "dead" and not even truly "soil" anymore. In the same vein but at a larger scale, tent sites are frequently (preferentially) sited on the shores of lakes and ponds in the Adirondacks – *within "ecotones" of some ecological importance in our Park.* Obviously, then, if many heavily impacted primitive tent sites ring a body of water, and certain important characteristics typical of such ecotones (such as the diversity of vegetation and vegetative canopy heights required by certain birds, or the

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[8] As you follow the protocols set forth in these appendices and use the manuals, you may see places where helpful changes could be made in them. You are encouraged to take notes concerning these and pass them on to co-workers or superiors for consideration, discussion and potential adoption.

presence of both aquatic and terrestrial habitat conditions required by certain amphibians) are negatively affected, then much about the ecotone has been altered. The actual impacts of heavy visitor use at primitive tent sites, in other words, are clearly not just physical (they don't merely "take up space") but are intricately intertwined with the ecological. Unfortunately, measuring ecological impacts is a different, much more difficult challenge.

Depending on the situation, visitor experiences and the amount of use occurring on the trail network may also be related to (I.e., affected by) the degradation occurring at the tent sites used in the area. Considering these relationships is a critical component of the plan development phase. While it's expected that not all relationships will be evident from the onset, an adaptive management practice encourages the modification of problem hypotheses, and by extension the addition of different monitoring efforts as their necessity becomes more obvious.

# Appendix A: Primitive Tent Site Conditions

**INTRODUCTION**

[Note origin in Frissell, history of use by DEC/APA to date, etc…]

**STATEMENTS OF DESIRED CONDITIONS**

Your statements of desired conditions for primitive tent sites (individual sites or sets of them) might well include some unique, site-specific details. Minimally, however, the following desired conditions are recommended, as distinguished by State land classification and as follow from the APSLMP and the APA/DEC interagency "Primitive Tent Site Management Guidance."

**Wilderness, Primitive, Canoe**: *Each primitive tent site will provide locations for erecting up to three tents, featuring a total area of impact to vegetation not to exceed 1,200 square feet; minimal impact to ground vegetation surrounding the site; minimal exposed soil that retains humus and litter; minimal exposed tree roots; partial to full screening of the site from water, roads and trails; no evidence of human or solid waste; and a natural setting providing visitors the opportunity for an enjoyable outdoor experience.*

**Wild Forest:** *Each individual primitive tent site will provide locations for erecting up to three tents, featuring a total area of impact to vegetation not to exceed 1,200 square feet (see note, below); minimal to minor impact to ground vegetation surrounding the site; minimal to some exposed soil that retains humus and litter; minimal to some exposed tree roots; partial to full screening of the site from water, roads and trails; limited evidence of human or solid waste; and a natural setting providing visitors the opportunity for an enjoyable outdoor experience.*

*Note: This is increased to 1,600 square feet for tent-site groupings accessed from water, and to 2,400 square feet for tent-site groupings accessed by land.*

**RECOMMENDED INDICATORS**

The "Primitive Tent Site Monitoring Manual" presented in this appendix will guide you through a standard process of inventorying primitive tent sites and their conditions, which will include collecting data on a wide variety of potential indicators.  *Any of them you may choose to include in your monitoring program.*  The indicators listed below, however, are considered the most basic and fundamentally important indicators for wildlands monitoring efforts in the Adirondack Park, so they are recommended for inclusion, each time:

**Condition Class** (as per modified Frissell methodology: see p.__ of manual)

**Vegetation Disturbance** (measured in square feet of area)

**Soil Condition** (measured in square feet of area of bare or exposed soil)

**Tree Root Exposure** (measured by total length of… )

**Site Screening** (measured by estimated percentage of… )

**Human or Solid Waste** (measured by number of… )

**Naturalness** (as inferred through comparison of the ground vegetation within the tent site area and the surrounding landscape)

**RECOMMENDED STANDARDS**

*Note: the standards presented below should be considered only when monitoring a larger cluster or project area (i.e. 5 or more tent sites). For smaller clusters (i.e. 4 or fewer tent sites), the standards should be 100% for every indicator.*

Table 1. Indicators and standards for monitoring conditions at multiple primitive tent sites across a defined area: **Wilderness, Primitive, Canoe**

| Indicator | Standard |
|---|---|
| Condition Class (overall) | 80% of tent sites in condition classes 1 and 2 |
| Vegetation Disturbance | 90% of tent sites with less than 1,200 square feet of area disturbance to vegetation |
| Soil Condition | 90% of tent sites with less than 500 square feet of bare or exposed soil |
| Tree Root Exposure | 90% of tent sites with "slight" to "moderate" exposure |
| Site Screening | 90% of tent sites with "partial" to "complete" screening from any water bodies, roads or trails |
| Human or Solid Waste | 90% of tent sites with no waste sites |
| Naturalness | 100% of tent sites with no evidence of invasive, non-native species in the ground cover. |

Table 2. Indicators and standards for monitoring conditions at multiple primitive tent sites across a defined area: **Wild Forest**

| Indicator | Standard |
|---|---|
| Condition Class (overall) | 80% of tent sites in condition classes 1 and 2 |
| Vegetation Disturbance | 90% of tent sites with less than 1,200 square feet of area disturbance to vegetation |
| Soil Condition | 90% of tent sites with less than 500 square feet of bare or exposed soil |
| Tree Root Exposure | 75% of tent sites with "slight" to "moderate" exposure |
| Site Screening | 90% of tent sites with "partial" to "complete" screening from any water bodies, roads or trails |
| Human or Solid Waste | 90% of tent sites with no more than 3 waste sites |
| Naturalness | 100% of tent sites with no evidence of invasive, non-native species in the ground cover. |

**SUGGESTED ADDITIONAL RESOURCES**

 [Add list]

# Primitive Tent Site Monitoring Manual

## Planning

Inventories can be conducted in a single field season or can be done over several seasons.

Primitive tent site monitoring must be completed when green leafy vegetation on non-woody plants is present (e.g. ferns, herbaceous plants). Recommended dates for primitive tent site assessments are after June 1 and before October 1. The assessment can be completed in any kind of weather; however, data entry using a touch pad in rainy conditions is difficult.

The time to complete each assessment depends on several different factors, including: experience, organization and staff. An experienced person or a pair of a people who have completed numerous assessments can complete an assessment within 10-15 minutes. If you have limited experience with assessing tent sites, it is best to utilize two people to work through the assessment steps together.

## Day Before Field Visit

### Preparation

Identify the locations of the campsites that require an assessment and develop a plan to visit these sites, for example: put together driving directions, print a map of the area, and check the weather conditions for the date of the site visit. In addition, organize the field visit logistics, for example: sign out a vehicle, put together a backpack of personal equipment (e.g. rain gear) needed to be in the field, and identify which trailhead you will park at or which trail will you use.

### Hardware preparation

Prior to the beginning of field work, obtain the following:

- ☐ Smart phone or tablet
- ☐ Range Finder with ability to measure distances, height, and azimuth
- ☐ Range Finder User's Manual
- ☐ Camera with built in GPS and electronic compass features

- ☐ Vinyl Stake Wire Flags (20)
- ☐ Small Plastic Traffic Cone (1 - lightweight and brightly colored)
- ☐ Paper copy of the monitoring forms
- ☐ Maps of the area
- ☐ Clipboard
- ☐ Tent Site Assessment Field Guide
- ☐ Extra batteries (e.g. for range finder and for camera)
- ☐ Pencils
- ☐ Permanent marker

**Software preparation**

Be sure the field-monitoring software and the Adirondack Forest Preserve Primitive Tent Site Survey form have been downloaded onto the smart phone or tablet.

## Day of Site Visit

Before leaving for your site visit, be sure you have the materials previously listed.

Upon arrival at the tent site, complete the following procedures:

**Monitoring Procedures**

Turn on the smart phone. Open the Survey123 application. Open the Adirondack Forest Preserve Primitive Tent Site survey. Stand near the center of the site. Click "Collect."

Enter the following information:

**User Information**

Inventoried By: Select the field technician surveying the site.

**General Information**

Date: No action necessary. This will automatically populate.

Time: No action necessary. This will automatically populate.

## Location Information

Latitude: No action necessary. This will automatically populate.

Longitude: No action necessary. This will automatically populate.

Horizontal Accuracy (hdop): No action necessary. This will automatically populate.

Altitude: No action necessary. This will automatically populate. This may take a minute, but you can skip and continue to add.

Select the land classification the tent site is located in.

Select the management area the tent site is located in (e.g. High Peaks Wilderness).

If available, identify the tent site number.

## Tent Site Boundaries-Disturbed Area

### Background

**The disturbed area is a measurement of the total area disturbed by camping activities.

When determining disturbed area, one should first examine what is 'normal' for the ecosystem. Pay close attention to the areas that are not disturbed by camping, these are the 'control areas.' Field technicians should familiarize themselves with what kind of vegetation is naturally present in order to determine if an area has been disturbed by camping, or if is in a natural state.

Do not include satellite sites or social trails as part of the tent site boundary.

### Process

*Note: The following process is used to delineate the impact boundary of the tent site using two people (person 1 and person 2).*

Selecting a Reference Point

Person 1 - Select a campsite reference point which is preferably: (a) visible from the entire campsite boundary, (b) close to and easily referenced by distinctive permanent features such as boulders or trees, (c) at least six feet away from metal fire grates or

anything that would affect compass readings. If there is no metal grate at the fireplace, no minimum separation is required.  Place a plastic traffic cone at the reference point.

<u>Flagging Tent Site Boundaries</u>

- Turn on the range finder.  (Note: If you are unfamiliar with how to use the range finder, see the range finder manual.)
- Begin by standing directly over the reference point (plastic cone).  Using the range finder, locate the compass bearing of 0 degrees (azimuth).  Direct person 2 to stand in the location of 0 degrees.
- Person 2 – Place a flag at the campsite boundary at 0 degrees.  (Use the Tent Site Assessment Field Guide for assistance in boundary delineation).
- Person 1 - Using the range finder, locate the compass bearing of 22.5 degrees (azimuth).
- Person 2 – Place a flag at the campsite impact boundary at 22.5 degrees.
- Continue this process for every 22.5 degrees (e.g. 45, 67.5, 90, 112.5, 135, 157.5, 180, 202.5, 225, 247.5, 270, 292.5, 315, and 337.5) until you are back at 0.

<u>Recording Distance of Flagged Boundaries</u>

- Once the boundaries are flagged, record the distances from the reference cone to the tent site boundary into field monitoring software using the following process:
- Person 1 stands at the cone.
- Person 2 stands at the zero flag with shoulder facing person 1. Person 2's shoulder should be on the same plane as the flag.
- Person 1 uses the range finder to measure the distance. If you are using the range finder to determine distance, use the HD mode (horizontal distance mode).
- Person 1 should target person 2 standing at the flagged boundary.  Use the cross hairs in the range finder and target person 2's shoulder. It is not a good idea to shoot the range finder into a person's eyes.
- Using the field monitoring software, person 2 records the distance to the campsite boundary at zero degrees as identified by person 1
- Work in a clockwise fashion measuring and recording the campsite boundary distances into the field monitoring software. Round distances to the nearest half foot increments (e.g. enter 12.5 for a length of 12 feet 4 inches **or** 13 for a length of 13 foot 2 inches).
- If a large feature such as a tree or boulder prevents you from using one of the provided azimuths, adjust the azimuth so that the distance from the reference point to the campsite boundary is uninterrupted. Note the change in azimuth in the notes section at the end of the survey.

<u>Tent Site Area</u>

No action necessary for the Total Tent Site Area. This will automatically populate.

<u>Boundary Confidence</u>

Indicate your confidence that you accurately captured the extent of the impact area.

If you answered "I'm guessing here…" or "Probably. I'm a bit uncertain" please indicate the reason for your low confidence to accurately capture the extent of the tent site boundary.

**Tent Site Features**

**Background**

The following questions are part of gathering information on features which serve as indicators of disturbance commonly found at tent sites. Use the Tent Site Assessment Field Guide as a resource to help answer these questions.

**Process**

**Shoreline**

Indicate if a body of water is nearby.

*If you answered 'yes',* record the distance from the reference point to the edge of nearby waterbody as one of the following classes: (Record *Greater than 200 feet* if the site is not within two hundred feet from edge of waterbody.

- 0 – 25 Feet
- 26 – 50 Feet
- 51 – 75 Feet
- 76 – 100 Feet
- 101 – 125 Feet
- 126 – 150 Feet
- 151 – 175 Feet
- 176 – 200 Feet
- Greater than 200 Feet

If site is accessible by water, choose the category that best describes the level of vegetative screening from the water:(I.e., if the campsite were occupied, would it be visible to a person in a boat on the water?)

- *None:* If occupied, campsite is completely visible from water.
- *Partial:* If occupied, campsites are partially visible from water.
- *Complete:* If occupied, campsite is not visible from water.
- *Not applicable:* Record not applicable if the site is not within 200 feet of the shoreline.

Indicate if there is an access trail from the tent site to the water.

*If you answered yes, s*elect the number of access trails from the water to the tent site.

*The following question will appear, and repeat based on the number you select.*

Choose the category which best describes the condition of the shoreline on the access trail:(See Tent Site Assessment Field Guide for shoreline disturbance examples).

- *None:* no shore disturbance.
- *Slight:* minimal physical change, small amount of ground vegetation worn away.
- *Moderate:* ground vegetation completely worn away, some soil erosion, tree roots exposed on the surface.
- *Severe:* soil erosion obvious, tree roots completely exposed.

If the site is accessible by water, choose the category that best describes the difficulty of accessing the site from the put-in/take-out: See Tent Site Assessment Field Guide for Waterfront Accessibility examples.

- *Easy:* Site is at approximately the same elevation as the put-in/take-out and requires no additional effort to access.
- *Intermediate:* Site is at a slightly higher elevation than put-in/take-out and requires some additional effort to carry gear up a slight bank.
- *Difficult:* Site elevation is significantly greater than put-in/take-out and requires significant additional effort to carry gear up a steep bank.
- *Most Difficult:* Site elevation and steepness of bank make site nearly impossible to access without significant additional effort.

**Fire Ring or Fireplace**

Count and record each fire site within the boundary of the campsite and satellite sites.

*The following questions will appear and repeat based on the number you select:*

Choose from the following categories to describe the condition of the fire ring:

- *Good:* no damage to fire ring
- *Some damage:* fire ring has one to three rocks displaced
- *Damage/repair*: fire ring integrity is significantly compromised
- *Replace:* fire ring is severely damaged and not functional
- *N/A:* no fire ring

Indicate if the fire ring/fireplace meets DEC's accessible design standard.

**Lean-to**

Identify the number of lean-tos.

*The following questions will appear and repeat based on the number you select.*

Choose from the following categories to describe the condition of the lean-to:

- *Good:* no damage to lean-to
- *Some damage:* lean-to has minor damage
- *Damage/repair:* lean-to site integrity is significantly compromised
- *Replace:* lean-to is severely damaged and not functional

Indicate if the lean-to meets DEC's accessible design standard.

**Privy**

Identify the number of pit privies.

*The following questions will appear and repeat based on the number you select.*

Choose from the following categories to describe the condition of the pit privy:

- *Good:* no damage to pit privy
- *Some damage:* pit privy has minor damage
- *Damage/repair:* pit privy integrity is significantly compromised
- *Replace:* pit privy is severely damaged and not functional

Choose from the following categories to record the distance from the privy to the tent site:

- 0-50 feet
- 51-100 feet
- 101-150 feet
- Greater than 150 feet

Identify if water is nearby.

*If you answered 'yes', record* the distance to the water from the privy:

- 0-50 feet
- 51-100 feet
- 101-150 feet
- Greater than 150 feet

Indicate if the pit privy meets DEC's accessible design standard.

**Picnic Table**

Identify the number of picnic tables.

*The following questions will appear and repeat based on the number you select.*

Choose from the following categories to describe the condition of the picnic table:

- *Good:* no damage to picnic table
- *Some damage:* picnic table has minor damage
- *Damage/repair:* picnic table integrity is significantly compromised
- *Replace:* picnic table is severely damaged and not functional

Indicate if the picnic table meets DEC's accessible design standard.

**Tent Sites**

Count and record the number of 2-person tents (8x10 ft) that could be set up and comfortably used within the campsite. Do not include satellite sites. Do not count places where rocks or roots would prevent an individual from using a tent.

Count and record the number of constructed tent pads. The dimensions of the pad may have room for more than one tent, however, only count the number of tent pads.

> *The following questions will appear and repeat based on the number you select.*
>
> Choose from the following categories to describe the condition of the tent pad:
>
> - *Good:* no damage to tent pad
> - *Some damage:* tent pad has minor damage
> - *Damage/repair:* tent pad integrity is significantly compromised
> - *Replace:* tent pad is severely damaged and not functional
>
> Indicate if the tent pads meet DEC's accessible design standard.

Identify the number of disturbed satellite areas outside the campsite boundaries. Satellite areas are nonconforming, recreationist created improvements to the land for purposes of primitive camping or cooking. Satellite areas are not part of the original DEC designated site; not identified with yellow *camp here* discs, closer in proximity to the designated site than allowable; connected to the DEC designated site via social trails; and may exceed the number of allowable tents in the site when added to the designated site.

**Social Trail**

Social trails are informal trails created by foot traffic from people and animals. Social trails are not part of the official DEC trail network and are an indication of human disturbance. These are trails that were created by visitors. Informal trails are often indistinguishable from formal trails, except for formal trail blazes or markings.

Indicate if there are any other trails within the area.

If you answered 'yes', count and record all trails leading away from the campsite boundary to other campsites. *Note: Do not count extremely faint trails that have un-*

*trampled tall grasses or vascular plants in their tread. Do not count trails leading to the privy. Do not count trails that may provide additional access to the water.*

**Parking**

Indicate if vehicle parking, available primarily for tent site occupants, is within 250 feet of the tent site boundary.

If you answered 'yes', choose from the following categories to describe the condition of the parking area:

- *Good:* no damage to parking area
- *Some damage:* parking area has minor damage
- *Damage/repair:* parking area is severely damaged and not functional

Indicate if the parking meets DEC's accessible design standard.

**Screening Between Sites**

Indicate if there are any other designated tent sites (other than associated satellite sites) or lean-tos within the area. Stand in the campsite and determine if other shelters or nearby campsites, which if occupied, are visible.

If you answered 'yes', choose from the following categories to describe the level of vegetative screening between sites:

- *Complete:* If occupied, other designated tent sites or lean-tos are not visible.
- *Partial:* If occupied, other designated tent sites or lean-tos are partially visible.
- *None:* If occupied, other designated tent sites or lean-tos are visible.

**Formal Trail**

Formal trails are trails created by DEC are part of the official DEC trail network. These are not trails created by visitors. Informal trails are often indistinguishable from formal trails, except for formal trail blazes or markings.

Indicate if there are any other formal (designated) trails within the area. If you answered 'yes', choose from the following categories to record the distance from the reference point to the nearest formal (designated) trail:

- 0 – 25 Feet
- 26 – 50 Feet
- 51 – 75 Feet
- 76 – 100 Feet
- 101 – 150 Feet
- 151 – 175 Feet
- 176 – 200 Feet
- 201 + Feet

Stand at the nearest formal trail and determine if the campsite were occupied if it would be visible from the formal trail. Choose from the following categories to describe the level of vegetative screening from the nearest formal (designated) trail:

- ***None:*** If occupied, campsite is completely visible from formal trail.
- ***Partial:*** If occupied, campsite is partially visible from formal trail.
- ***Complete:*** If occupied, campsite is not visible.

**Site Vegetation**

Choose from one of the following categories to estimate the percentage of live non-woody vegetative ground cover within the campsite boundaries (e.g., herbs, grasses, and mosses but not saplings, witch hobble or tree seedlings):

- 0 – 25%
- 26-50%
- 51-75%
- 76-100%

Locate an adjacent area which would closely resemble the campsite area had the site never been used. Choose from the following categories to estimate the percentage of live non-woody vegetative ground cover in the adjacent, but largely undisturbed *control site*:

- 0 – 25%
- 26-50%
- 51-75%
- 76-100%

**Site Soil**

Choose from the following categories to estimate the percentage of exposed soil within the campsite boundary (e.g., soil with very little or no vegetative cover or organic litter such as partially decomposed leaf, needle, or twig litter)::

*Note: Dark organic soil (the decomposed product of organic litter) should be assessed as bare soil when its consistency resembles that of peat moss. If there are few thin patches of organic litter, assess the entire area as bare soil.*

- 0 – 25%
- 26-50%
- 51-75%
- 76-100%

Using the same control site as you selected for vegetative ground cover above, choose from the following categories to estimate the percentage of exposed soil in the adjacent but largely undisturbed control site:

- 0 – 25%
- 26-50%
- 51-75%
- 76-100%

**Waste**

Indicate if there is any human waste within the area.

If you answered yes, follow all social trails and count and record the appropriate category of individual human waste sites along the trails and near or in the campsite in separate locations with human feces present. Include in the count toilet paper that may have been used after defecation.

- 1 – 3
- 4 - 6

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- 7 or more

Indicate if there is any trash/garbage within the area.

If you answered yes, follow all social trails and count and record the number of pieces of trash left in the campsite and along the trails. Glass shards from broken bottles are often found at sites; do not count individual pieces.

- 1 – 3
- 4 – 6
- 7 or more

**Tree Damage**

Indicate if there is any tree damage within the area.

If you answered 'yes', choose from the following categories to describe the degree of damage to the live trees (DBH > 1 inch) within or on the campsite boundary: *Do not count tree stumps as tree damage.*

- *Slight:* nails, nail holes, small branches cut off or broken, small superficial trunk scars.
- *Moderate:* large branches cut off or broken, trunk scars and mutilations that may be numerous but do not total more than one square foot of area.
- *Severe:* Trunk scars that total more than one square foot of area or completely girdling of the tree.

Indicate if there is any root exposure within the area.

If you answered 'yes', choose from the following categories to describe the degree of root exposure within or on the campsite boundary:

- *Slight:* 0-1.5 feet of root sticks out at least one inch above the ground surface.
- *Moderate:* 1.6-3 feet of root sticks out at least one inch about the ground surface.
- *Severe:* more than 3 feet of root sticks out at least one inch above the ground surface.

Are there tree stumps (diameter > 1 inch and less than 4.5 feet tall) within or near the tent site boundary?

If you answered 'yes', choose from the following categories to record the number of tree stumps (Diameter > 1 inch and less than 4.5 feet tall) within or near the tent site

boundary: *Do not include wind thrown trees with their trunks still attached or cut stems from multiple-stemmed trees.*

- 1 to 5
- 6 or more

**Condition Class**

Record one campsite condition class using the five condition class descriptions listed below.  Also, see Tent Site Assessment Field Guide for images and further descriptions on Condition Class.

| Class 1: | Ground vegetation flattened but not permanently injured. Minimal change except for possibly a simple rock fireplace. |
|---|---|
| Class 2: | Ground vegetation worn away around fireplace or center of activity. |
| Class 3: | Ground vegetation lost on most of the site, but humus and litter still present in all but a few areas. |
| Class 4: | Bare mineral soil widespread. Tree roots exposed on the surface. |
| Class 5: | Soil erosion obvious. Trees reduced in vigor or dead. |

Notes: Add any notes you may want to add.

Once the survey is complete, click the check mark at the bottom of the page.

**Photography Procedures**

**Introduction**

Collection of photographic documentation is a valuable part of evaluating impacts. It provides a quick and easy way to capture conditions and support management actions. In addition, photographic documentation can help validate data captured in the field (see previous section).  The following is the process for collecting photographic information about the primitive tent site.

**Setup**

Complete the following process to activate the location data collection and the compass display.

Location Data Collection Activation

When the built-in location data is set to On, the camera receives signals from position satellites.  Perform the following steps to activate location data collection.

1. Turn on camera.
2. Press the menu button when the shooting screen is displayed.
3. Press the multi selector (circle) to the left.
4. Press the multi selector (circle) down until the satellite menu icon is displayed in yellow.
5. Press the "OK" button.
6. Press the multi selector (circle) up until "Location data options" is displayed in yellow.
7. Press the "OK" button.
8. Use the multi selector (circle) until "Use built-in location data" is displayed in yellow.
9. Press the "OK" button.
10. Use the multi selector (circle) until "On" is displayed in yellow.
11. Press the "OK" button.
12. Press the menu button to return to shooting screen.

The camera is now receiving signals from the positioning satellites.  See the following to check location data reception.

Location data reception can be checked on the shooting screen.
- 📡 or 📡: Signals are being received from four or more satellites, or from three satellites, and location data is being obtained.
- 📡: Signals are being received, but location data cannot be obtained.
- 📡: Signals are not received.
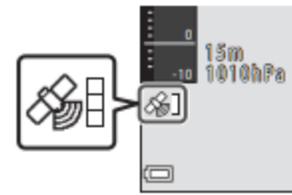
Compass Display Activation

When the compass display is set to On, the approximate direction of shooting is recorded. Perform the following steps to activate compass direction data collection.

1. Turn on camera.
2. Press the menu button when the shooting screen is displayed.
3. Press the multi selector (circle) to the left.
4. Press the multi selector (circle) down until the satellite menu icon is displayed in yellow.
5. Press the "OK" button.
6. Press the multi selector (circle) up until "Electronic compass" is displayed in yellow.
7. Press the "OK" button.
8. Use the multi selector (circle) until "Compass display" is displayed in yellow.
9. Press the "OK" button.
10. Use the multi selector (circle) until "On" is displayed in yellow.
11. Press the "OK" button.
12. Press the menu button to return to shooting screen.

**Photography Process**

Once the GPS and compass are activated, perform the following. **Do not vary from the process outline below.**

Take the first photograph of the campsite reference point (the cone). Select a vantage point that provides the best view of the campsite and reference point. Try and select a point that clearly shows the reference point location in relation to nearby trees or boulders. The trees and boulders may be used in the future upon returning to the site to re-assess the site. Make sure the cone is visible in the photograph.

Take a second photograph of the reference point from a closer location (less than six feet) that helps to clarify the point location.

Stand over the reference point. Take photos with the camera tilted down to include as much campsite groundcover as possible (see reference images below as an example).

Take pictures horizontally (landscape), not vertically. The first picture should be taken in the direction of 0 degrees, the second at 45 degrees, the third at 90 degrees, the fourth at 135 degrees, the fifth at 180 degrees, the sixth at 225, the seventh at 270, and the eighth at 315.

Take photos of features assessed during the inventory, such as:
- picnic table
- privy
- fireplace
- waterfront access/shoreline
- lean-to
- tree damage



*Campsite reference image 1  - Note where the horizon line is in the frame of the picture. Also note the horizon is level.  A high horizon line tells the viewer that the sky or area above the horizon is not the visual goal of the image; the foreground is.*

*Campsite reference image 2 - Note where the horizon line is in the frame of the picture. Also note the horizon is level. A high horizon line tells the viewer that the sky or area above the horizon is not the visual goal of the image; the foreground is.*

## **Back at the office**

Once you are back at the office, click **Submit** to submit the completed surveys.

Open SharePoint Primitive Tent Site Assessment Project Page. Load camera images on SharePoint into the Images Folder.

**Table 1. Primitive Tent Site Monitoring Results for Condition Classes in "Example Area."**

**Protocol:** Assessments to be done annually for 4 years

**Standard:** 80% of sites in condition classes 1 or 2

| Site # | Condition Class | | | |
|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 4 |
| 1 | 2 | 2 | 2 | 2 |
| 2 | 1 | 1 | 2 | 2 |
| 3 | 3 | 3 | 4 | 3 |
| 4 | 5 | 5 | 4 | 2 |
| 5 | 4 | 4 | 3 | 2 |
| 6 | 2 | 2 | 2 | 1 |
| 7 | 3 | 2 | 2 | 1 |
| 8 | 3 | 2 | 2 | 2 |
| 7 | 3 | 3 | 3 | 2 |
| 8 | 5 | 5 | 4 | 4 |
| 9 | 2 | 2 | 1 | 1 |
| 10 | 4 | 3 | 3 | 2 |
| Total % with class = 1 or 2 | 40% | 60% | 60% | 80% |

# Appendix B: Hiking Trail Conditions

**INTRODUCTION**

The objective of developing this Hiking Trail Conditions Manual is to provide a consistent process for monitoring trails used for hiking in wildland recreation areas on Forest Preserve lands within the Adirondack Park (AP). A complete inventory of the attributes of a trail system or network (e.g., trail grades, slope alignments, soil conditions) and characteristics (e.g., accessibility, bridges, attraction locations) is best compiled in a geographic information system using maps, satellite and aerial photography and field work. However, in the absence of such a complete inventory, basic walking surveys of individual trails by knowledgeable staff can begin, **as a preliminary monitoring step**, to address general trail conditions and "suitability" of the existing trail system on a unit-by-unit basis.  (In gauging "suitability," you are looking at the long-term sustainability of trails through maintenance.)

Standards for the design, construction, and maintenance of hiking trails and other types of trails have not been established for Forest Preserve lands within the AP. The location of many trails and trail segments are often the result of historic visitor-use patterns and do not necessarily reflect a trail suitability assessment.  More detailed condition assessments are needed after specific trail standards are developed and existing trails have been assessed for suitability.

Walking surveys on hiking trails typically address trail conditions and suitability and can be conducted efficiently and effectively by one or two field staff working together. Four types of walking surveys are often used in parks and wildland management:

1. A sustainability assessment evaluates the amount and type of hiker use that a trail can accommodate with maintenance or whether partial or complete relocation should be considered. While this is most often developed with a complete resource inventory and GIS support, sustainability can be noted in the field for further study to ascertain whether maintenance or relocation are needed for a trail or trail segment. Sustainability assessments are essential prior to investing in and implementing maintenance programs.
2. Condition class surveys characterize sections of trails with similar types and levels of impacts with condition classes defined for five or more typical classes of impacts. Condition classes provide a general statement about trail and trail segment conditions to help give broad guidance for trail maintenance.

3. Problem assessment surveys record the specific location of predefined impacts such as muddy areas, wide trail tread, and soil loss on the trail tread. Problem assessments provide specific information for trail maintenance planning and annual task assignments.
4. Detailed trail condition and impact assessments are long-term strategic planning approaches that use sampling procedures to measure attributes at fixed intervals to monitor such attributes as trail width or depth and site-specific impacts such as braided trail treads. Monitoring trends in use and impacts provides input to long-term planning efforts.

The following *Hiking Trail Conditions Monitoring Manual* uses the first two of these approaches to assess, <u>on a preliminary basis,</u> existing trail conditions and the possibility of the need to relocate a trail segment. More detailed condition assessments are needed in a future expansion of this guidance, once specific trail standards are developed and existing trails have been assessed for suitability.  (See, especially, Suggested Additional Resources: Marion, J. L., et al. 2011.)  Fundamentals of the Limits of Acceptable Change process were used to guide development of the structure of the walking survey set forth, here, within the *Hiking Trail Conditions Monitoring Manual*.

## STATEMENTS OF DESIRED CONDITIONS

Unit Management Plans are required by the APSLMP to include: "*an assessment of areas threatened by overuse, and an assessment of carrying capacity.*"  The desired conditions for trails should take into consideration the land classification, classification definition, and appropriate and intended level of trail development for primitive, secondary, and primary trails.  Your statements of desired conditions for the amount or level of visitor use on trails and roads might well include some unique, site-specific details.

The definition of a foot trail fits most closely with the type of trails in the AP most often used primarily for hiking:

- *Foot Trail -- a marked and maintained path or way for foot travel located and designed to provide for reasonable access in a manner causing the least effect on the surrounding environment.*

Other types of trails set forth in the APSLMP, which may also be used by hikers, are defined as follows:

- *Bicycle Trail -- a marked trail, designated for travel by bicycles, located and designed to provide access in a manner causing the least effect on the local environment.*
- *Cross Country Ski Trail – a marked and maintained path or way for cross country ski or snowshoe travel, which has the same dimensions and character and may also serve as a foot trail, designed to provide reasonable access in a manner causing the least effect on the surrounding environment and not constructed, maintained or groomed with the use of motor vehicles.*
- *Horse Trail -- a path marked and maintained for travel by horses, located and designed to provide for reasonable access in a manner causing the least effect on the local environment.*
- *Rail Trails -- trails developed within a railroad corridor where tracks have been removed to accommodate modes of travel other than rail car, including snowmobiles, horses and bicycles, but excluding public use of ATVs, automobiles, and other motor vehicles.*
- *Snowmobile Trail -- a marked trail of essentially the same character as a foot trail designated by the Department of Environmental Conservation on which, when covered by snow and ice, snowmobiles are allowed to travel and which may double as a foot trail at other times of year.*

**Hiking trail condition information should be used in close conjunction with information collected as per *Appendix C: Trail Use,* so as to better understand the relationship between levels of visitor use and trail conditions affected by those levels.** It is crucial to keep in mind that trail conditions are impacted by both trail use and pre-existing resource conditions, however. For example, a trail may have been originally located in resource conditions so sensitive that the trail could never be sustainable under any level of use.

**Hiking trail design parameters should be used** as a starting point for determining the long-term suitability of existing trails. Subsequently, wherever sections of trails are determined to need rerouting, these should of course also be used during the new trail-section design and construction phases. The following eight hiking trail design parameters are proposed for use in the AP:

a. *Maximum Average Slope.* This is a critical component, the goal being to keep the trail's slope at, or below, 10%. In some cases, especially in the Adirondacks, the composition of local soils may require a lower percentage. By aiming for 10% maximum average slope for the entire trail, its tread is protected from erosion and the visitors' hiking experiences are more consistent than when they must repeatedly traverse steep grade changes followed by stretches of level terrain.

b. *Maximum Sustainable Grade.* This is the maximum running slope for any segment of the trail. As a rule, it should not exceed 15%. Soils or trail structures will influence how much it can exceed 10% while still minimizing degradation and allowing for the trail to be kept on the side of the mountain.

c. *Running Grade.* Concerning this parameter, the "Half Rule" states the running grade of a trail shouldn't exceed half of the side slope it is crossing. This allows for water to pass across the trail tread, preventing it from running down the trail and causing erosion. This rule must not be forgotten or ignored, even if a section of hillside has great soils for bench cutting and seems as though it could support increasing the trail tread above 10%.

d. *Full Bench Construction.* Wherever slopes and soils allow for it, full bench cuts should be the standard for trail building. The trail should be dug into the hillside, leaving undisturbed soils below the tread. While Adirondack soils may generally not be ideal for such practice, there are many places where it is possible. Failing to cut a full bench creates the risk of the trail tread sloughing off.

e. *Tread Surface Durability.* The surface of trails should consist of mineral soils or stone, allowing for the tread material to retain its shape and volume. This is in contrast to sections of trail that, when dry, seem as hard as a gravel road, but which have suffered such compaction that the tread is lower than the surrounding area; water pools on it or flows down it, consequently. As such trail sections experience traffic when wet, there is continuing displacement of tread soil, which, even if slow, gradually lowers the trail further and serves to increase the impact.

f. *Contour Curvilinear Alignment.* This is an alignment that "works" a trail across slopes, with the landscape, creating a more interesting route: one that doesn't feature long, straight sections and that provides many opportunities for water to drain off the trail. Such a trail features frequent **grade reversals**, as well; after a climb, the tread then drops (sometimes a few feet, sometimes only inches) to allow water from direct rainfall or sheet flow an opportunity to run off the trail rather than travel down it.

g. *Integrated Water Control.* This is the result of designing water management features into the trail construction effort from the beginning. It is essential, serving to help minimize the need for construction and placement of water control structures that require regular, routine maintenance and are points where impacts can be magnified on the trail if not maintained properly. Any structure that does need to be built to channel or control water should be set below the tread of trails under construction. Large stone and wood water bars, though commonly used, can actually become obstacles to Integrated Water Control.

h. *Environmental Integration.* This is an aesthetic characteristic, the objective being to have the trail blend in with the surrounding landscape.  This can be crucial, if a trail is to be a success in both helping protect the environment from visitor use while providing the opportunity for an optimal recreational experience.

## RECOMMENDED INDICATORS

General Trail Condition classes in five categories

| Class 1 | Trail Distinguishable: Minimal biological or physical impacts, slight loss of vegetation and/or minimal disturbance of organic litter. |
| --- | --- |
| Class 2 | Some Impacts: Trail obvious, slight loss of vegetation cover and/or organic litter pulverized in primary use areas, muddy spots or tree roots, or water action evident. |
| Class 3 | Moderate Impacts: Vegetation cover and/or organic litter pulverized within the center of the tread, exposed rocks and trees or small mud holes, but little evidence of widening beyond the maintained width of the trail. |
| Class 4 | Extensive Impacts: Near complete or total loss of vegetation cover and organic litter, rocks or tree roots exposed and roots damaged, or ruts more than 10 inches deep, or widening caused by muddy areas or water action consistently. |
| Class 5 | Very Extensive Impacts: Trail to bedrock or other substrate, or tree roots badly damaged, or some ruts more than 20 inches deep or large areas (over 50%) of bank erosion, or mud holes so extensive that the trail is outside of its maintained width. |

General Trail Suitability classes in five categories.

| Class 1 | Suitable with minimal maintenance: condition classes 1 or 2 and most physical design standards are good. |
| --- | --- |
| Class 2 | Suitable with moderate maintenance: condition classes 2 or 3 and most physical design standards are good or moderate. |
| Class 3 | Suitable with extensive maintenance: condition classes 3 or 4 and most physical design standards are good or moderate. |
| Class 4 | Suitable with moderate to extensive maintenance and some trail portions relocated: condition classes 2, 3 or 4 and most physical design standards are moderate. |
| Class 5 | Not suitable and entire trail segment requires relocation: condition classes 4 or 5 and most physical design standards are extreme. |

## RECOMMENDED STANDARDS

Trail Condition Class equal to 3 or less.

Trail Suitability Class equal to 3 or less.

## SUGGESTED ADDITIONAL RESOURCES

Connor, Tate. 2020. 2019 Giant Mountain Wilderness Trail Inventory Protocol 3. NYSDEC.

Marion, J. L., et al. 2011. Informal and Formal Trail Monitoring Protocols and Baseline Conditions: Acadia National Park. USDI, U.S. Geological Survey, Reston, Virginia.

Marion, J. L. 1991. Developing a Natural Resource Inventory and Monitoring Program for Visitor Impacts on Recreation Sites: A Procedural Manual. Natural Resources Report NPS/NRVT/NRR-91/06. USDA National Park Service, Denver, Colorado.

# Hiking Trail Conditions Monitoring Manual

**Preparations:**

- Collect and record information that is known about the trail's history, such as original construction, past uses, type and amount of maintenance, history of use, etc.
- Gather the following materials and equipment and make sure all equipment is working properly:

| Materials & Equipment | |
|---|---|
| ☐ This Manual | ☐ Measuring Wheel |
| ☐ Field Forms | ☐ GPS unit |
| ☐ Trail maps of the management unit | ☐ Camera |
| ☐ Driving Maps to get to the unit | ☐ Clinometer |
| ☐ Clipboard | ☐ Binder Clips |
| ☐ Tape Measure | ☐ Tablet or field computer to record information |

**Trail or Trail Segment Information**

The following information refers to the condition of specific trails or trail segments. Record the following information on the **Trail Conditions Monitoring Form.**

1. **Trail Code:**  Record a unique trail code for the management unit.

2. **Trail Name:**  Record the trail segment name(s).

3. **Inventoried By:**  Record the names of the trail survey crew.

4. **Date:** Record the Day, Month, and Year the trail was surveyed.

5. **Starting/Ending Point:** Record a brief description of the starting and ending point of the trail survey.  Try to choose identifiable locations like the center of intersections with other trails, roads, or permanent trailhead signs.  Record a GPS waypoint for starting and ending points.

6. **Use Level:** Record an estimate of the amount of annual use the trail receives relative to other forest trails from the most knowledgeable staff member.

7. **Type of Use:** Record the primary type of use the trail receives (including any illegal uses). This should be the use type that has the largest impact on the trail (For example, a trail that allows hiking and horseback riding would be recorded as a combined hiking and horseback trail).

8. **Length:** Measuring wheel distance (ft) from the beginning to the end of the trail or trail segment surveyed.

9. **Grade:** Record the starting point and ending point of any section of a segment that is 10 degrees or greater in grade.

10. **Trail in Waterway Drainage:** Record the starting point and ending point of any section of a trail that is within the natural drainage bed of any waterway, so that the trail is concurrent with or within that drainage feature.

11. **Drainage Dip and Water Bars:** Record the location of each drainage dip or water bar (drainage crossing a trail) encountered using the measuring wheel and categorize it as one of the following classes.
    - *Ineffective:* does not redirect any water
    - *Partially effective:* redirects some water but some water still flows over and erodes soil.
    - *Effective:* completely redirects the flow of water off the trail

12. **Muddy Soil:** Record the starting point and ending point of any section of a trail that is ten feet or greater in length with seasonal or permanently wet and muddy soils that show imbedded footprints greater than two inches deep. Omit temporary muddiness created by recent rain.

13. **Soil Erosion:** Record the starting point and ending point of any section of a trail that is ten feet or greater in length with mineral soil erosion generally exceeding two inches in depth (not including organic litter) within the current tread boundaries. Categorize the soil erosion as one of the following classes.
    - *Slight:* Soil erosion is 2 – 5 inches in depth
    - *Moderate:* Soil erosion is 5.1 – 10 inches in depth
    - *Severe:* Soil erosion is 10.1 – 30 inches in depth

14. **Tread Width:** Record the location of any excessive width of trail (beyond maintained width) encountered and categorize it as one of the following classes.
    - *Slight:* width is 5 – 10 inches greater than maintained width
    - *Moderate:* width is 10.1 – 30 inches greater than maintained width
    - *Severe:* width is 30.1 inches or more greater than maintained width

15. **Informal and Braided Trails:** Record the location of each informal or braided trail that visitors have created to access features such as streams, scenic attraction sites, cliffs, vistas, cultural sites, or to cut switchbacks, avoid mud-holes, rutted trails, steep obstacles, or downed trees, or that simply parallel the main trail.

16. **Trail Condition Class:** Use the following condition classes to assess the trail or trail segment for its general condition.  This is to be assessed and recorded after surveying has been completed for a particular trail or trail segment.

| Class 1 | Trail Distinguishable: Minimal biological or physical impacts, slight loss of vegetation and/or minimal disturbance of organic litter. |
|---|---|
| Class 2 | Some Impacts: Trail obvious, slight loss of vegetation cover and/or organic litter pulverized in primary use areas, muddy spots or tree roots, or water action evident. |
| Class 3 | Moderate Impacts: Vegetation cover and/or organic litter pulverized within the center of the tread, exposed rocks and trees or small mud holes, but little evidence of widening beyond the maintained width of the trail. |
| Class 4 | Extensive Impacts: Near complete or total loss of vegetation cover and organic litter, rocks or tree roots exposed and roots damaged, or ruts more than 10 inches deep, or widening caused by muddy areas or water action consistently. |
| Class 5 | Very Extensive Impacts: Trail to bedrock or other substrate, or tree roots badly damaged, or some ruts more than 20 inches deep or large areas (over 50%) of bank erosion, or mud holes so extensive that the trail is outside of its maintained width. |

## HIKING TRAIL DESIGN PARAMETERS

**17. Maximum Average Slope:**
- *Good:* average slope less than 10%
- *Severe steepness:* average slope greater than 10%

**18. Maximum Sustainable Grade by Section:**
- *Good:* no section with slope greater than 15%
- *Some steep sections:* several sections with slope greater than 15%
- *Severe steepness:* numerous sections greater than 15%

**19. Running Grade:**
- *Good:* no section exceeds half the side slope being crossed
- *Some steep sections:* several small areas exceed half the side slope being crossed
- *Severe steepness:* numerous sections exceed half the side slope being crossed

**20. Full Bench Construction:**
- *Good:* bench construction most often used
- *Some bench construction:* several small areas with bench construction not used
- *No bench construction:* bench construction generally not used

**21. Tread Surface:**
- *Good:* generally durable tread surface
- *Moderate erosion of tread:* several small areas without durable surface
- *Severe potential erosion of tread:* generally, no durable surfaces

**22. Contour Curvilinear Alignment (Grade Reversals):**
- *Good:* has good alignment across slopes
- *Moderate:* several small areas without good alignment across slopes
- *Extreme:* generally lacking in trail grade reversals

**23. Integrated Water Control:**
- *Good:* water control built into trail design
- *Moderate:* several small areas without good water control design
- *Extreme:* generally lacking in water control design

**24. Environmental Integration:**
- *Good:* blends in with landscape

- *Moderate:* generally, blends in with landscape
- *Extreme:* most often does not blend in with landscape

25. **Trail Suitability Class:** Use the following suitability classes to assess each trail or trail segment. This is to be assessed and recorded after condition class and trail design standards have been completed for a particular trail or trail segment.

| Class 1 | Suitable with minimal maintenance: condition classes 1 or 2 and most physical design standards are good. |
|---------|----------------------------------------------------------------------------------------------------------|
| Class 2 | Suitable with moderate maintenance: condition classes 2 or 3 and most physical design standards are good or moderate. |
| Class 3 | Suitable with extensive maintenance: condition classes 3 or 4 and most physical design standards are good or moderate. |
| Class 4 | Suitable with moderate to extensive maintenance and some trail portions relocated: condition classes 2, 3 or 4 and most physical design standards are moderate. |
| Class 5 | Not suitable and entire trail segment requires relocation: condition classes 4 or 5 and most physical design standards are extreme. |

# Appendix C: Trail Use Estimation

## INTRODUCTION

The APSLMP requires all UMPs to include an inventory of public use.  Although a census of visitor use is preferred to best plan visitor management, an estimation of visitor use is more practical given available budgets and staff workload. The main approach in accurately estimating visitor use is to install electronic trail counters near trail registers to determine visitor self-registration compliance as a way to adjust trailhead register data to more accurately represent actual visitor use.  Compliance is defined as the percentage of visitors who actually do sign in at the voluntary self-registration points.  Compliance estimation includes comparing the number of visitors who signed the register book with the number of visitors recorded by the electronic trail counter.

Different types of electronic counters are available to count individuals on foot, bikes, skis, horseback, or motorized vehicles on wildland trails and roads.  These include:

1. Active infra-red counters, which have two parts: senders that emit a non-visible infra-red beam pulse, and receivers or reflectors.  The beam pulse is set at a frequency determined by what type of use is to be counted and manufacturers' instructions, and the counter is advanced when the beam pulse is interrupted.
2. Passive infra-red counters, which are single units with sensors that detect changes in infrared energy (warm objects moving by the sensor), triggering cameras to record the event.
3. Magnetometer counters, which are single units with sensors that detect metal vehicles and can be placed within a roadbed, as well as alongside a road or trail.

The past use of pressure plates and seismic detectors has been generally discontinued due to difficulties in maintenance of the equipment and obtaining reliable counts of trail users.  New electronic technology may become available that can be used to count individuals and vehicles on trails and roads and that will operate unobtrusively, with reliability and low cost.

## STATEMENTS OF DESIRED CONDITIONS

UMPs are required by the APSLMP to include: "*an inventory of the types and extent of actual and projected public use of the area*".  The desired use level from occasional to

very high use should take into consideration the land classification, classification definition, and appropriate and intended level of trail development for primitive, secondary, and primary trails. Your statements of desired conditions for the amount or level of visitor use on trails and roads might well include some unique, site-specific details.

The types of trails and definitions provided by the APSLMP are generally defined as follows:

- *Foot Trail -- a marked and maintained path or way for foot travel located and designed to provide for reasonable access in a manner causing the least effect on the surrounding environment.*
- *Bicycle Trail -- a marked trail, designated for travel by bicycles, located and designed to provide access in a manner causing the least effect on the local environment.*
- *Cross Country Ski Trail – a marked and maintained path or way for cross country ski or snowshoe travel, which has the same dimensions and character and may also serve as a foot trail, designed to provide reasonable access in a manner causing the least effect on the surrounding environment and not constructed, maintained or groomed with the use of motor vehicles.*
- *Horse Trail -- a path marked and maintained for travel by horses, located and designed to provide for reasonable access in a manner causing the least effect on the local environment.*
- *Rail Trails -- trails developed within a railroad corridor where tracks have been removed to accommodate modes of travel other than rail car, including snowmobiles, horses and bicycles, but excluding public use of ATVs, automobiles, and other motor vehicles.*
- *Snowmobile Trail -- a marked trail of essentially the same character as a foot trail designated by the Department of Environmental Conservation on which, when covered by snow and ice, snowmobiles are allowed to travel and which may double as a foot trail at other times of year.*

**Visitor use information should be used in conjunction with information collected with Appendix A: Hiking Trail Conditions to better understand the relationship between level of visitor use and related trail conditions affected by visitor use levels.** Trail conditions are impacted by both trail use and by pre-existing resource conditions. For example, a trail may have been originally located in resource conditions so sensitive that the trail could never be sustainable under any level of use.

## RECOMMENDED INDICATORS

The "Trail Use Estimation Monitoring Manual" presented in this appendix will guide you through a standard process of inventorying visitor use on trails and roads, which will include collecting data on level of use indicators for various types of trails.  The types of use estimation listed below are considered the most basic for wildlands monitoring efforts in the Adirondack Park, so they are recommended for inclusion where appropriate to each unit:

Daily use  /  Weekend use  /  Weekday use  /  Seasonal use

## RECOMMENDED STANDARDS

The prescribed standards for each indicator and each type of trail must be defined differently depending on the land classification and desired conditions for a UMP. Standards are typically stated as a limit of use not to be exceeded in the majority (80%) of times measured. Thus, standards will vary for such conditions as whether the trail is intended to be a primary, secondary, or occasionally used trail within the UMP.

Table 1. Indicators and standards for monitoring conditions at multiple trails within a **Wilderness, Primitive, or Canoe Area**.

| Indicator | Standard |
|---|---|
| Daily use | Foot Trail use not to exceed ….. <br><br> Cross Country Ski Trail use ….. <br><br> Horse Trail use ….. |
| Weekend use (as subset of Daily use) | Foot Trail use ….. <br><br> Cross Country Ski Trail use ….. <br><br> Horse Trail use ….. |

| | |
|---|---|
| Weekday use (as subset of Daily use) | Foot Trail use …..<br><br>Cross Country Ski Trail use …..<br><br>Horse Trail use ….. |
| Seasonal use | Foot Trail use …..<br><br>Cross Country Ski Trail use …..<br><br>Horse Trail use ….. |

Table 2. Indicators and standards for monitoring conditions at multiple trails within a **Wild Forest.**

| Indicator | Standard |
|---|---|
| Daily use | Foot Trail use not to exceed …..<br><br>Cross Country Ski Trail use …..<br><br>Horse Trail use …..<br><br>Bicycle Trail use….<br><br>Rail Trail use….<br><br>Snowmobile Trail use….. |
| Weekend use | Foot Trail use …..<br><br>Cross Country Ski Trail use ….. |

| | Horse Trail use ….. |
| | Bicycle Trail use…. |
| | Rail Trail use…. |
| | Snowmobile Trail use….. |
| Weekday use | Foot Trail use ….. |
| | Cross Country Ski Trail use ….. |
| | Horse Trail use ….. |
| | Bicycle Trail use…. |
| | Rail Trail use…. |
| | Snowmobile Trail use….. |
| Seasonal use | Foot Trail use ….. |
| | Cross Country Ski Trail use ….. |
| | Horse Trail use ….. |
| | Bicycle Trail use…. |
| | Rail Trail use…. |
| | Snowmobile Trail use….. |

## SUGGESTED ADDITIONAL RESOURCES

Watson, A. E., Cole, D.N., Turner, D. L., & Reynolds, P. S. (2000). Wilderness Recreation Use Estimation: A Handbook of Methods and Systems. General Technical Report RMRS-GTR-56. Ogden, UT: USDA Forest Service, Rocky Mountain Research Station.

# Trail Use Monitoring Manual

**Planning**

Visitor use estimation should be conducted in a single season and with some separate measures for weekdays and weekend days due to the high variation between these segments of the week. Recommended dates for high-use summer visitor use estimation are between June 1 and November 1.  Data collection from trail register sheets and electronic trail counters can be completed in any kind of weather; however, data entry using a touch pad in rainy conditions is difficult.

The time of day and day of the week to record trail register sheets and electronic trail counters depends on several different factors, including: whether collecting trail counter data alerts visitors passing by to the use and location of the equipment and whether the trail register station is congested with visitors signing in and out of the register sheets. An experienced person or a pair of a people who have completed numerous data collection sessions can complete a trail counter download within 5-10 minutes. However, recording the trail register information depends on how many sheets are complete (visitors have checked back out) and can be removed versus those that are not complete and need to be hand tallied or the sheets photographed for later tally. *The trail counter data must be collected at the same time as the register sheets so that direct comparisons can be made for the same dates.*

## Before Field Installation of Trail Counters

**Preparation**

Identify the locations of the trailheads that require a visitor-use estimation and develop a plan to visit these sites, for example: put together driving directions, print a map of the area, and check the weather conditions for the date of the site visit. In addition, organize the field visit logistics, for example: sign out a vehicle, put together a backpack of personal equipment (e.g. rain gear) needed to be in the field, and identify which trailheads you will use for estimation.

Trailer counter installation requires careful consideration on placement to obtain accurate count results:

- Are there trails that are narrow enough to force single-file travel? If the trail is wide enough for two or more people to consistently walk side by side, your counter will not catch every visitor.
- Travel patterns (one way or round trip) at trail head affect whether visitors are counted once or twice by the counter. (Trail register information about destinations will help sort out this factor.)
- Counters should be more than 100 feet from the trail register but not more than ¼ mile.
- Counters placed in obvious locations increase the potential for vandalism, tampering, or theft.  Camouflage helps to disguise counters but placement is also important.

## Hardware and equipment preparation

Prior to the beginning of field work, obtain the following:

- ☐ Electronic Trail counter such as active infra-red trail monitor and instructions for installation and use.
- ☐ Electronic Trail counter downloading microcomputer, connection cables, and instructions for downloading.
- ☐ Nylon web straps and sheet metal screws (and washers) to fasten the trail counter to a tree.
- ☐ Rechargeable drill with screw drivers to fasten counter and webbing to a tree.
- ☐ Camouflage material and tape to cover the trail counter
- ☐ Smart phone, or tablet
- ☐ Range Finder with ability to measure distances, height, and azimuth Range Finder User's Manual
- ☐ Camera with built in GPS and electronic compass features
- ☐ Maps of the area
- ☐ Clipboard to note location of the trail counters relative to the trail register
- ☐ Extra batteries (e.g. for range finder, camera, and trail counters)
- ☐ Pencils
- ☐ Tape measure

**Software preparation**

Be sure that both field-monitoring software, Adirondack Forest Preserve Trail Counter Site Survey, and trail counter download software have been downloaded onto the smart phone or tablet.

## Day of Field Installation

Before leaving for your site visit, be sure you have the materials previously listed. Upon arrival at the tent site, complete the following procedures:

## Monitoring Procedures

Turn on the smart phone. Open the field monitoring software application. Open the Adirondack Forest Preserve Trail Counter Site survey.

Enter the following information:

## User Information

Inventoried By: Select the field technician surveying the site.

## General Information

Date: No action necessary. This will automatically populate.

Time: No action necessary. This will automatically populate.

## Trailhead Location Information

Stand at the trailhead register. Click "Collect."

Latitude: No action necessary. This will automatically populate.

Longitude: No action necessary. This will automatically populate.

Horizontal Accuracy (hdop): No action necessary. This will automatically populate.

Altitude: No action necessary. This will automatically populate. This may take a minute, but you can skip and continue to add.

Select the land classification the trailhead is located in.

Select the management area the trailhead is located in (e.g., High Peaks Wilderness).

If available, identify the trailhead name.

Select type of trail (hiking, skiing, horseback, etc.).

**Counter Installation Information**

Counter <u>site</u> <u>selection</u>:

- At least 100 feet from the trail register but not more than ¼ mile.
- Where trail narrows to single file for visitors.
- Where trail is relatively straight or goes up or down hill and visitors are not as likely to be looking to the sides of the trail and see counters.
- Away from where visitors may mill about or cause multiple counts of the same person (e.g. pit toilets, parking lots, boat access sites, campsites along the trail, resting areas along the trail).
- With natural vegetation cover to hide the counter.
- Where trees are of sufficient number and size on each side of the trail to allow accurate and stable placement during windy conditions.

Counter placement <u>along the trail</u>:

- Approach in a way to minimize impacts of footprints and trampled vegetation that draw attention to the equipment placement.
- Put each counter component (sender/receiver) about 30-40 feet off trail on opposite sides on solid trees that will not move in windy conditions.
- Choose trees that do not have wildlife nests, deer trails nearby, etc.

Counter placement <u>on the tree</u>:

- Do not place the counter where it will receive direct sunlight.

- Make sure you have a direct path from the sender to the receiver without needing to remove substantial amounts of vegetation that could move between the counter components.
- Place sender and receiver units at about the same height (perpendicular to a vertical line)
- Make sure the infra-red light beam is about 48" above the trail tread. Stretch a tape measure or other line tightly from sender to receiver and measure the height of the tape where it crosses the trail.
- Use screws, washers and nylon webbing to fasten counter components. Run the webbing through the back of the component and screw the webbing to the tree after the placement has been decided adjusting placement as necessary. Be sure to cut off extra webbing.
- Use camouflage cloth to cover counter installation and fasten with screws. Make sure camouflage does not block infra-red beam.

## Trail Counter Location Information.

Stand at the selected trail counter location (where the beam from the counter intersects the trail). Click "Collect."

Latitude: No action necessary. This will automatically populate.

Longitude: No action necessary. This will automatically populate.

Horizontal Accuracy (hdop): No action necessary. This will automatically populate.

Altitude: No action necessary. This will automatically populate. This may take a minute, but you can skip and continue to add.

Photograph the trail counter receiving and sending units on each side of the trail from the trail to aid in later location.

## Testing and Calibration.

Test counter accuracy by:

- Walking through the infra-red beam at different speeds on the trail.
- Observing visitors for several minutes and check counter numbers against actual observed numbers.

- Walking through the line-of-infra-red beam "corridor" where vegetation was removed and check that no limbs or leaves will blow into the path of the beam.
- Adjust the infra-red beam pulse as necessary for manufacturer's instruction for event speed, etc. The beam pulse is set at a frequency determined by what is to be counted and the manufacturer's instruction. For estimating visitor use when hiking, the beam pulse value is typically set for ¼ of a second to be recorded as an event. This value may need to be adjusted after calibration when visitors may travel at different speeds with different equipment and activities, which is discussed in the Active Infra-Red Trail Counter installation and use manual.

## Day of Data Collection

**Data Collector**

Download data from the trail counter onto the data collector using the connecting cables at least once a week. Check that data has downloaded from the counter to the collector before deleting it from the counter.

Check battery strength and charge. Replace batteries as necessary.

Inspect the counter installation area to ensure no vegetation has grown into the area that will interfere with the active infrared beam. Remove any vegetation in the beam's path.

Check for any problems with the counter installation or concealment. Repair as needed.

**Trailhead Register**

Remove any trailhead register sheets that are completed since the last data collection.

Photograph trailhead register sheets that are not complete (visitors still to return to check out).

## Data Review and Analysis

Transfer data from collector unit to office computer and look at event dates and times to make sure that numerous events are not being logged in a short period of time due to wind, fog, heavy rain, or other events that could block the infra-red beam and cause inaccurate visitor counts. If necessary, return to the field to ascertain what is causing the rapid events and make corrections to the situation.

Compile daily counter data with trailhead register data by date to be able to compute visitor compliance with self-registration and to estimate daily use. Compile daily tallies to compute weekend and weekday daily averages and seasonal totals.

Compare the resulting trail use information with the standards as specified by trail type for the UMP.

# Appendix D: Visitor Experience

**INTRODUCTION**

Management of recreational activity on State lands in the Adirondack Park calls for your consideration of visitor experiences - and a commitment to try to ensure these experiences are well suited to each land area and can remain so into the future. The key factors that influence visitor experiences are: area management activity; natural resource conditions; and visitor interactions with other visitors - the last being less familiar to managers and, therefore, more challenging to understand and try to control.

While building a respectably accurate understanding of visitor experiences in any particular area is certainly a challenge, it is vital to the visitor use management plan. It consists largely of developing some knowledge of the levels of use and how these levels are related to the amount and types of visitor-to-visitor encounters that typically occur and that you find actually are occurring. Additionally, it requires developing knowledge about certain negative interactions and behaviors (e.g., crowding, conflict, or coping and avoidance) and how they, if they are occurring, represent a degradation of visitor experiences.

**STATEMENTS OF DESIRED CONDITIONS**

People are social beings. It is known, however, that the types of recreational experiences we can have in wild areas – distant from most (if not all) other people and everyday social norms, while in the close presence of so much other life – can be significant and fulfilling for a person of virtually any age. The importance of preserving conditions regarded as <u>conducive</u> to such experiences should be an important focus of planning for State lands in the Adirondacks - this being expressed unambiguously within the APSLMP's most general, yet strongest piece of management guidance:

> *Human use and enjoyment of those lands should be permitted and encouraged, so long as the resources in their physical and biological context as well as **their social or psychological aspects** are not degraded.*

It is commonly the case that visitor-to-visitor interactions are the primary determining factor regarding whether the sought-after wildland recreational experience has met visitor expectations. When human use reaches such levels that the visitor experience becomes significantly diminished, it can be said that "social carrying capacity" (a somewhat dated term used in the APSLMP) has been exceeded.  Consequently, the APSLMP requires UMP's to include:

- *an assessment of the impact of actual and projected public use on the resources, ecosystems and public enjoyment of the area with particular attention to portions of the area threatened by overuse; and,*
- *an assessment of the physical, biological and social carrying capacity of the area with particular attention of portions of the area threatened by overuse in light of its resource limitations and its classification under the master plan.*

These two directives, while generalized, sufficiently highlight the need to assess and plan future management of visitor experiences during UMP development.  This will require you to develop statements of desired conditions that are specific to each particular land area; primarily, this means they should clearly and consistently reflect the APSLMP's land classification category for the area

## RECOMMENDED INDICATORS

The "Visitor Experience Monitoring Manual" presented in this appendix will guide you through a standard process of collecting information on visitor experiences.  The five categories of visitor information listed below should be considered the most basic ones, on which most monitoring efforts conducted in the Adirondacks should be focused.  The wealth of information collected will help you identify and measure conditions and situations that are known to degrade visitor experiences, and it should also prove very practical to you as you formulate proposed visitor-experience management actions.

1. **Number and type of visitor-to-visitor encounters and interactions** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and other specific facilities or sites.
2. **Amount and location of visitor crowding** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and other specific facilities or sites.
3. **Amount of visitor-to-visitor conflict** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and

other specific facilities or sites. Another way to measure conflicts is whether visitors have changed their travel plans, selected campsite, travel dates, etc. to cope with or avoid conflict and crowding with other visitors.

4. **Visitor preferences for management rules and regulations** (group size, length of stay, etc.) as appropriate to the unit classification.
5. **Visitor preferences for resource conditions** (no litter, no human waste, etc.) especially for obvious impacts by visitors.

**Visitor experience information should be used in conjunction with information collected about the estimates of visitor use as described in "Appendix C: Trail Use Estimation" to better understand the relationship between level of visitor use and related visitor experiences.**

## RECOMMENDED STANDARDS

The prescribed standards for each indicator and each type of trail must be defined differently depending on the land classification and desired conditions for a UMP. Standards are typically stated as a limit of use not to be exceeded in the majority (80%) of times measured. Thus, standards will vary for such conditions as whether the trail is intended to be a primary, secondary, or occasionally used trail within the UMP.

Table 1. Indicators and standards for monitoring visitor experiences within a **Wilderness, Primitive, or Canoe Area**.

| Indicator Type | Indicator and Standard |
|---|---|
| Number and type of visitor-to-visitor encounters and interactions | 90% or more visitors reporting less than 10 other groups encountered per day while hiking on trails. |
| Amount and location of visitor crowding | 10% or less visitors reporting feeling crowded or very crowded per day. |
| Amount of visitor-to-visitor conflict | 90% or more visitors reporting no conflicts with other visitors per day. |

| | |
|---|---|
| Visitor preferences for management rules and regulations | 80% or more of visitors neutral, supporting, or strongly supporting a rule or regulation. |
| Visitor preferences for resource conditions | 10% or less visitors reporting no dissatisfying conditions while hiking. |

Table 2. Indicators and standards for monitoring visitor experiences within a **Wild Forest.**

| Indicator | Standard |
|---|---|
| Number and type of visitor-to-visitor encounters and interactions | 80% or more visitors reporting less than 20 other groups encountered per day while hiking on trails. |
| Amount and location of visitor crowding | 20% or less visitors reporting feeling crowded or very crowded per day. |
| Amount of visitor-to-visitor conflict | 80% or more visitors reporting no conflicts with other visitors per day. |
| Visitor preferences for management rules and regulations | 80% or more of visitors neutral, supporting, or strongly supporting a rule or regulation. |
| Visitor preferences for resource conditions | 20% or less visitors reporting no dissatisfying conditions while hiking. |

SUGGESTED ADDITIONAL RESOURCES

Manning, Robert E. (2010). Studies in Outdoor Recreation: Search and Research for Satisfaction (3rd edition). Corvallis, OR: Oregon State University Press.

# Visitor Experience Monitoring Manual

## Planning

Information about visitor experiences can be gathered by means of self-reported visitor experience surveys using onsite or mail questionnaires. Each method has its strengths (e.g., lower cost, smaller data set, less staff time needed, etc.) and weaknesses (e.g., higher cost, more data points, more accurate date, etc.). The information collected from visitors requires development of scientifically rigorous survey protocols, sampling approaches, and data collection and analysis plans. Visitor surveys should be either conducted: (a) **on site** at the end of a visitor trip to measure immediate reactions of visitors to existing conditions and experiences, or (b) **by mail** to visitors known to use that management unit (i.e., using on site contacts, trailhead registers) within that month or season.

Surveys are used because they provide a more uniform and structured approach to gathering visitor information to ensure that visitors all have the questions asked of them in a similar format and presentation. Interviews are not recommended due to the need for an interviewer to be highly trained to prevent biases and the interview process is a more expensive and time-consuming methodology. Surveys using questionnaires with online websites are not considered representative because the sample is not controlled and biases are unknown.

Surveys once developed can be used on site in either a printed version handed out as printed questionnaires on clip boards for visitor completion on site or using tablets that can allow the visitor to enter their responses and have the data recorded for later downloading and analysis. The person requesting the visitor to complete a survey works with a prepared script to engage the visitors and ensure a high response rate for good representation of the visitors being surveyed.

Mail surveys require more preparation and follow-up to ensure a good response rate to correctly represent the visitor population being surveyed. Mail surveys require the use of a cover letter with the questionnaire to explain the reason for the survey and the need for visitor input to management and a stamped, self-addressed envelope to return the completed questionnaire. After a two to three-week time period, reminder letters need to be sent to non-respondents re-emphasizing the need for and importance of visitor input for management (that is, survey completion and return).

**Preparation**

Identify the visitor population from which input is needed and the most effective and efficient way to engage those visitors in completing a questionnaire – on-site questionnaires or mail questionnaires.

Identify the visitor-related situations and issues for which information is needed for visitor management.

1. Number and type of visitor-to-visitor encounters and interactions
2. Amount and location of visitor crowding
3. Amount of visitor-to-visitor conflict
4. Visitor preferences for management rules and regulations
5. Visitor preferences for resource conditions

The following examples are the types of questions that can be asked to measure experiences, and the questions can be expanded by adding in more lines with examples that could be managed to improve the visitor experience. The recreation activities, facilities, resources, and management situations present in each Forest Preserve Management Unit may require modification of the questions asked of visitors.

**Number and type of visitor-to-visitor encounters and interactions** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and other specific facilities or sites.

*Example: Overall, how many other groups on your trip in the [name] management unit **did you encounter** (circle a number)?  How many other groups on your trip in the [name] management unit **would you find acceptable to encounter** (circle a number)?*

| Encounters Experienced | None | | Can not specify |
|---|---|---|---|
| On trail | 0 | 1 2 3 4 5 6 7 8 9 10    11 or more | ❏ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At campsites | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or more | ❑ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At scenic overlooks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or more | ❑ |

**Encounters Acceptable** ———————————→

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| On trail | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or more | ❑ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At campsites | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or more | ❑ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At scenic overlooks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or more | ❑ |

*Example: If you encountered other groups on your trip in the [name] management unit, was it the number of other groups you expected to experience?*

| Location of encounters with other groups: | No encounters with other groups | Far fewer | Fewer | Same | More | Far more |
|---|---|---|---|---|---|---|
| On trail | ❑ | -2 | -1 | 0 | 1 | 2 |
| At campsites | ❑ | -2 | -1 | 0 | 1 | 2 |
| At scenic overlooks | ❑ | -2 | -1 | 0 | 1 | 2 |
| Other locations? (Explain: _____) | ❑ | -2 | -1 | 0 | 1 | 2 |

**Amount and location of visitor crowding** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and other specific facilities or sites. Crowding is measured by self-reported visitor perceptions of the number and density of other visitors; physical, sight and sound proximity of other visitors; and perception of crowding based on past experience or motivations.

*Example: Overall, did you feel physically crowded by other visitors during your trip to the [name] unit? A series of situations that may have detracted from your experience today in your campsite area are listed below. If you did not encounter a situation then circle zero. Otherwise, rank the seriousness of the situation by circling the appropriate number.*

| Potential Crowding Situations | Not A Problem | Slight Problem | | | | Serious Problem |
|---|---|---|---|---|---|---|
| Too many people camping in this area | 0 | 1 | 2 | 3 | 4 | 5 |
| Too many people hiking on these trails | 0 | 1 | 2 | 3 | 4 | 5 |
| Too many people at overlooks and resting areas on trails | 0 | 1 | 2 | 3 | 4 | 5 |
| Too many people at access trailhead and parking lots | 0 | 1 | 2 | 3 | 4 | 5 |
| Other situation? (Explain: _____) | 0 | 1 | 2 | 3 | 4 | 5 |

**Amount of visitor-to-visitor conflict** (# of people nearby per day, per hour, per trip) on trails, at campsites, at scenic vista points, at water access, and other specific facilities or sites.

*Example: If you encountered interference in enjoying or carrying out your recreation activities in the [name] management unit, who or what caused that conflict in achieving your motivations for having a satisfying trip experience?*

| Conflict caused by: | No problem encountered | Slight interference | Moderate interference | Extreme interference |
|---|---|---|---|---|
| Recreational users engaged in the same activities as mine **on shore** | 0 | 1 | 2 | 3 |
| Recreational users engaged in the same activities as mine **on the water** | 0 | 1 | 2 | 3 |
| Recreational users engaged in different activities from mine **on shore** | 0 | 1 | 2 | 3 |
| Recreational users engaged in different activities from mine **on the water** | 0 | 1 | 2 | 3 |
| Other conflict? (Explain: _____) | 0 | 1 | 2 | 3 |

Another way to measure conflicts is whether visitors have changed their travel plans, selected campsite, travel dates, etc. to cope with or avoid conflict and crowding with other visitors.

Perceived or real conflicts such as (1) intra-activity conflicts, (2) inter-activity conflicts, (3) conflict between recreation visitors and other types of users, (4), conflict between recreation visitors and management, and (5) conflicts in values between different types of users.  Stress and coping with dissatisfying conditions from non-normative behavior or depreciative behavior of other visitors, conditions of facilities and management, and conditions of resource setting.

*Example: If you encountered dissatisfying experiences on your trip in the [name] management unit, what were you likely to do or did you do?*

| Actions taken or to be taken: | No dissatisfying experiences | Very Unlikely | Unlikely | Neutral | Likely | Very Likely |
|---|---|---|---|---|---|---|
| Ignored the problem or tried not to think about it | ❑ | -2 | -1 | 0 | 1 | 2 |
| Addressed the people responsible to attempt to change their behavior | ❑ | -2 | -1 | 0 | 1 | 2 |
| Accepted the dissatisfying experience as part of that management area experience | ❑ | -2 | -1 | 0 | 1 | 2 |
| Avoided the dissatisfying experience during the trip as much as possible | ❑ | -2 | -1 | 0 | 1 | 2 |
| Changed travel plans (location or length of stay) during the trip in that management area to get away from the dissatisfying experience | ❑ | -2 | -1 | 0 | 1 | 2 |
| Other action? (Explain: _____) | ❑ | -2 | -1 | 0 | 1 | 2 |

**Preferences for management rules and regulations** (group size, length of stay, etc.)
as appropriate to the unit classification.

*Example: Given the conditions you experienced in the [name] management unit, please
rate how much you favor or oppose the following possible management techniques in
this area. (Circle one response for each management technique.)*

| Potential Management Actions: | Strongly oppose | Oppose | Neutral | Favor | Strongly Favor |
|---|---|---|---|---|---|
| Develop new campsites, which would give you more site options, but may encourage more people to use the area. | -2 | -1 | 0 | 1 | 2 |
| Require camping only at designated sites, which would keep the whole area natural, but might prevent you from camping during peak use periods. | -2 | -1 | 0 | 1 | 2 |
| Limit the size of camping groups to 8 people. | -2 | -1 | 0 | 1 | 2 |

**Preferences for resource conditions** (no litter, no human waste, etc.) especially for
obvious impacts by visitors. Satisfying and dissatisfying experiences such as campsite
separation in sight and sound, screening from sight of others, evidence or absence of
other visitor impacts on the setting, and naturalness of resource conditions.

*Example: A series of situations that may have detracted from your <u>experience today in</u> <u>your campsite area</u> are listed below. If you <u>did not</u> encounter a situation then circle zero. Otherwise, rank the seriousness of the situation by circling the appropriate number.*

| Detracting Situations | Not A Problem | Slight Problem | | | | Serious Problem |
|---|---|---|---|---|---|---|
| Human impacts to campsite (litter, tree damage, etc.) | 0 | 1 | 2 | 3 | 4 | 5 |
| Campsite attractiveness (site does not look nice) | 0 | 1 | 2 | 3 | 4 | 5 |
| No privacy in the campsite (no screening vegetation) | 0 | 1 | 2 | 3 | 4 | 5 |
| Nearby campsites too close to my campsite | 0 | 1 | 2 | 3 | 4 | 5 |
| Other situation? (Explain:_____) | 0 | 1 | 2 | 3 | 4 | 5 |

## Social Indicators of Visitor Experiences

Developing indicators and standards depends on the UMP classification and the UMP planning situation and analysis for that unit.

Table 2. Six types of information and related indicators and standards for management.

| Information type | Indicator | Standard |
|---|---|---|
| 1) Amount of visitor use | Number of visitors per day | Wilderness: ? or less<br><br>Wild Forest: ? or less |
| 2) Visitor-to-visitor encounters/interactions (while recreating on trails, waterways, etc.) | Number of other groups encountered per day | Wilderness: ? or less<br><br>Wild Forest: ? or less |
| 3) Visitor crowding (at access, campsites, rest areas, scenic vistas, at campsites or other facilities, etc.) | Percentage of visitors reporting feeling crowded or very crowded per day | Wilderness: ? or less<br><br>Wild Forest: ? or less |
| 4) Visitor-to-visitor conflicts | Percentage of visitors reporting no conflicts with other visitors per day | 95% or more |
| 5) Preferences for management approaches | Percentage of visitors neutral, supporting, or strongly supporting | 80% or more |
| 6) Preferences for resource conditions especially related to impacts by visitors | Percentage of visitors reporting no dissatisfying conditions | 80% or more |

**Questionnaire Preparation**

- ❑ Develop the survey questionnaires content
- ❑ Review and test on co-workers and knowledgeable recreationists to clarify content and directions
- ❑ Decide whether a printed questionnaire or tablet-based data collection
- ❑ Format questionnaire for printing (fill-in or scannable format) or tablet software
- ❑ Develop an introductory script for on-site or cover letter for mail survey process

**Survey Process Preparation**

- ❑ Printed on-site questionnaires or tablet-based questionnaire software
- ❑ Clipboards and black pens or tablets and styluses
- ❑ Introduction script to engage visitors for survey
- ❑ Map of survey locations
- ❑ Timetable and locations for conducting intercepts of the visitors
- ❑ Sample size needed

*[this will require different lists and explanations for on-site printed, on-site tablet and mail surveys]*

**Data Preparation and Analysis**

- ❑ Return rate and final sample size considerations
- ❑ Handling incomplete questionnaires
- ❑ Data entry and software used for analysis

# Appendix E: Ecological Integrity