United States
Department
of Agriculture

Forest
Service

**Eastern
Region**

R9-FL-ME
Report

November
2013

Finger Lakes National Forest

Annual Monitoring and Evaluation Report

Fiscal Years 2012 & 2013

Hector Ranger District Station – Hector, NY

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the State or local Agency that administers the program or contact USDA through the Telecommunications Relay Service at 711 (voice and TTY). Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Mail Stop 9410, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Table of Contents

Annual Monitoring and Evaluation Report
Fiscal Years 2012 and 2013

Finger Lakes National Forest

USDA Forest Service, Eastern Region
November 2013

This Annual Monitoring and Evaluation Report combines monitoring completed in fiscal years 2012 and 2013 for the Finger Lakes National Forest Land and Resource Management Plan (Forest Plan) dated 2006. Monitoring and evaluation of forest plans is required by the National Forest Management Act and associated planning regulations at 36 CFR 219 dated September 30, 1982. The Finger Lakes National Forest monitoring plan is described in Chapter 4 (Monitoring and Evaluation) of the Forest Plan. Monitoring consists of mandatory components found in every forest plan, as well as monitoring that is tailored to address specific Finger Lakes National Forest resource concerns raised from public involvement and Forest Service interdisciplinary team review.

Approval

I have reviewed the *Finger Lakes National Forest - Fiscal Years 2012 and 2013 Annual Monitoring and Evaluation Report* including its findings, conclusions, and recommendations. I conclude the report meets the intent of both the Forest Plan (Chapter 4) as well as the 1982 36 CFR 219 regulations.

JOHN SINCLAIR Digitally signed by JOHN SINCLAIR
Date: 2025.06.26 10:34:44 -04'00'

_____ _____
John A. Sinclair Date
Forest Supervisor
Green Mountain & Finger Lakes National Forests

1. Introduction

Monitoring and evaluation reporting is required by the National Forest Management Act and associated 1982 planning regulations (36 CFR 219.12(k)) to determine how well the Finger Lakes National Forest (FLNF) Land and Resource Management Plan (Forest Plan) is being implemented. The *Finger Lakes National Forest - Fiscal Years 2012 and 2013 Annual Monitoring and Evaluation Report* documents the results of the monitoring accomplished during fiscal years 2012 and 2013 (October 1, 2011, to September 30, 2013). The report describes monitoring items by resource category, provides data pertaining to the effects and effectiveness of Forest Plan management direction, and discusses various resource management efforts implemented during fiscal years 2012 and 2013. A major part of the report is to determine if the resource outputs, management costs, returns, and environmental objectives were achieved as envisioned in the Forest Plan.

Monitoring Plan

Chapter 4 of the FLNF Forest Plan (Monitoring and Evaluation, or Monitoring Plan) includes programmatic direction for monitoring and evaluating Forest Plan implementation. Chapter 4 defines the over-arching, strategic questions that must be addressed by the Forest Service through monitoring, including broad timetables and schedules for analysis and reporting.

In addition to direction for monitoring and evaluation, the Forest Plan describes the FLNF goals, objectives, and desired future conditions. The Forest Plan allocated land to different management areas, each with a unique desired future condition, major emphasis, and management direction.

Specifically, monitoring and evaluation provides a basis to determine:

- Whether Forest Plan implementation is achieving multiple resource goals, objectives, and desired conditions
- If application of standards and guidelines are effective in maintaining the productivity of the land
- If conditions or demands in the area covered by the Forest Plan have changed significantly enough to require a revision to the Plan

The Forest Plan may also be amended to adapt to new information and changed conditions identified through monitoring and evaluation efforts. Through this adaptive management approach, the Forest Plan is kept current.

Monitoring Implementation Guide

In addition to the programmatic direction provided in the 2006 Forest Plan, Forest Service staff completed the *Monitoring Implementation Guide* (also referred to as the Monitoring Guide) in June 2007. The monitoring guide provides more specific procedural guidance to implement the monitoring strategy outlined in the Forest Plan. The guide contains specific monitoring elements, along with methods, protocols, and analytical procedures to be followed. The monitoring guide is a suite of monitoring activities used to help Forest Service staff understand and answer the Forest Plan monitoring questions. Based on information garnered through annual monitoring and evaluation reports, the monitoring guide has been updated to incorporate suggested changes since 2007. The annual monitoring and evaluation report for fiscal years 2012 and 2013 is based on the 2012 Monitoring Guide.

Annual Monitoring Schedule

The *Annual Monitoring Schedule* outlines monitoring items, time frames, roles, and locations for the upcoming year and is linked directly to both the 2006 Forest Plan and the Monitoring Guide. The Forest Service prepares and revises this schedule as necessary as part of the annual work planning process. Some monitoring items are performed or measured annually, whereas others are scheduled with different time intervals that are determined necessary or appropriate for timely and effective evaluation.

Annual Monitoring and Evaluation Reports

Annual monitoring and evaluation (M&E) reports provide a forum for the review of current-year findings including:

- What monitoring activities were completed?
- What Forest Plan monitoring questions were addressed?
- How well did the monitoring address those questions?
- Do future monitoring activities need modification?

Comparison of results with those from previous years can identify trends and highlight where management is or is not achieving desired goals. It is during this annual review that Forest Service staff can determine if changes to the 2006 Forest Plan or the Monitoring Guide are necessary.

Annual M&E reports are prepared by an interdisciplinary team of Forest Service specialists that incorporate information gathered from various sources including partners, private citizens, and non-profit organizations. The Forest Service is grateful to the people who contribute their monitoring efforts and results and who take an interest in actively participating in the management of the FLNF.

Annual Monitoring and Evaluation Report Outline

This report is divided into five chapters:

- Chapter 1 is the introduction providing an overview of the monitoring program.
- Chapter 2 includes the detailed results of the monitoring and evaluation of elements specified in the Monitoring Plan, Guide and Schedule. Each element includes background information, a brief explanation of the monitoring activities and protocols, evaluation of monitoring results, and conclusions or recommendations.
- Chapter 3 provides a summary of on-going research and studies on the FLNF.
- Chapter 4 discusses adjustments or corrections to the Forest Plan.
- Chapter 5 is a list of the Forest Service staff that provided information for the report.

The activities and outputs monitored may be traced to one of three sources:

1. The 1982 planning regulations associated with the National Forest Management Act (36 CFR 219 dated September 30, 1982) which outline specific activities and outputs to be monitored.
2. Forest Plan requirements (Chapter 4) selected to facilitate comparison between actual conditions and desired future conditions.
3. Questions derived from public comments which are particularly useful for monitoring public satisfaction with the resources and services provided by the FLNF.

2. Discussion of Monitoring

The following table (Table 2-1) consists of elements from Tables 4.1-3 through 4.1-7 of the Forest Plan. It identifies the resource element, monitoring question and driver, and frequency of measurement that are discussed in this report.

Table 2-1: Resource areas, monitoring questions and drivers, and measurement frequency.

Resource Element		Monitoring Question(s)	Monitoring Driver	Frequency of Measurement
1	All	How close are actual outputs and services to projected outputs and services?	A quantitative estimate of performance comparing outputs and services with those projected by the 2006 Forest Plan.	Annual
2	All	How close are actual costs to projected costs?	Documentation of costs for carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan.	Annual
3	All	To what extent have Objectives been attained?	Forest Plan Objectives	Annual
4	All	To what extent have Standards and Guidelines been applied?	Forest Plan Standards and Guidelines	Annual
5	All	What are the effects of management practices prescribed by the 2006 Forest Plan?	Forest Plan Management Area Guidance	Annual
6	Transportation System	Is the use of vehicles off roads causing considerable adverse effects on resources or other forest visitors; how effective are forest management practices in managing vehicle use off roads?	Regulation requirements (36 CFR) 295 that use of vehicles off roads shall be planned, implemented and monitored in order to protect resources and visitors from considerable adverse effects, promote public safety, and minimize conflicts with other NFS land uses of the NFS lands	Annual
7	Recreation	Is the quality of the Forest Service trail system and recreation facilities being improved through operation and maintenance?	Forest Plan Goal 11	Annual
8	Soil	To what extent are Forest Service management and restoration activities maintaining or improving soil quality?	Forest Plan Goal 3	1-5 Years
9	Water	To what extent is Forest management affecting water quality, quantity, flow timing, and the physical features of aquatic, fisheries, riparian, vernal pool, and wetland habitats?	Forest Plan Goal 4	1-5 Years
10	Wildlife: Management	To what extent are forest management activities providing habitat for MIS?	Forest Plan Goal 2, Maintain and restore quality, quantity, amount, and distribution of habitats to	Annual

Resource Element		Monitoring Question(s)	Monitoring Driver	Frequency of Measurement
	Indicator Species		produce viable and sustainable populations of native and desirable non-native plants and animals.	
11	Native and Desired Non-Native Species	To what extent are management activities contributing toward population viability for native and desired non-native species? To what extent do management activities contribute toward restoration and maintenance of habitat for native and desirable non-native species?	Forest Plan Goal 2	Variable
12	Vegetation	Are harvested lands adequately restocked according to Plan goals?	Lands are adequately restocked as specified in the Forest Plan.	Annual
13	Insects and Disease	Are insect and disease levels compatible with objectives for maintaining healthy forest conditions?	Destructive insects and disease organisms do not increase to potentially damaging levels following management activities.	Annual
14	Interpretation and Education	In what way is the Forest Service providing information and education opportunities that enhance the understanding of the FLNF?	Forest Plan Goal 12	Annual

Forest Plan Implementation

Evaluation Question:

How do actual outputs compare to those projected in Forest Plan Appendix D, Proposed and Probable Practices, specifically related to heritage, recreation, roads, vegetation, rare, ecological, wildlife, and fisheries resources?

Monitoring Question: How close are actual outputs and services to projected outputs and services?

Monitoring Driver: A quantitative estimate of performance comparing outputs and services with those projected by the 2006 Forest Plan.

Background: This monitoring element is used to determine if resource outputs for the FLNF are being accomplished as outlined in Appendix D of the Forest Plan. Appendix D, Table D-5 lists a summary of the proposed management practices estimated to occur over the first decade of Forest Plan implementation, as well as estimates of goods and services to be provided during the planning period.

Monitoring Activities: There were numerous outputs and services provided on the FLNF during fiscal years 2012 and 2013. These outputs are displayed in Table 2-2.

Evaluation and Conclusions: All resource outputs and services are moving toward estimated total amounts for the first decade of Forest Plan implementation (2006 to 2015). Some activities such as heritage resource protection and threatened, endangered, and sensitive species inventory have already exceeded estimated amounts. Other activities will not reach estimated amounts if the annual

accomplishments continue at current rates. Totals for all activities and practices accomplished by the end of 2015 should be used as a basis to determine where adjustments can be made to better achieve Forest Plan objectives during the second decade of Forest Plan implementation (2016 to 2025).

Recommendations: Continue to monitor outputs and services to determine if there are shortcomings in services provided and/or if adjustments should be made to the estimated outputs due to budget constraints or a change in the need to produce these outputs.

Table 2-2: Estimated and actual outputs achieved in fiscal years 2012 and 2013; Forest Plan Appendix D, Proposed and Probable Practices.

Activity or Practice	Unit of Measure	Estimated Amount (Decade 1)[1]	Actual Amount Achieved in FY2012 / 2013	Actual Amount Achieved since 2006	Average Amount Achieved per Year since 2006
Recreation Resources					
Trail Improvement	Miles	3-6	0 / 0	0	0
Trail Maintenance – to standard	Miles	50-200	20 / 25	110	15.7
Trail Rehabilitation	Miles	20-40	2 / 5	7	1
Trail Maintenance – total system	Miles	380	35.9 / 36.6	133.5	19.1
Vegetation					
Site Preparation/ Reforestation	Acres	250	0 / 0	7	1
Stand Improvement	Acres	80-120	0 / 0	0	0
Thinning Harvest	Acres	250-300	0 / 0	54	7.7
Shelterwood Regeneration	Acres	100-150	0 / 0	0	0
Shelterwood Removal	Acres	50-100	0 / 0	0	0
Selection Harvest	Acres	325-375	0 / 0	0	0
Clearcut	Acres	30-50	0 / 0	11	1.6
Wildlife, Fisheries, Rare Plant, Rare or Outstanding Natural Community Resources					
Shrub Opening Maintenance	Acres	1,000-1,500	Not available	535	76.4
Wildlife Pond Maintenance	Ponds	6	Not available	15	2
Pasture Maintenance					
Mowing	Acres	7,500-10,000	1,333 / 1,053	9,116	1,302
Liming	Acres	500-1,000	0 / 0	819	117
New Fencing	Miles	4-6	0.6 / 0	8.2	1.2
Reconstruct Fence	Miles	20-30	0 / 1.7	33	4.7
New Stock Pond	Ponds	3	0 / 0	1	<1
Facilities	Facilities	5	0 / 1	7	1
Total Forage Production	Animal Unit Month	108,500	9,801 / 10,340	69,767	9,967
Non-Commercial Clearcutting of Aspen	Acres	80	0 / 0	14	2
Monitor condition of sites and species under special forest product permits	Sites	All	0 / 0	4	.6
Inventory for TES species and rare or outstanding natural communities	Acres	1,600	894 / 490 (plants)	8,797	1,257

Activity or Practice	Unit of Measure	Estimated Amount (Decade 1)[1]	Actual Amount Achieved in FY2012 / 2013	Actual Amount Achieved since 2006	Average Amount Achieved per Year since 2006
Monitor known rare or outstanding ecological, biological, or geological features, including TES occurrences	Sites	All	17 / 11 sites for TES plants (includes those newly discovered); 2 / 2 rare feature sites	155	22.1
Prepare conservation plans for each rare or outstanding area	Sites	7	0 / 0	0	0
Establish RNAs	Sites	2	0 / 0	0	0
Protect known occurrences of TES species	Sites	All	All sites protected during project implementation	All	All
Protect, and where feasible, improve or restore habitat conditions for TES species	Sites	All	All sites protected during project implementation	All	All
Protect important habitat sites for TES bats	Roost and den trees	Adequate numbers of roost and den trees	TES bats are not limited by available summer habitat. Known maternity roost areas are protected during project review/ implementation	Adequate	Adequate
Update conservation assessments for RFSS	Species	All	0 / 1	0	<1
Fish Stocking	Ponds	6	0 / 3	27	4
Fish Surveys	Surveys	3	0 / 0	16	2.3
Heritage Resource Protection Acres Surveyed	Acres	250-750	Not available	7,850	1,121
Agreements w/County Law	Agreements	2	Not available	5	<1
NF land signs placed and/or maintained	Signs	20-30	Not available	Not available	Not available

[1] These numbers represent the sum of annual activities in years 1 through 10.

Evaluation Question:

How do actual outputs compare to those projected in Forest Plan Appendix D, Proposed and Probable Practices, specific to timber offered and sold?

Monitoring Question: How close are actual outputs and services to projected outputs and services?

Monitoring Driver: A quantitative estimate of performance comparing outputs and services with those projected by the 2006 Forest Plan.

Background: This monitoring element is used to ensure timber sales offered and sold do not exceed the decadal allowable sale quantity provided in Appendix D, Tables D-2 and D-3 of the Forest Plan.

Additionally, Appendix D, Table D-4 lists the estimated acreage of silvicultural practices used to work toward the vegetative and other multiple-use desired conditions and objectives over the first decade of Forest Plan implementation (2006 to 2015).

The Forest Plan, Appendix D, Table D-2 provides the average annual allowable sale quantity (ASQ) by decade. The average ASQ is the maximum amount of volume that may be offered and sold during a decade of Forest Plan implementation from land identified for timber management. During the first decade the average annual ASQ is 258 thousand board feet (MBF) of timber volume. Average annual ASQ means that the amount of timber that may be sold on the Forest in a given year may exceed 258 MBF if the decadal ASQ (2.58 million board feet) is not exceeded.

Monitoring Activities: Forest Activity Tracking System (FACTS) and Timber Sale Accounting (TSA) reports were used to monitor timber offered and sold along with the type of timber harvesting practices used to implement the Forest Plan.

Evaluation and Conclusions: No timber sales were sold in 2012 or 2013. No progress was made in achieving the annual ASQ.

Recommendations: Continue to monitor and seek ways to increase the annual timber sale capacity.

Evaluation Question:

To what extent is the Forest Service providing a mix of products, services, and amenities?

Monitoring Question: How close are actual costs to projected costs?

Monitoring Driver: Documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan.

Background: The cost of implementing the 2006 Forest Plan is based on current budgets for all program areas excluding timber outputs. The Forest Service at the Washington and Regional levels track some outputs related to Forest Plan implementation, otherwise known as targets, on a yearly basis. Cost of providing these outputs is estimated through FLNF program work plans.

Monitoring Activities: Table 2-3 displays the targets that were achieved on the Green Mountain and Finger Lakes National Forests in fiscal years 2012 and 2013, and the estimated cost for achieving that target. Information is presented as a collective report for both National Forests because the information is tracked regionally in a combined report.

Table 2-3: Fiscal years 2012 and 2013 target accomplishments and estimated cost.

Target Activity	Amount Accomplished Fiscal Year 2012	Estimated Cost Fiscal Year 2012 ($)	Amount Accomplished Fiscal Year 2013	Estimated Cost Fiscal Year 2013 ($)
Inventory and Monitoring				
Annual required monitoring completed	n/a	102,599	Not available	71,086
Inventory data collected or acquired to standard	62,326 acres	73,393	Not available	96,871
Forest Planning				
Amendments completed	0	0	0	0

Target Activity	Amount Accomplished Fiscal Year 2012	Estimated Cost Fiscal Year 2012 ($)	Amount Accomplished Fiscal Year 2013	Estimated Cost Fiscal Year 2013 ($)
Facilities				
Forest administrative and other facilities maintained to standard	24 facilities	193,990	20 facilities	111,776
Recreation sites managed to standard	105 sites	126,745	110 sites	138,750
Hazardous Fuels				
Treated to reduce the risk of catastrophic wildland fire	207 acres	7,245	479 acres	51,253
Lands				
Land Acquisitions/adjustments	1,283 acres	65,619	Not available	Not available
Boundaries marked	17.8 miles	150,993	9 miles	152,779
Non-Recreation Special use permits administered to standard	77 permits	9,960	Not available	Not available
Non-Recreation Special use applications processed	28 applications	48,594	Not available	Not available
Rights of Way acquired	2 easements - acquired with a land acquisition	Covered in acquisition costs	0 easements	0
Vegetation and Watershed				
Forest vegetation established	482 acres	96,400	163 acres	32,600
Timber stand and genetic tree improvement	179 acres	35,800	122 acres	24,400
Treated annually for noxious weeds and invasive plants	996 acres	70,507	1083.1 acres	57,348
Soil and water resources improved	602 acres	Not Available	Not available	Not available
Wildlife, Fish and Threatened, Endangered and Sensitive Species				
Lake habitats restored or enhanced	200 acres	60,500	200 acres	26,000
Stream habitats restored or enhanced	60 miles	987,500[1]	71.2 miles	5,855,780[1]
Terrestrial habitats restored or enhanced	3,813 acres	371,476	3,881 acres	340,795
Recreation				
Heritage assets managed to standard	22 assets	27,907	Not available	Not available
Recreation site capacity operated to standard	481,799 persons at one time (PAOT) days	126,745	819,965 PAOT days	138,750
Number of interpretive and conservation education plans implemented	1 plan	60,000	1 plan	60,000
Recreation special use authorizations administered to standard	36 permits	46,506	Not available	Not available
Trails improved to standard	0 miles	0	3 miles	124,716
Trails maintained to standard	220 miles	165,632	300.7 miles	106,420
Wilderness Areas managed to standard	5 areas	95,034	8 areas	121,126
Roads				
Roads decommissioned	2.78 miles	14,511	0.2 miles	230,838
High clearance roads maintained	21.6 miles	14,167	7.6 miles	

Target Activity	Amount Accomplished Fiscal Year 2012	Estimated Cost Fiscal Year 2012 ($)	Amount Accomplished Fiscal Year 2013	Estimated Cost Fiscal Year 2013 ($)
Passenger car roads improved	2.1 miles	301,532	2.9 miles	
Passenger car roads maintained	59.74 miles	46,566	65.8 miles	
Lands covered by motor vehicle use map (MVUM) – includes development of the GMNF MVUM	408,972 acres	5,152	408,972 acres	Not available
Timber				
Timber volume sold	7,931 CCF[2]	512,926	8,246 CCF	727,000
[1] Includes replacement and repair to bridges and culverts resulting from tropical storm Irene. [2] 100 cubic feet.				

Evaluation and Conclusions: Tracking costs of Forest Plan implementation activities provides program managers unit cost information that is helpful in the development of work plans and out-year planning. Over an extended period, tracking these costs can be used to develop management activity unit cost trend information enabling managers to make more informed decisions about the costs of management activities.

Recommendations: Continue to track Forest Plan implementation accomplishments and estimated costs to develop trend information that can improve efficiency and effectiveness.

Evaluation Question:

What activities have occurred in management areas? How have these management actions helped to achieve the desired future condition of the management area? Have activities occurred that detract from the desired future condition of the management area?

Monitoring Question: What are the effects of management practices prescribed by the 2006 Forest Plan?

Monitoring Driver: Forest Plan Management Area direction.

Background: The Forest Plan describes specific major emphasis, desired future conditions, and standards and guidelines for seventeen different management areas. Management activities are designed to move the resource conditions across the FLNF closer to the Forest Plan desired future conditions. It is important to track projects implemented annually to understand how well they are meeting Forest Plan objectives and moving management areas toward their respective desired future conditions.

Monitoring Activities: The total number of projects approved in fiscal years 2012 and 2013 to implement the Forest Plan is provided in Table 2-4 by the level of analysis required by the National Environmental Policy Act (NEPA). The list of projects approved for each fiscal year are provided in Table 2-5 and Table 2-6.

Table 2-4: Number of projects approved for implementation in fiscal years 2012 and 2013.

National Environmental Policy Act – Level of Analysis	Fiscal Year 2012	Fiscal Year 2013
Record of Decision (EIS – Environmental Impact Statement)	0	0
Decision Notice (EA – Environmental Assessment)	0	0

National Environmental Policy Act – Level of Analysis	Fiscal Year 2012	Fiscal Year 2013
Decision Memo (CE – Categorical Exclusion)	1	6
Total Projects Approved	**1**	**6**

Table 2-5: List of projects approved for implementation in fiscal year 2012.

Project Name	NEPA Level	Project Description
Butternut Plantation	CE	Establish and fence butternut plantation/progeny within the Cook Grassland for Wildlife management area.

Table 2-6: List of projects approved for implementation in fiscal year 2013.

Project Name	NEPA Level	Project Description
Dugue Road/Aman North Wetland Creation	CE	Create 10 shallow depressions to recreate wetland habitat in low lying portions of the Dogue Road grassland (5 depressions) & Aman North grassland (5 depressions) for a total of up to 1-1/2 acres.
Early Successional Wildlife Habitat Improvement	CE	Cut and leave by hand mature aspens on about 4 acres to create early successional habitat.
Finger Lakes Trail Reroute	CE	Reroute a 1,500-foot section of the Finger Lakes Trail to leave the portion of trail used by horses.
Finger Lakes Riparian Planting	CE	Plant trees/shrubs in selected riparian areas within multiple pastures. Includes fencing where needed.
Hemlock Wooly Adelgid Chemical Control at Caywood Point	CE	Chemical control of hemlock wooly adelgid infestation at Caywood Point.
Burnt Hills Rides Association Recreation Special Use	CE	Recurring recreation special use event allowing horse riding on existing trails.

Evaluation and Conclusions: There were a total of 7 projects approved for Forest Plan implementation in fiscal years 2012 and 2013. Although approved during this time period, some are ongoing and are anticipated to be completed in outyears. All projects were designed and found to be consistent with Forest Plan direction including goals, objectives, and forest-wide and management area standards and guidelines. Collectively, these projects have moved existing conditions toward desired future conditions according to each management area direction where they are located.

Recommendations: Continue management activities that improve the desired future condition for all management areas and are designed to reach plan objectives. Look for opportunities to increase Forest Plan implementation in all management areas. Continue to monitor progress in reaching desired future conditions.

Evaluation Question:

Are standards, guidelines, and mitigation measures being implemented on projects consistent with Forest Plan and project National Environmental Policy Act (NEPA) direction? Are these measures effective at

achieving the desired results? Are there other measures that could be more effective?

Monitoring Question: To what extent have Standards and Guidelines been applied?

Monitoring Driver: Forest Plan Forest-wide and Management Area Standards and Guidelines.

Background: The Forest Plan states that forest-wide standards and guidelines (S&Gs) apply to all Forest areas for the purpose of protecting or managing forest resources. There are also S&Gs specific to each management area. Standards and guidelines are designed to achieve Forest Plan desired conditions, goals, and objectives. They are usually mitigation measures that minimize or negate the effects of a management action or land use. Additional design criteria and mitigation measures may be developed for site specific projects during the environmental analysis process to further protect resources or lessen impacts.

Monitoring Activities: Forest Plan S&Gs and project specific design criteria and mitigation measures are monitored to determine if they have been implemented correctly and achieved the desired results. This level of monitoring is completed by resource specialists as they visit project sites throughout the year.

Forest Service staff also continued the process for interdisciplinary Forest Plan implementation field monitoring of projects in fiscal year 2012 during two days of site reviews (May 8 and May 9, 2012). The sites monitored included the following completed and ongoing projects:

- Satterly Hill projects including vineyard fence removal, dumpsite cleanup, and wildlife opening management
- Cotton Mill Timber Sale
- Aspen Stand - vegetation management project
- Caywood Point - road and trail construction and Queen's Castle restoration

Each project was evaluated using a set of questions designed to answer Forest Plan implementation monitoring questions.

Evaluation and Conclusions: The projects monitored during the interdisciplinary field visits were found to have Forest Plan S&Gs and project design criteria and mitigation measures implemented effectively. There were no needed modifications to S&Gs or other changes to Forest Plan components identified from routine monitoring efforts conducted by resource specialists or during the interdisciplinary site reviews.

Recommendations: Continue to track the effectiveness of S&Gs, and make adjustments, when needed, to improve the performance of relevant Forest Plan S&Gs or project specific design criteria and mitigation measures.

Evaluation Question:

Did any project require guideline deviation or a Forest Plan amendment to modify a standard? If so, what was the project? Which standard was changed, or which guideline required deviation? What was the rationale for the change or deviation?

Monitoring Question: To what extent have Standards and Guidelines been applied?

Monitoring Driver: Forest Plan Forest-wide and Management Area Standards and Guidelines.

Background: The Forest Plan defines standards and guidelines (S&Gs) as management requirements that are applicable to all foreseeable situations. Deviation from standards require a site specific or programmatic Forest Plan amendment. Guidelines are management requirements that are applicable to most situations but can be modified at the project level. Deviation from a guideline does not require a Forest Plan amendment, but it does require that the rationale for deviation be disclosed in the project decision documents and analysis. The occurrences of deviations from S&Gs, and the reason for these deviations are tracked so that Forest Service staff can evaluate potential changes needed to the Forest Plan.

Monitoring Activities: There were no amendments to the Forest Plan and no known deviations from guidelines in fiscal years 2012 or 2013.

Evaluation and Conclusions: Not applicable.

Recommendations: None.

Recreation

Evaluation Question:

What are the trends in the illegal use of vehicles off roads?

Monitoring Question: Is the use of vehicles off roads causing considerable adverse effects on resources or other forest visitors; how effective are forest management practices in managing vehicle use off roads?

Monitoring Driver: Regulatory requirements (36 CFR 295) that use of vehicles off roads shall be planned, implemented and monitored to protect resources and visitors from considerable adverse effects, promote public safety, and minimize conflicts with other uses of the National Forest System lands.

Background: There is a long-standing concern about the illegal use of motor vehicles on the FLNF. This is well documented in both the 1987 and the 2006 Forest Plans. In addition, this is a national issue that prompted a significant change in policy and direction regarding wheeled motorized vehicles. Though a substantial issue, the development of monitoring protocols is difficult due to the scattered nature of violations that often happen in remote areas at night and during time periods when there are few patrols available. It was decided to utilize existing protocols used by law enforcement personnel as the starting point for monitoring this activity. Additionally, site specific analyses also document unauthorized vehicle use as part of the description of existing conditions.

Monitoring Activities: Monitoring continued during fiscal years 2012 and 2013 in conjunction with routine law enforcement patrols. As patrols and trail-condition inventories document incidents, or after the issuance of violation notices, the records are entered into a database. Data is stored in the Law Enforcement and Investigation Management Attainment and Reporting System (LEIMARS). Retrieved data can be used to show some trends, though there are some limitations since the data which is collected is dependent on the availability of personnel.

Evaluation and Conclusions: There were no violation notices issued and two incidents of illegal use of vehicles off roads documented in LEIMARS in fiscal year 2012. This is the smallest number of both violation notices and incident reports since at least 2006, when the current Forest Plan was issued, and appears to indicate that illegal use of vehicles off roads is not causing considerable adverse effects on resources or other forest visitors.

There was one violation notice issued and four additional incidents of illegal use of vehicles off roads documented in LEIMARS on the Finger Lakes National Forest in 2013. This is a slight increase from 2012, after a six-year decline.

Recommendations: Continue to work with all field going employees to emphasize the reporting of observations through official databases, so that summer off-highway vehicle and over-snow vehicle incidents are accurate. Add more qualitative data such as narratives based on site specific project analyses and monitoring.

Evaluation Question:

Is the Forest reducing deferred maintenance on developed recreation facilities and sites? Is the Forest increasing the number of recreation facilities that are maintained to standard?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 11 and associated Objectives.

Background: The FLNF has a number of small recreation facilities, and like most National Forests, has a limited budget to operate and maintain all the sites. The Forest Service is pursuing partners that can contribute to a portion of the maintenance, but this may not be sufficient to meet long term needs. With a desire to provide high quality recreation there is a need to monitor and determine if the management of recreation facilities is being improved. The recreation site monitoring that is being used began in fiscal year 1999 because of Congressional direction regarding deferred maintenance reporting. The Forest Service has completed a substantial level of monitoring and data clean-up since that time. During the first years of this process, it was required to sample approximately 20 percent of the facilities in any given year. The same strategy will continue to keep data current for Forest Plan monitoring through the life of the plan.

Monitoring Activities: Each developed recreation site should have a condition survey done every five years. The information on deferred maintenance from the condition survey is put into the Natural Resource Manager INFRA (Infrastructure) database. Reports are run on the data each year, and can be compared to previous years. To stay on the 20 percent schedule, four sites need to be monitored on the FLNF per year. During fiscal year 2012, there were 12 FLNF recreation site condition surveys completed. During fiscal year 2013, even though no recreation site condition surveys completed, all condition surveys were current (none were older than five years.)

Evaluation and Conclusions: The protocols being used are consistent with national direction and provide very good information to answer this monitoring question. In the future, changes in national standards may require an adjustment in monitoring procedures.

Recommendations: Continue to use the existing protocols for monitoring recreation site deferred maintenance. Focus on updating the INFRA databases the same year deferred maintenance projects are completed in the field for more accurate reporting of figures. Monitor recreation facilities on a more consistent 20 percent (or 4 sites) per year schedule to ensure consistency in reporting.

Evaluation Question:

Is the amount of deferred maintenance on the FLNF trail system being reduced?

Monitoring Question: Is the quality of the Forest Service trail system and recreation facilities being improved through operation and maintenance?

Monitoring Driver: Forest Plan Goal 11 and associated Objectives.

Background: The FLNF has a popular and diverse trail system, and like most National Forests, has a limited budget to operate and maintain the trails. There are a few partners that contribute to some portion of the maintenance, and Forest Service staff is pursuing the development of additional cooperators. Though desirable, this still may not be sufficient to meet long term needs. With a desire to provide high quality recreation and trails, Forest Service staff monitors to determine if the system is being improved. The trail system monitoring currently being used began in fiscal year 1999 because of Congressional direction regarding deferred maintenance reporting. Some level of monitoring and data clean-up has been completed since that time. During the first years of this process, it was required to sample 20 percent of the trail system in any given year. More recently the national trail monitoring strategy has changed to a sample of pre-selected trails nationwide.

Monitoring Activities: No trail monitoring was completed in fiscal year 2012. Trail activities were concentrated on the Green Mountain National Forest in Vermont due to tropical storm Irene damage in late August 2011. In fiscal year 2013, monitoring on two trails was completed: Ballard Pond (FT601) and Potomac Interpretive (FT611.01). Thirty-six miles of trails received some maintenance.

Evaluation and Conclusions: The protocols normally used for this monitoring are consistent with national direction and provide very good information to answer this monitoring question. In fiscal year 2007, monitoring procedures were reviewed, and it was determined that the national sampling procedure will be insufficient to maintain accurate data on a long-term basis for local needs. It is recognized that surveys can be completed to a higher standard if survey procedures meet national requirements.

Recommendations: Continue to use the existing monitoring protocols for the near-term and consider using local Forest sampling procedures to ensure the data is updated. Changing national direction that is trending toward reduced sample size is reducing the quality of data. It is recommended that a larger sample be completed when funding allows. It is also recommended that, in conjunction with planned trail data clean-up, deferred maintenance data be critically reviewed and updates for future monitoring reports be completed.

Visuals

Evaluation Question:

Is the FLNF being managed in accordance with the Forest Plan Visuals Standards and Guidelines (S&Gs) and are the Visuals S&Gs and any additional site-specific design criteria effective in helping to meet the Visual Quality Objectives (VQOs)?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 16 and associated Objectives.

Background: The FLNF continues to provide a high-quality scenic resource for residents and visitors. A patchwork pattern of forested areas and open pastures, shrublands and grasslands have created a unique aesthetic for which FLNF is characterized. To some people the Forest is seen as a natural appearing visual backdrop to their particular vantage points. To others the scenery is more intimate and offers a variety of environments from grasslands, ponds, wildlife viewing areas, and trailside areas.

Monitoring Activities: The Forest Landscape Architect continued to monitor visual quality on FLNF during fiscal years 2012 and 2013, using visual quality objectives (VQO's) and the S&G's set forth in the Forest Plan, with the goal of maintaining and enhancing visual quality. In fiscal year 2012, VQO monitoring focused on the projects monitored during the Forest staff interdisciplinary monitoring field visits. Projects monitored were Cotton Mill Timber Sale, Satterly Hill - Wildlife Opening Maintenance and Vineyard Fence Removal, Aspen Stand vegetation management project, and Caywood Point - road and trail construction and Queen's castle restoration. The projects met VQOs, S&Gs and project specific mitigations. No need for changes in implementation of VQO's was noted. In fiscal year 2013, monitoring emphasized review of the overall appearance of FLNF and examined visual resource concerns for project planning and implementation.

Evaluation and Conclusions: The overall appearance of FLNF continues to meet the VQOs. Monitoring of vegetation management treatments on the Green Mountain National Forest showed that some design criteria and visual guidelines need to be reviewed and possibly revised to incorporate new approaches to shelterwoods and wildlife openings which may be applicable to FLNF management. Review and discussion of changes in project design with the landscape architect are important to ensure that VQOs are met.

Recommendations: Continue to monitor the visual resource for compliance with Forest Plan standards and guidelines. Look for opportunities for visual enhancement along roads, trails and recreation sites as part of integrated resource project planning. Continue to work with vegetation management project planners during the implementation phase to aid in project designs that will meet VQOs.

Evaluation Question:

Has the Forest transitioned from the current Visual Management System to the Scenery Management System?

Monitoring Question: To what extent have Scenic Integrity Objectives been attained?

Monitoring Driver: Forest Plan Goal 16 Objective.

Background: In the late 1990's, the Forest Service developed the Scenery Management System (SMS) which evolved from and was to replace the Visual Management System (VMS) developed in the 1970s. Forest Service Handbook direction approved in 2003 recommends the scenery inventory be updated to meet the SMS process prior to revising forest plans. The FLNF did not complete this inventory and did not convert to the SMS at the time of the 2006 Forest Plan revision. The 2006 Forest Plan contains an objective to "Complete a transition from the current Visual Management System to the Scenery Management System."

Monitoring Activities: Forest Service staff began work on the transition from VMS to SMS in 1999, and resumed this work in 2007 after the Forest Plan revision was completed. The development of SMS for FLNF has stalled part way through the process due to changes in staff and competing priorities.

Evaluation and Conclusions: The FLNF has not transitioned to the SMS and a Forest Plan amendment to incorporate SMS to ensure application of the principles of landscape aesthetics, scenery management, and environmental design in project-level planning has not been completed.

Recommendations: The 2012 Planning Rule directives require the Responsible Official to "use the Scenery Management System (SMS) in all plan revisions to address scenic character and develop scenery-related plan direction unless the Responsible Official provides written justification and obtains concurrence from the Regional Forester." Under these directives the FLNF should prepare transition to the SMS prior to the next Forest Plan revision.

Heritage

Evaluation Question:

Have Heritage Resource program management objectives related to: backlogged site evaluations; meeting curation guidelines; developing a Geographic Information Systems (GIS) model for prehistoric site locations; increasing partnerships for Section 110 activities; consulting with State Historic Preservation Officers (SHPO) and Tribes; and incorporating heritage components into historic building management plans been addressed?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 10 and associated Objectives.

Background: Forest Service staff identified these needs during Forest Plan revision and has been addressing them incrementally since 2006.

Monitoring Activities: No information is available for fiscal years 2012 and 2013.

Evaluation and Conclusions: No information is available for fiscal years 2012 and 2013.

Recommendations: Continue with heritage resource monitoring and, as possible, address site evaluation, curation and Tribal Relations.

Evaluation Question:

Have Heritage Resources across the FLNF been inventoried and protected?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 10 and associated Objectives.

Background: See fiscal year 2007 monitoring and evaluation report.

Monitoring Activities: No information is available for fiscal years 2012 and 2013.

Evaluation and Conclusions: No information is available for fiscal years 2012 and 2013.

Recommendations: Continue both inventory and monitoring activities in combination with establishing better baseline data about site conditions.

Soil

Evaluation Question:

Were Forest Plan Standards and Guidelines (S&Gs) and mitigation measures implemented on selected projects, and to a lesser extent, were they effective in protecting the soil, water and wetland resources? Are soil quality standards met?

Monitoring Question: To what extent are Forest Service management and restoration activities maintaining or improving soil quality?

Monitoring Driver: Forest Plan Goal 3 and associated Objectives.

Background: Most S&Gs are implemented most of the time, and are usually effective in protecting the soil, water and wetlands resources. Deviations from S&Gs and mitigation measures are reported, along with their effects.

Monitoring Activities: Several projects were monitored for compliance with soil, water and wetland S&Gs in fiscal years 2012 and 2013. Examples of projects monitored included grazing area practices, and trail construction and maintenance projects. Most S&Gs were found to be implemented and effective in protecting the soil and water resources, most of the time. One exception to this was implementation of Soil, Water and Riparian Area Protection and Restoration Standard S-2 (the Protective Strip standard) in grazing areas. Standard S-2 is designed to protect and improve stream water quality, aquatic habitats, riparian vegetative cover, and stream bank stability. More time is needed before we can achieve full compliance with S-2 in our grazing areas. Many riparian areas in existing pastures have been fenced to exclude livestock. Over the long-term, this practice will improve riparian communities, stream stability, and some aspects of water quality.

Soil quality standards have not been developed for common activities for FLNF. Soil quality standards for grazing areas are the highest priority.

Evaluation and Conclusion: Continue to implement pasture fencing along streams, and other measures to fully comply with Standard S-2. Continue the annual S&G and mitigation measure implementation and effectiveness monitoring.

Recommendations: Continue to monitor the effectiveness of pasture fencing on stream water quality, aquatic habitats, riparian vegetative cover, and stream bank stability. Begin to focus some S&G monitoring on the impacts of road design and maintenance on water quality, since this is in impact that has not yet been intensively evaluated.

Evaluation Question:

How are soil/site quality and productivity changing over the long term, in response to factors such as acid deposition, climate change, invasive species, other environmental problems, and forest management?

Monitoring Questions: Are soil nutrient levels changing, and are the changes affecting soil/site productivity? What toxins exist in the soil (e.g. from the atmosphere), how are they changing in quantity and type over time, and is this affecting productivity? Are forest management activities affecting soil/site productivity?

Monitoring Driver: Forest Plan Goal 3 and associated Objectives.

Background: Goal 3 of the Forest Plan is to "maintain or restore the natural, ecological functions of the soil." Maintaining soil ecological functions means sustaining biological diversity, cycling nutrients, providing physical support for vegetation, and filtering pollutants.

The condition of soil quality on FLNF, and the effects of forest management activities on soil quality, were characterized in the 2006 FLNF Forest Plan Final Environmental Impact Statement (FEIS) (pp. 3-20 to 3-26). The current condition of FLNF soil resources is based mainly on the FLNF Soil Assessment (Tetra Tech 2003) as provided in the FEIS. To summarize this information:

- General soil health is good, including soil quality, with only occasional exceptions. This means soils are stable (not eroding), have a protective and nutrient-rich cover of organic matter, and support productive forests and grazing lands. Soil quality is the capacity of the soil to function within ecosystem boundaries to sustain biological productivity, maintain or enhance water and air quality, and support human health and habitation. FLNF soils were severely depleted by land use practices during the 1800s and early 1900s. The depletion included erosion of much of the topsoil; reduction of beneficial plant nutrients and nutrient storage capacity; compaction of remaining surface layers and a corresponding reduction in infiltration capacity; and increased surface runoff of precipitation. Reforestation, and grassland and shrubland management have resulted in decreased soil disturbance and general improvement in soil quality.
- Soil health has been good over the past 15 years because State Best Management Practices (BMPs), and Forest Plan Standards and Guidelines (S&Gs) have been followed. BMPs and S&Gs have proven effective in minimizing soil impacts on FLNF.
- Areas exist on FLNF where soil health and quality are poor. These areas most commonly include short segments of roads or trails with gullies or eroding ditch lines due to heavy use, poor road/trail design, or lack of maintenance; bare, eroding soils in pastures due to congregation of livestock; soil compaction and displacement in wetlands due to the presence of livestock, and temporary gully erosion or rutting on skid roads associated with timber harvest and/or heavy rainfall. These exceptions to good soil health are uncommon and limited in extent.
- Acid deposition resulting from air pollution has increased levels of nitrogen, sulfur, and some toxic elements such as mercury, in the soil. Atmospheric deposition of acidic compounds from the air can make the soil more acidic, leach nutrients like calcium and magnesium from the soil, and increase the availability of aluminum. This may be altering the soil nutrient content and thus, soil quality. Research on the effects of acid deposition on soils is a topic of long-term, on-going Forest Service research.

Monitoring Activities: Soil nutrients were analyzed in many of FLNF pastures in 2008 (Table 2-7). High levels of the following soil nutrients were found in the following pastures. High nutrient levels often result from fertilizer or liming inputs to the soil which can negatively affect the environment.

Table 2-7: Soil Nutrient Analysis values falling in the "high" range for samples collected in 2008 from FLNF pastures[1].

Pasture	Ca (lb/ac)	Mg (lb/ac)	K (lb/ac)	P (lb/ac)
Teeter	4910	660		
South Stephens	5790	4050	160	
North Stephens	3270	300	115	
South Velie	2770	355		
Shannon	3240	310		
Predmore	3290			
Pierson	3300			
Peterson	3170	460		

Pasture	Ca (lb/ac)	Mg (lb/ac)	K (lb/ac)	P (lb/ac)
North Wilkins	3590		320	
Peterson	3420	540		
Knight	5570		120	
Johnson	5000			
Haws	4110			
Dunn	4980			13
Cronk	5850			43
Peterson	3420	540		
Campbell	5160	460		
Bumpus	3580			
Ballard	3080			
Bale	2970			
Bailey	35260			

[1] Values are reported in pounds per acre. Values in ppm can be approximated by dividing the value in lb/ac by 2.

Green Mountain & Finger Lakes National Forests staff and FS-Northern Research Station (NRS) participate in the Northeastern Soil Monitoring Network, a group formed in 2006 with long-term soil productivity and forest health monitoring goals, composed of scientists throughout the Appalachian chain and into the southeast Canadian Provinces. Through these and similar efforts, and on-going research by the FS-NRS, our understanding of the effects of acid deposition, toxins, and climate change on soil productivity will continue to improve.

Soil quality standards have not been developed for common activities on the FLNF. Soil quality standards for grazing areas are the highest priority.

Evaluation and Conclusion: Participants in the Northeastern Soil Monitoring Network have been monitoring and reporting on forest health in the region since the cooperative formed in 2006. Soil Ca may be continuing to decline, and Al to accumulate in soils in the region due to soil acidification resulting from past and current acid precipitation inputs (Warby, 2010). No significant trend in Mercury deposition rates has been detected over the past nine years, from 2004 to 2013, across the region (Waite, 2014).

Recommendations: Consider developing long-term soil monitoring encompassing both managed and unmanaged forest areas to detect long-term trends in soil productivity, including forest and grass/shrub sites.

Fish

Evaluation Question:

Is habitat quality and quantity being maintained in FLNF ponds? Is aquatic vegetation encroaching upon more surface area of ponds? Are water control structures well maintained and support adequate water levels in ponds?

Monitoring Question: To what extent do Forest Service Management activities contribute toward restoration and maintenance of habitat for native and desirable non-native species?

Monitoring Driver: Forest Plan Goal 4 and associated Objectives.

Background: Forest Plan objectives state management should provide suitable fish habitat in ponds for resource protection and recreational fishing purposes. Aquatic vegetation is a very important component

in pond ecology. Pond vegetation is used by many fish species as spawning areas and it provides critical hiding cover for juvenile fish. Often, it provides the only cover for prey species to escape predators. Dense root and leaf structure serves as excellent habitat of insects and invertebrates (snails, leeches, crayfish etc). The matrix of plant stems and leaves traps organic material and promotes periphyton (attached algae) and attracts zooplankton, both of which serve as a food source for many aquatic organisms.

Aquatic vegetation can also be so prolific that it becomes a detriment to aquatic biota by reducing oxygen and /or light levels. This can be caused by either native or non-native vegetation reaching "nuisance" levels. High levels of decaying organic material in a pond, combined with reduced light when covered with ice and snow can create the low oxygen levels that kill fish during the winter.

Monitoring Activities: No information is available for fiscal years 2012 and 2013.

Evaluation and Conclusions: No information is available for fiscal years 2012 and 2013.

Recommendations: Conduct additional aquatic invasive plant surveys in ponds and develop an interdisciplinary approach with botany and range staff to assess and control invasive plants. Evaluate the extent of native aquatic plants that may become "nuisance" populations resulting in decreased habitat quality for fish and wildlife. Continue a partnership with NY Department of Environmental Conservation and the Finger Lakes Institute to evaluate the suitability of National Forest streams for brook trout reintroduction. Expand temperature monitoring and assess riparian condition to determine the potential for improved riparian canopy to lower stream temperatures in marginal areas.

Evaluation Question:

Are fish populations in ponds being maintained at levels sufficient to support a recreational fisheries or natural reproduction? If not, is supplemental stocking or habitat improvement required?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Forest-wide and Management Area Standards and Guidelines.

Background: Many ponds on FLNF contain a healthy population of largemouth bass. This is the result of a forest-wide stocking program that began in 1981 when approximately 20 ponds were stocked with bass. Fish surveys in the late 1980s focused on documenting bass survival and identifying the ponds where bass were being sustained through natural reproduction. This pond monitoring has continued on a regular basis since that time.

Management objectives are to maintain quality wildlife ponds throughout the forest through fish habitat improvements and enhancing recreational fishing opportunities by improving access and aquatic resource education and interpretation. Supplemental stocking of bass and non-game fish such as bluegill and golden shiner has been done as needed based on data gathered from monitoring surveys.

Monitoring Activities: No information is available for fiscal years 2012 and 2013.

Evaluation and Conclusions: No information is available for fiscal years 2012 and 2013.

Recommendations: Conduct regularly scheduled fish populations monitoring in wildlife ponds to determine if natural reproduction is evident. Where natural reproduction is not occurring, or winterkill has reduced fish populations, supplemental stocking may be done.

Water

Evaluation Question:

What is the existing status of water quality on the FLNF, and how are our management activities affecting water quality?

Monitoring Question: To what extent is Forest Service management affecting water quality, quantity, flow timing, and the physical features of aquatic, fisheries, riparian, vernal pool, and wetland habitats?

Monitoring Driver: Forest Plan Goal 4 and associated Objectives.

Background: Water quality monitoring on FLNF has occurred since fiscal year 2000. From 2000 through 2003, the water quality monitoring occurred on several streams and ponds within grazing areas, and on control streams and ponds throughout FLNF. The monitoring tracks the effects of cattle grazing on water quality and riparian areas. Since 2004, water quality monitoring consisted of monitoring control streams and ponds to characterize the condition of water quality throughout FLNF and monitoring recreational fishing ponds to characterize the condition of water quality in and riparian areas around the fishing ponds.

Monitoring results were compared to the State of New York standards for Class D Waters (the lowest water quality class). In general, the majority of the parameters tested (2000-2009) met Class D standards, except for turbidity, phosphorous and temperature. The elevated turbidity levels are probably due to sedimentation, and the elevated phosphorus levels are likely due to runoff from current and historic agricultural land-use areas. The elevated temperature levels at fishing ponds may be due to low water levels during the warmer months, and insufficient riparian vegetation for shading.

Monitoring Activities: No water quality monitoring was conducted after 2010. However, a report was completed under a Forest Service contract. The objective of the report was to summarize the previous10 years of monitoring, identify key monitoring questions, and recommend future monitoring. The report is titled, "Finger Lakes National Forest Water Quality Report – A summary of 2000-2009 Monitoring Initiatives" (Wightman 2010).

Evaluation and Conclusions: Water quality monitoring on FLNF is essential to meet Forest Plan Goal 4 objectives. These objectives consist of meeting or exceeding all State Water Quality Standards (including biotic); and to minimize the adverse impacts on aquatic, fisheries, riparian, vernal pool, and wetland resources from management activities.

Important findings in the Finger Lakes National Forest Water Quality Report are summarized below:

- There are no trends in the levels of dissolve oxygen, pH, conductivity, and total dissolved solids. Data indicates good baseline water quality for these parameters.
- Levels of phosphorous, nitrogen, and e.coli sometimes exceed Class D standards, even at control (low impact) sites.
- Monitoring has not revealed the source of consistently elevated phosphorous. Possibilities include residual impacts from historic land use, natural geochemical characteristics, and measurement error.

- Some current grazing practices appear to be impacting water quality.
- Best Management Practices for water protection in grazing areas have repeatedly been shown in research publications to be effective in improving and protecting water quality.
- Determine if the standards for Class C waters (rather than the lower Class D standards) can be achieved throughout FLNF.

Recommendations:

- Monitor a subset of streams and ponds in pastures and at control sites, particularly where phosphorous is high. Determine the source of high phosphorous and determine if laboratory tests of water quality are needed (as opposed to tests done in the field).
- Share the water monitoring results with Hector Grazing Association.
- To fully meet Forest-wide Soil, Water and Riparian Area Protection and Restoration Standard S-2, continue to work toward full implementation of pasture Best Management Practices in grazing allotments.

Wildlife

Evaluation Question:

Do we have bald eagles on/near the FLNF? Are they nesting? Are they nesting successfully? Do they need site-specific protection or habitat management?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: The New York Department of Environmental Conservation (NYDEC) reports bald eagles have increased in numbers across New York State since 1993. Bald eagles do not nest on FLNF, but they do nest on the nearby Montezuma Wildlife Refuge. Occasionally transient birds fly over FLNF lands.

Monitoring Activities: Forest Service staff continued working cooperatively with local conservation organizations, and state and federal agencies during fiscal years 2012 and 2013. Each year, as the New York and Nation-wide bald eagle population increases, individual eagles are sighted more often in and around the FLNF. Each sighting is noted, considered, and follow-up actions including area surveys and monitoring occur to determine the status of the bird sighted.

Evaluation and Conclusions: Given the visibility of the bald eagle to the general public and to agencies tasked with tracking populations of this species, it is likely Forest Service staff will be made fully aware of any nesting eagles located on FLNF. If this happens, a more site specific analysis of the management guidelines for the area hosting such a nesting pair would need to be evaluated.

Recommendations: No changes needed at this point.

Evaluation Question:

What is the population trend of northern goshawks on the FLNF and adjacent lands?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: Due to the size of FLNF, goshawk populations are restricted to one or two pairs of nesting birds. Goshawk pairs require large territories with a wide variety of habitat conditions to nest forage and raise their young.

Monitoring Activities: Monitoring activities primarily consists of documenting reported sightings of goshawks, and visiting active nest sites when these sites have been found and reported to the Forest Service wildlife biologist.

Evaluation and Conclusions: Over the years it has been common for forest visitors, volunteers and staff to report seeing, or hearing goshawks or goshawk nests. In general, there seems to be an active nest somewhere in the southern portion of FLNF each year, and one in the northern portion of FLNF each year. The goshawk pair nesting in the southern portion of FLNF is generally reported more often as its nesting sites are in close proximity to local trails and forest facilities.

Recommendations: Continue to monitor for goshawks by documenting reported sightings and nest stands. These records can be used to aid in the development of FLNF vegetation management plans for the protection and habitat enhancement of the local pairs.

Evaluation Question:

Do Indiana and eastern small-footed bats roost, forage, hibernate on the FLNF? Do they need protection or habitat management?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: Until recently, Indiana bat was the only threatened or endangered bat species, and the eastern small-footed bat was the only Regional Forester Sensitive Species (RFSS) on FLNF. Beginning in 2006, populations of cave- and mine-hibernating bats in the Northeast experienced unprecedented mortality due to a disease condition identified as “white-nose syndrome” (WNS). As a result of WNS, little brown bats in Vermont declined by 75 to 99 percent, and northern long-eared bats declined by 93 to 99 percent state-wide. Population trends in the FLNF region likely are similar. Indiana bats, eastern small-footed bats, and tri-colored bats also are susceptible and vulnerable to WNS, but these species have never been abundant or wide-spread and documenting declines in abundance for these species is difficult. Forest Service Region 9 listed little brown bat, northern long-eared bat, and tri-colored bat as RFSS in December 2011. FLNF staff continue to work closely with the U.S. Fish and Wildlife Service, New York Department of Environmental Conservation, Vermont Department of Fish and Wildlife, University of Vermont, and numerous local volunteers to monitor bat species in New York and Vermont.

Monitoring Activities: Forest Service staff conducted vehicle-based acoustic surveys for bats on FLNF along a 22-mile survey route during fiscal years 2012 and 2013. Mist-net capture surveys have not been conducted since 2010.

Evaluation and Conclusions: No further evaluations or conclusions were made as the result fiscal years 2012 and 2013 monitoring.

Recommendations: Forest Service staff will continue to participate in woodland bat survey and monitoring. Improve survey design to better understand how, and where, all woodland bats including the federally endangered Indiana bat, use FLNF habitat.

Evaluation Question:

Do gray wolves, eastern cougars, or Canada lynx occur on or near the FLNF?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: The FLNF has only historical occurrence records for gray wolf, eastern cougar, and Canada lynx. These species are not known to occur on the FLNF, and their presence on the FLNF as viable populations at any time in the foreseeable future is unlikely.

Monitoring Activities: No information is available for fiscal years 2012 and 2013.

Evaluation and Conclusions: No information is available for fiscal years 2012 and 2013.

Recommendations: None.

Evaluation Question:

What are the population trends of black rat snake; bog and wood turtles; Jefferson, blue-spotted, longtail, and slimy salamanders on the FLNF and adjacent lands? Do they need protection or habitat management?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: The black rat snake; bog and wood turtles; Jefferson, blue-spotted, longtail, and slimy salamanders are all species that occur in the Finger Lakes Region and could occur on FLNF. Although these species are on the Regional Foresters Sensitive Species (RFSS) list for some National Forests in Region 9, they no longer are RFSS for FLNF.

Monitoring Activities: The Forest Service did not conduct any surveys specifically targeting these species during fiscal years 2012 and 2013.

Evaluation and Conclusions: No new information to add specific to fiscal year 2012 and 2013 monitoring.

Recommendations: No changes needed at this point.

Evaluation Question:

What are habitat trends for Management Indicator Species? To what extent is Forest Service management accomplishing desired distribution of age class and habitat type as desired and outlined in Forest Plan objectives?

Background: Management Indicator Species (MIS) in the 1987 FLNF Forest Plan are savannah sparrow, bobolink, and eastern meadowlark (grassland habitat); common yellowthroat (shrubland); black-throated blue warbler (contiguous forest habitat); chestnut sided warbler (young deciduous trees); and gray squirrel (oak-hickory). Forest Service staff have monitored these species on FLNF since 1987 to assess changes in abundance or availability of their preferred habitats. Collection of population data has been facilitated through the efforts of local universities, the NYDEC, and numerous volunteer groups and individuals. While it has proven difficult to consistently collect annual population data due to a variety of factors such as weather, staffing, and funding,

Monitoring Activities: During fiscal years 2012 and 2013, monitoring activities included species-specific surveys and general biological surveys for chestnut-sided warblers, ruffed grouse, American woodcock, and the grassland bird species, following nationally accepted protocols. Staff biologists continue to provide guidance for management activities regarding opportunities to increase vegetative, age class, and structural diversity in conjunction with other projects on FLNF.

Evaluation and Conclusions: Survey and monitoring protocols are effective; in that they are easy to follow and can and do provide information that can be duplicated each year. Monitoring protocols however are limited in the amount of data they can provide, and results must be used in conjunction with other information gathered at state-wide and regional levels. Due to small sample sizes and other limitations associated with MIS data, statistically significant trends are very difficult to detect for FLNF.

Recommendations: Continue to increase monitoring, evaluation, and partnerships with the goal of obtaining more and greater reliability of data.

Evaluation Question:

Are we retaining the best individual trees and snags? How do they persist/improve/degrade over time? How well did retained future trees and snags develop over time?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: The 2006 Forest Plan contains direction for retention of wildlife reserve trees, which include roost, nest, and den trees; cavity trees; snags; and fruit- or mast- producing trees and shrubs. Wildlife reserve trees also include patches of uncut trees retained within areas where harvest reduces basal area of the stand below 30 square feet per acre. Wildlife reserve trees are important for increasing

the complexity of habitat structure, which, in turn, supports increased diversity of wildlife species.

Monitoring Activities: The Forest Service did not conduct any surveys specifically targeting wildlife reserve trees during fiscal years 2012 and 2013. However, conditions and requirements for the retention of appropriate numbers and distribution of wildlife reserve trees are included in marking guides for individual timber sales. FLNF staff verify these conditions are being met throughout the sale administration process. The Forest Service has not conducted any surveys specifically investigating the persistence, improvement, or degradation of wildlife reserve trees over time, or how well suitable wildlife trees or snags develop over time.

Evaluation and Conclusions: Informal observation suggests that suitable wildlife trees are abundant and well distributed across forested portions of FLNF.

Recommendations: Continue current policy for marking guides and sale administration regarding wildlife reserve trees.

Grazing Resources

Evaluation Question:

Is the Forest Service maintaining forage production sufficient to support approximately 10,000 Animal Unit Months (AUMs) annually?

Monitoring Question: To what extent have Objectives been attained?

Monitoring Driver: Forest Plan Forest-wide Standards and Guidelines – 2.3.7 Range Management, and Grassland for Grazing Management Area direction.

Background: Annual forage monitoring is intended to assess forage availability for livestock. Specifically, it provides an estimate of individual pasture productivity for desirable grasses and legumes. Monitoring of grazing resources was not completed in fiscal year 2011 due to staff vacancies.

Monitoring Activities: Monitoring activities were conducted in fiscal year 2012, but not in fiscal year 2013 due to continued staff vacancies. Up to 30 samples per pasture were collected in fiscal year 2012, measuring cool season grasses and forbs and undesirable vegetation. The sampling scheme divides all 39 pastures into six forage productivity classes. Samples are taken from one pasture of each representative soil type within each class. Clippings of each forage type (grasses, legumes and undesirables) are collected and dried to determine a green weight to dry weight conversion factor. Monitoring activities were done via contract.

Evaluation and Conclusions: Although the early mowing of goldenrod and herbicide treatments for non-native invasive plants successfully reduced targeted vegetation in fiscal years 2012 and 2013, repeated herbicide treatments are needed for knapweed and thistles to reduce the surviving seed bank within the soil. Monitoring is planned to assess the effectiveness of this ongoing treatment intended to enhance forage quality and grassland habitat conditions.

Recommendations: Goldenrod and non-native invasive plants continue to pose management challenges to long-term livestock grazing and forage production, especially in areas not recently mowed or sprayed. Control activities approved in the 2008 Invasive Plant Control environmental assessment/decision notice guide efforts to improve forage and wildlife habitat within grasslands. The use of herbicides, experimental sheep grazing, rotational grazing with cows, biological controls (i.e. release of approved

insects), and earlier mowing for goldenrod are expected to continue contributing toward long-term enhancement of forage quality in pastures. These activities should continue in additional pastures with high infestations where spraying and mowing was not done recently.

Evaluation Question:

Are we providing functioning livestock watering facilities to support approximately 10,000 Animal Unit Months (AUMs) annually?

Monitoring Question: To what extent have Objectives been attained?

Monitoring Driver: Forest Plan Forest-wide Standards and Guidelines – 2.3.7 Range Management, and Grassland for Grazing Management Area direction.

Background: The Forest Service manages FLNF to provide for the sustainable use of grasslands for grazing by providing functioning watering facilities (i.e. ponds, troughs, pipelines) to support needs of approximately 10,000 AUMs annually.

Monitoring Activities: Forest Service range staff and Hector Cooperative Grazing Association (HGA) annually inspect all watering facilities to assess maintenance and adequacy of systems. HGA provided maintenance activities throughout fiscal years 2012 and 2013 including valve and cement trough repair in some pastures. In fiscal year 2013, HGA also built replacement fencing around the ponds in Horton and Wright pastures to exclude livestock. New troughs were installed, and ponds were fenced out in Johnson, Horton, and Mielty pastures, providing a controlled water source. Total AUMs supported with functioning watering facilities were 9,801, and 10,340 AUMs in fiscal years 2012 and 2013, respectively. Watering facilities are adequate to support at least 10,000 AUMs; however, in fiscal year 2012 there were fewer animals on pastures than permitted to graze because of a lower demand by area farmers.

Evaluation and Conclusions: Of the 44 manmade ponds forest-wide providing water to livestock, reviews throughout fiscal years 2012 and 2013 indicate that although all were functioning, several require dredging to remove sediment and to repair earthen dams damaged from nearly 40 years of natural, rodent (i.e. beaver and muskrat), and livestock-caused bank erosion. Cattle exclusion fencing was found to be in disrepair on a few ponds, allowing for total cattle access. Additional ponds identified in the 2008 Allotment Management Plan will continue to be prioritized for repair as funding allows. Also, repair and replacement of pipeline and trough fixtures will continue to ensure livestock watering needs are met.

Recommendations: HGA should continue seeking innovative ways to fund watering facility maintenance needs. HGA routinely provides maintenance and monitoring of watering areas, but additional new fencing to enhance water quality and riparian protection in pastures for wildlife and livestock will result in increased costs. Monitoring is expected to continue to ensure livestock facilities are providing sufficient water.

Botanical Resources

Evaluation Question:

What are the population trends for sensitive plants on the FLNF? To what extent is management sustaining or enhancing habitat conditions for populations?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: Sensitive plant species have been monitored periodically by Forest Service staff and local botanists under contract. Currently there are 20 plants FLNF classified as Regional Forester Sensitive Species (RFSS). The New York Natural Heritage Program (NYNHP) has a national database that records information about populations they track, and it includes some of the plants considered RFSS on FLNF. In fiscal year 2007, the Forest Service introduced its own database, NRIS (Natural Resource Information System) TES (Threatened, Endangered, or Sensitive) Plants and Invasive Species, for tracking all plant data gathered as result of inventory and monitoring activities which is now the place where all botanical data is entered. The NYNHP database and NRIS both store population data such as numbers of plants, their condition, flowering/fruiting, any management concerns or issues, and a general rank of the occurrence from A (excellent estimated viability) to D (poor estimated viability). The intent is for data in NRIS to serve not only Forest Service needs but also be shared with NYNHP.

In the 1990's, most of the RFSS plants recorded for FLNF were reported outside federal lands but within Seneca and Schuyler Counties, with potential habitat on FLNF. None of the RFSS were tracked as rare plants by New York but were rare or scarce in the Finger Lakes region. New inventories and evaluations of species viability over the past several years have led to a revised list containing only those species occurring on or very close to federal lands, including three species listed as threatened or endangered by New York: *Arabis drummondii (=Boechera stricta* - Drummond rockcress), *Sisyrinchium mucronatum* (Michaux blue-eyed grass), and *Veronicastrum virginicum* (Culver's root). This has brought more focus to the rare plant program and allowed scarce resources to be applied more effectively for rare plant conservation.

Prior to fiscal year 2012, Region 9 (Eastern Region) of the Forest Service had been working with local National Forests to develop conservation plans and assessments for species of concern. Currently there are two conservation plans or assessments developed for RFSS plants on FLNF: one for *Juglans cinerea* (butternut) and one for *Lilium canadense* (Canada lily). There is also a conservation assessment completed for one plant proposed as RFSS: *Botrychium oneidense* (blunt-lobe grapefern), although it was written prior to the discovery of this species on FLNF.

Monitoring Activities: The updated RFSS plant list was completed and approved in 2012, and FLNF staff now track 20 plant species: seven of these species occur only at Caywood Point, the most ecologically unique site on FLNF, another six occur in varied types of forests and/or hedgerows, and the rest occur in grasslands and thickets. The Forest botanist maintains a list of species to be evaluated during the next region-wide RFSS list update; this list includes four species, all of which were found in grasslands or their associated wetlands, ponds, or patches of woodland.

Monitoring activities in fiscal year 2012 included:

- Botanical inventory of 893 acres of grasslands (9) and shrub lands (4), with all rare plants and non-native invasive plants documented for each of the grasslands.
- Twenty-three new occurrences were found of the following RFSS:
    - *Carex tuckermanii* (1 population)
    - *Celastrus scandens* (6 populations)
    - *Gentiana clausa* (2 populations)
    - *Juglans cinerea* (7 populations)
    - *Lilium canadense* (1 population)
    - *Quercus bicolor* (4 populations)

- *Quercus muehlenbergii* (2 populations)

Monitoring activities in fiscal year 2013 included:

- Botanical inventory of 430 acres of grasslands (2) and shrub lands (9), with all rare plants and non-native invasive plants documented for each of the grasslands.
- Ten new occurrences were found of the following RFSS:
  - *Celastrus scandens (1 population)*
  - *Gentiana clausa (1 population)*
  - *Juglans cinerea (6 populations)*
  - *Lilium canadense (1 population)*
  - *Quercus bicolor (1 population)*

Monitoring protocols were consistent with NRIS TES Plants, the USDA Forest Service corporate database.

Evaluation and Conclusions: The highlight of fiscal years 2012 and 2013 monitoring was the large number of new populations of RFSS discovered. Over the past few years, inventory of open land on FLNF has been a productive way of locating new populations of RFSS, and new rare plants that are then evaluated for inclusion on the RFSS list.

Recommendations: As in previous years, the two recommendations for RFSS that occur in open habitats are to: 1) monitor grassland and shrubland plants after management activities; and 2) continue botanical inventories until all grassland and shrubland have been inventoried. Continue to search for small patches of *Lilium canadense* (Canada lily), that have been reported elsewhere on FLNF.

A management plan for *Veronicastrum virginicum* (Culver's root) where it occurs along a town highway is still needed.

As was recommended in previous years, develop a plan for managing non-native invasive plants (NNIP) at Caywood Point to prevent competition between NNIP and RFSS. The entire site still needs a more careful inventory and treatment plan in order to maintain viable populations of RFSS that occur there. Many projects have been completed within the Caywood Point area over the past few years, and fiscal year 2014 would be a great time to focus on developing a treatment plan.

There is still a need to continue cultivating local partnerships with individuals and organizations who are interested in rare plants in order to expand the capacity of FLNF staff to monitor rare plant populations.

In previous years, we reported a desire to develop a more standardized approach to monitoring RFSS. While the data collection protocol is standard, a more streamlined form that works well for both NYNHP and NRIS is still needed, as is an established monitoring cycle and spreadsheet to track monitoring efforts.

Evaluation Question:

To what extent are non-native invasive species impacting other Forest resources?

Monitoring Question: To what extent are Forest Service management activities contributing toward population viability for native and desired non-native species?

Monitoring Driver: Forest Plan Goal 2 and associated Objectives.

Background: The impact of non-native invasive plants (NNIP) of concern on FLNF has been monitored by surveying the extent of infestations in areas FLNF staff want to protect, or in areas most likely to be sources of seeds or plant propagules that could be dispersed to areas to be protected. It also includes determinations of invasiveness and the results of treatment efforts. Prior to fiscal year 2009, monitoring focused on surveying the extent of infestations, in preparation for developing a proposal to treat invasive plants across FLNF. In fiscal year 2009, treatment also began (beyond hand control of small infestations), along with monitoring of treatment effectiveness.

FLNF staff and volunteers have surveyed the extent of infestations along many roads, trails, and developed recreation sites (all are potential sources of seeds or other plant propagules for dispersal), as well as Special Areas, candidate Natural Research Areas, sites of known TES (Threatened, Endangered, or Sensitive Species), grasslands, woodlands, and project sites. In general, surveys of natural communities have focused on edges of habitats rather than interiors, such as woodland edge rather than deep into the woods, because edges tend to be more susceptible to infestation and are easier to access for surveys. Results of edge surveys can then suggest where to focus future surveys of habitat interiors.

Most sites surveyed have had infestations of one or more NNIP species, although in some cases infestations are small and isolated. Some species that had rarely been noted ten or more years ago (anecdotally, prior to formal data collection) are now widespread. Some ponds have been surveyed, and aquatic NNIP species have been found as well. The FLNF list of NNIP species (and species groups) includes two trees, twelve shrubs, two woody vines, two herbaceous vines, eight herbaceous species, two grasses, and three aquatic plants. Late in fiscal year 2008, an environmental assessment (EA) for *Invasive Plant Control* was completed, and implementation began in fiscal year 2009.

Monitoring Activities: All data was gathered using the USDA Forest Service Natural Resources Information System (NRIS) protocol, to be entered into the NRIS corporate database. All sites monitored provide baseline information that can be used during ongoing implementation of the 2008 *Invasive Plant Control* project. Grasslands were monitored because NNIP can affect forage quality for domestic animals and habitat for wildlife, as well as compete for water, sunlight, and nutrients with rare plants (RFSS) that occur there.

The following monitoring activities occurred in fiscal years 2012 and 2013:

- Nine grasslands and four shrub lands (893 acres), and two grasslands and nine shrub lands (429 acres) were inventoried both early and late in the growing season for all vascular plants during fiscal years 2012 and 2013, respectively. This included both rare plants and NNIP to provide a fairly complete list of vascular plants occurring in each of the grasslands.
- Following broadcast herbicide in nine grasslands (over 900 acres) in fiscal year 2012, and seven grasslands (over 1,050 acres) in fiscal year 2013, initial monitoring occurred to determine if treatment was effective in killing knapweeds and thistles.

Evaluation and Conclusions: While monitoring indicated the extent of NNIP infestations, FLNF staff does not currently have a means of quantifying their effect on other resources. Monitoring protocols were otherwise efficient and easy to use.

Grasslands and shrub lands for which botanical inventory was completed all had infestations of several species of NNIP. Common woody NNIP species in grasslands were multiflora rose, common buckthorn, Morrow honeysuckle, and autumn olive. Privet and barberries also occurred in some places. Common

herbaceous NNIP species were garlic mustard, thistles, and knapweeds; leafy spurge and purple loosestrife occurred in one place each. Common reed, a large grass, was found at one site. Swallowwort, bittersweet, and periwinkle, all vines, occurred in a few sites. Curly leaf pondweed, an aquatic NNIP, occurred in most ponds. Most sites would require an extensive investment of time and funding to control all the infestations that occur there. Japanese knotweed was not found at any sites inventoried and remain relatively uncommon on FLNF.

Implementation of NNIP treatment activities included in the 2008 *Invasive Plant Control Project* EA continued during fiscal years 2012 and 2013. Broadcast herbicide was used to treat knapweeds and thistles in over 900 acres, and 1050 acres of grasslands in fiscal years 2012 and 2013, respectively. Hand-application of herbicide was used to treat infestations of thistles and knapweeds in over 50 acres of riparian areas and upland sites inaccessible to broadcast spray equipment within five grasslands. Initial monitoring indicated that the herbicide resulted in good control of knapweeds and thistles in many places, with poorer control in a few locations. Hand-pulling was used to control 4.81 acres of Japanese stiltgrass along Breakneck Creek, the only known site on the FLNF.

Recommendations: Effectiveness of NNIP treatments should continue to be monitored, followed by adaptive management.

In the Cotton Mill project area, monitoring and follow-up herbicide spot-treatments still need to occur, following the extensive manual control project there in fiscal year 2010.

Experimental grazing carried out as a collaborative effort with Cornell University began in fiscal year 2009 and was continued through fiscal year 2012, but final data reports are still needed.

Previously we reported the need to continue grassland botanical inventory and monitor the effect of NNIP on other resources (forage, wildlife habitat). Only one grass land still needs botanical inventory, but several shrub lands still need botanical inventory.

We also previously reported monitoring to determine effectiveness after two years of treatments would be necessary to determine if additional treatments will be needed. That has happened, and a third year of treatments has occurred in some places. We also reported previously that many other grass lands needed a first round of broadcast spray treatments, and that has occurred in a few places, as well. Ongoing monitoring and treatments, as needed, are recommended.

The Vesa Road site, where garlic mustard and periwinkle have been treated in the past, followed by planting native species, needs additional control of these and other species.

Monitoring natural communities adjacent to infested trails and roads to determine the extent to which these infestations are predictive of infestations on adjacent less disturbed land is still needed.

Continuing to develop partnerships and collaboration to address wide-spread and abundant NNIP infestations across FLNF is an ongoing need, as is increasing education and outreach to facilitate public awareness and involvement in this facet of natural resource management. This includes the need to share information about known NNIP infestations along roads maintained by local towns.

Timber

Evaluation Question:

Are lands adequately restocked according to stocking surveys?

Monitoring Question: Are harvested lands adequately restocked according to Forest Plan goals?

Monitoring Driver: The National Forest Management Act requires that suitable timberlands are adequately restocked following harvest.

Background: The National Forest Management Act (NFMA) of 1976 provided requirements that all stand regeneration harvest activities on suitable timberlands that create forest openings be quickly reforested. For FLNF, this requires that any harvest activity effectively beginning stand-origination is reforested within 5 years of the harvest event that creates the opening. This monitoring item helps to determine if the Forest is meeting the requirements of NFMA.

Reforestation monitoring is an integral part of National Forest management operations and has standardized requirements. Monitoring protocols have been rigorously tested, certifications of successful reforestation have requisites, and procedures are detailed in Forest Service Handbook (FSH 2409.17, Silvicultural Practices). Reforestation success is measured on new plantations or harvested stands in years one, three, and five (if needed) following the planting or other regeneration effort. Successful reforestation is assured when new stands are certified as "free to grow" by year five.

Monitoring Activities: No stocking evaluation surveys were scheduled or completed in fiscal years 2012 or 2013.

Evaluation and Conclusions: Not applicable for fiscal years 2012 and 2013.

Recommendations: Continue to conduct first, third, and if necessary fifth year plantation survival evaluations to determine if survival and growth of any new planted stock is adequate following reforestation efforts.

Evaluation Question:

Is the maximum opening size for even- aged harvesting being met and are we accomplishing resource objectives. Are we meeting wildlife habitat regeneration objectives in both size and quantity of openings by habitat types?

Monitoring Question: Are maximum size limits for harvest areas appropriate, and should these limits be retained?

Monitoring Driver: Forest Plan Forest-wide S&G 2.3.5 Openings, Standard S-1, and NFMA requirement for opening size.

Background: Temporary openings created through even-aged regeneration harvests should not exceed 30 acres in size; exceptions may include salvage of timber resulting from natural catastrophes caused by fire, insects, disease, ice or windstorm.

Monitoring Activities: Monitoring of the Cotton Mill Timber sale in June 2010 showed the one even-aged unit in that sale was within the size limits. The clearcut unit, which created a temporary opening,

was 11.25 acres in size. There were no permanent openings created with this sale. No additional harvesting has occurred since 2010.

Evaluation and Conclusions: The 30-acre size limit for temporary openings created by even-aged regeneration harvest has not been exceeded. Forest Service interdisciplinary teams have recently discussed designing openings that approach the 30-acre size limit to address habitat needs for bird species that require larger openings. This continues to be difficult to implement due to public concern over creating forest openings and may affect the ability to achieve the Forest Plan desired future condition for acres of treatments, age classes and habitat. In many cases, stand acres proposed for this type of harvest are reduced to maintain other resource conditions such as deer wintering habitat, visual quality guidelines along roads, trails and visually prominent locations or to buffer wetlands. Larger sized units may help in ecosystem restoration where removal of non-native monoculture plantations may be desirable.

Recommendations: Forest Service staff will continue to incorporate openings through even-aged management to the extent possible in FLNF vegetation management proposals.

Special Forest Products

Evaluation Question:

How many and what special forest products (SFPs) do people gather? How many require permits, and how many permits were issued annually, for which products/species? How many requests for permits were denied? How many SFPs are being evaluated for permit requirement?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 8 and associated Objective.

Background: The Forest Service currently issues permits for gathering of the following special forest products on FLNF: saplings, dead/down wood, and firewood. The Forest Service evaluated this level of gathering during Forest Plan revision, and found it to be ecologically sustainable, but little was known about gathering of other desirable products for which permits are not ordinarily issued. During Forsest Plan revision, Marla Emery of the Northern Research Station (NRS) in Burlington, VT drafted a proposal to assess the uses of special forest products in and around FLNF, which was not implemented at that time. FLNF staff believes this assessment would still be a valuable tool to help the agency identify which species require permits and what permit rules should apply. This will lead to greater certainty both within the Forest Service, and among the public, regarding which products can be collected sustainably, in what locations, and what type of permit or restrictions apply.

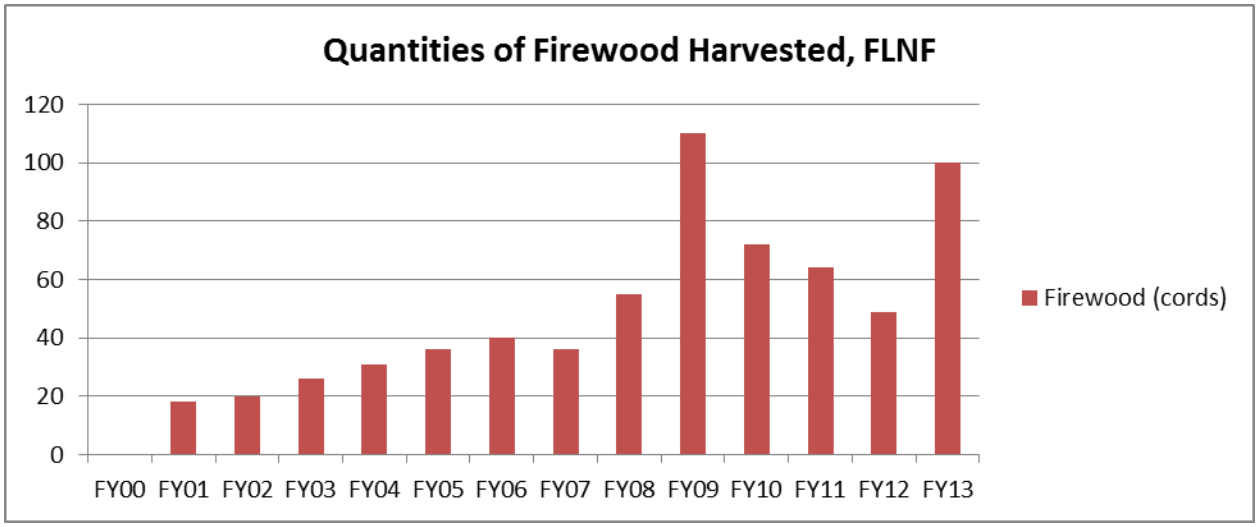
Monitoring Activities: Currently, FLNF staff monitor the quantity and type of SFPs that had permits issued for gathering. In fiscal year 2012, 24 permits were issued for 49 cords of firewood, while in fiscal year 2013, 44 permits were issued for 100 cords of wood. No other SFP permits were issued during this time.

Illegal tree cutting and removal is tracked annually on FLNF. Often this is related to illegal firewood removal, although it also includes cutting trees around campsites as well as theft of valuable timber. Generally, woodcutters are complying with permit specifications. During fiscal year 2012 there was only one tree cutting/damaging incident reported, with no warnings, violation notices, or mandatory court appearances. There were no incidents of removing timber (primarily firewood) reported. In fiscal year 2013, there were two tree cutting/damaging incidents reported, with one forfeiture of collateral, and there

was one tree removal incident reported, for which a warning was given. No other SFP permit compliance issues or illegal harvesting were noted in fiscal years 2012 or 2013.

Evaluation and Conclusions: Firewood is the only product that has been gathered over the past 14 years on FLNF. This is the fifth year in a row that firewood permits have exceeded 30, which has become a stable average over the past seven years, although it is well above the long-term average of 21 permits.

Since 2002, the quantity of firewood harvested has steadily increased, doubling from 2008 to 2009, and then sliding back a bit from 2010 to 2012 (see chart below). Fiscal year 2012 had the lowest volume harvested (49 cords) since 2008, but was still higher than the long-term average of 47 cords. The volume then spiked again in fiscal year 2013 to levels like those in fiscal year 2009. Average quantities of firewood harvested over more recent times are at higher levels than the long-term average of 47 cords; the 5-year average is now around 79 cords, and the average since 2007 is 69 cords. Harvesting levels on FLNF since 2000 had not exceeded 40 cords until fiscal year 2008, and since then have not fallen below that level. While it was likely that the initial 2008 increase in firewood use was related to the economic collapse at that time, it seems that a greater level of use has not declined since then. This could be attributed to the increase in efficient woodstoves, the increased emphasis on local sources of energy, and a ready and inexpensive supply of available firewood on FLNF, among other possible causes.



With differences in quantities of firewood harvested over the past six years fluctuating dramatically, it is difficult to determine if there will be higher demand but with larger variability from now on, or whether the trend will stabilize at some point. Clearly there is a trend toward more firewood gathering on FLNF. The FLNF is actively evaluating opportunities for additional firewood harvesting to meet this demand. Several factors support the sustainability of this increased use, including (1) timber harvesting on FLNF is well below the Forest Plan Allowable Sale Quantity; (2) the focus of firewood harvesting is on readily accessible dead and down trees; and (3) an increasing abundance of dead and dying trees due to the increasing age of the forests within FLNF.

Other Uses

There have been no requests for any historically gathered products other than firewood on FLNF, such as Christmas trees, boughs, and small trees. The Forest Service continues to allow the gathering of these types of products which have occurred in the past and is open to gathering of other similar products. The following SFPs have been identified as being of concern in the FLNF area in terms of sustainable harvesting: ginseng, ladyslippers, wild leeks, fiddleheads, sweetgrass, and black ash. Occasionally the

Forest Service receives queries about gathering products such as ginseng or goldenseal, as well as other plants. Ginseng and goldenseal are not known to occur on FLNF, and if they were found, they would be protected plants as their populations would be small and vulnerable. Ladyslippers are already protected from harvesting in NY State including FLNF. Leeks, fiddleheads, and other plants, so long as they aren't protected by the state or FLNF and are gathered in small quantities for personal use, do not require a permit. Although this level of personal use is not tracked, the queries received for them are infrequent – perhaps one or two per year on average. The Forest Service does not currently permit collection of larger quantities of the SFPs of concern, although it may in the future. The Forest Service is interested in working collaboratively with gatherers to identify SFPs of interest to local communities, and to create sustainable gathering plans for these products.

Recommendations: Continue to seek opportunities to collaborate with the Northern Research Station and gatherers on the development of strategies for sustainable harvesting of other SFPs on FLNF, including those that are of concern like wild leeks and fiddleheads. Identify locations of species of concern for SFP gathering on FLNF.

Rare Features

Evaluation Question:

To what extent are rare and outstanding biological, ecological, or geological features on the FLNF being protected, maintained, or enhanced? To what extent are ecological types on the Forest represented within the ecological reference area network? To what extent do ecological types recognized on the Forest accurately represent the diversity of ecosystems and potential natural vegetation on the Forest?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 6 and associated Objective.

Background: The significant ecological features to be monitored and evaluated for this question are listed in Table 3.10-3 of the Final Environmental Impact Statement (FEIS) for the revised Forest Plan (FEIS, p. 3-213). The primary emphases of monitoring to address this question during plan implementation will be (1) to evaluate these significant ecological features in terms of quality and disturbances, and (2) to maintain them at their current level of quality or higher. This may mean controlling incursions of non-native invasive species and all-terrain vehicles, and it could mean using prescribed fire to maintain a natural disturbance regime. Monitoring will occur before and after any management activities to determine if actions contributed to or detracted from composition, structure, and function of the sites in relation to their values.

In addition to the known significant features, 14 stands were identified during plan revision as old forest areas of interest. These stands include trees of at least 100 years of age that are not currently in one of the reference area designations (Future Old Forest, Ecological Special Areas [ESAs], Caywood Point Recreation and Education Area, and candidate Research Natural Areas), and that records suggest have had limited forest management. While the reference area designations include some stands that are of similar or older age, this group of stands identified during revision has not been evaluated in the field as to their ecological condition, quality or evidence of disturbance. The Forest Service intends to work with partners such as Hobart and William Smith College and local volunteers to evaluate these areas and determine if they should be managed differently than they are currently.

A monitoring schedule was established in fiscal year 2006 in which on average two significant sites are visited every year, and every site is visited at least once every five years. Sites in which concerns are

identified may be revisited more frequently. Indicators were also identified to be used as measures to address this evaluation question. These indicators include number of conservation actions, ranked condition of the sites (A-D ranks based on Natural Heritage Program [NHP] methodology), and number of acres surveyed for rare or outstanding features. During early 2007, existing NHP monitoring protocols were evaluated and adapted for use during monitoring. These protocols were tested during the summer field season.

Monitoring Activities: During fiscal years 2012 and 2013, monitoring of significant ecological features was focused on candidate research natural areas (cRNAs) to prepare Establishment Records (ERs) for these sites. Two visits were made to Sawmill Creek Ravine cRNA, one in 2012 and one in 2013, to map natural communities and evaluate conditions. One visit was made to Hector Oak Woods in 2013 to relocate a rare plant, *Baptisia tinctoria*, and to evaluate conditions. No hemlock wooly adelgid (HWA) was noted at Sawmill Creek, although it will likely appear there in the next five years. Non-native invasive plants (NNIP) were noted as significant problems along the boundaries of both cRNAs. User-created non-system horse trails were noted at both cRNAs. The trail at Hector Oak Woods is likely facilitating the movement of NNIP from the edges into the interior, as it passes through the core portion of this cRNA that was originally free of NNIP. Now several patches of small multiflora rose were noted from within the core area of the cRNA. At least one more field visit to Hector Oak Woods will be needed to complete the ER. The data from Sawmill Creek is sufficient to complete the ER for that area.

Blueberry Patch Swamp was visited in June 2012 to evaluate its quality as a reference area for wetland restoration in other parts of FLNF. An area of drained swamp white oak swamp was noted north of Picnic Area Road across from Blueberry Patch Swamp, and it appears that it was once connected to the swamp prior to the construction of the road. The Forest Service is investigating the feasibility of restoring wetland function to this northern extension of the Blueberry Patch Swamp.

Evaluation and Conclusions: Within the past seven years, all but one of the significant ecological features tracked was monitored. This first set of monitoring was completed by the Forest ecologist to gather natural community data and to better assess monitoring objectives and cycles for these sites. While depending on one individual to monitor these sites has been challenging in terms of budgets and schedules, once the first round of monitoring is completed the monitoring tasks can then be handed off to other biologists and partners when available.

Monitoring approaches during this first round have been variable, depending on time and resources. When monitoring is handed off to other staff, protocols will need to be more firmly established. The monitoring continues to demonstrate the importance of gathering precise GPS coordinates for special features and rare plant populations so they can be relocated efficiently. Compiling, maintaining, and updating the data gathered during these monitoring efforts continues to be a challenge, but will need to be completed to develop monitoring objectives for the sites. Looking forward, coordinating among individual monitors will be important to avoid duplication and leverage the capacity of program areas and organizations to conduct monitoring more strategically based on complementary skills.

The presence and abundance of NNIP continues to be a concern with FLNF significant ecological features. Very few areas are un-infested, although some areas and portions of areas appear to have limited amounts of NNIP which can be more effectively controlled than in areas where they are pervasive. Most of the Special Areas will have NNIP infestation concerns that will need to be addressed. It is important to continue to document these infestations on the NNIP program forms immediately following the monitoring so that information and management can be effectively coordinated. It is also likely that because of NNIP concerns and other potential issues, sites will need to be visited more frequently than the five-year cycle developed in 2006, particularly if management actions are undertaken.

It will be important to prioritize sites for monitoring with least disturbed examples possibly being visited less frequently.

Seven years of monitoring have found that impacts to the integrity of ecologically significant sites and features on the FLNF are most often associated with recreational uses and further complicated by the heavy NNIP infestations. A stronger relationship between recreation and ecology staff is important to effectively mitigate some of these impacts. The ecology and recreation programs continue to strive toward a close working relationship so that management of recreation use within these special areas can support their ecological integrity.

The Forest Service continues to assess additional data and analysis required to determine final status of Old Forest Areas of Interest (OFAIs) identified and evaluated by Kathy Engel, Susan Weiner, Dr. Peter Marks, and others (see the FY08 Monitoring and Evaluation Report). The Forest Service agreed in 2007 to limit vegetation management within these OFAIs until final status determinations can be made, assuming these areas were validated as being at least 100 years old since stand origin, with limited levels of disturbance. Data provided in 2008 suggested that all the stands visited so far remain viable candidates in the evaluation process.

Recommendations: Monitor the remaining unvisited ecologically significant sites and then spend the following year conducting evaluations and preparing reports, including monitoring objectives and cycles. Use this information to determine how many sites to monitor annually and to prioritize management actions. Consider developing a volunteer corps of monitors for these sites in the future once they have all received at least one visit by Forest Service staff.

Work with recreation and botany staff to develop action plans for all sites visited so far that require NNIP control and other mitigations to address concerns noted. Continue to monitor ongoing work at Caywood Point and to develop a restoration plan to address NNIP and hemlock wooly adelgid issues and mitigate recreation development issues.

Continue working with partners on the evaluation of OFAIs in the context of all areas identified as ecologically significant (e.g. ESAs, cRNAs, and Future Old Forest [FOF]). Develop a process for this broader type of assessment that will produce recommendations for appropriate management designations for both OFAIs and other areas of ecological significance. Consider partnering with NY NHP to target quantitative plot data gathering in old forest patches as well as in the "reference area network" of ESAs, cRNAs, Caywood Point, and FOF.

Insects and Disease

Evaluation Question:

To what extent have destructive insects and disease organisms increased?

Monitoring Question: Are insect and disease levels compatible with objectives for maintaining healthy forest conditions?

Monitoring Driver: Forest Plan Forest-wide and Management Area Standards and Guidelines.

Background: This monitoring item helps track trends in insect and disease (I&D) activity on the FLNF. Monitoring of insect and disease pathogens can be employed to determine when, how much, and what kinds of management actions, if necessary, should take place to prevent or suppress undesirable I&D agents. As FLNF provides a portion of host material for a variety of I&D agents found within upstate

New York, this monitoring element is best undertaken in a more "landscape" context with adjacent landowners, municipalities and local, state and federal monitoring organizations. For instance, monitoring of emerging I&D agent threats, such as the emerald ash borer, an exotic insect pest, has become a national monitoring effort. In this case, early detection efforts are the combined focus of forest research and management organizations at the state, federal and university levels.

Monitoring Activities: In fiscal years 2012 and 2013, a number of insect and disease monitoring efforts were undertaken on the Finger Lakes National Forest, in concert with numerous individual and agency partners. Durham (NH) Field Office (DFO) Forest Health Protection personnel coordinated aerial and ground surveys to detect and assess impacts of a variety of insect and disease agents.

An aerial survey including the FLNF was flown in 2012 and 2013. The surveys mapped over 782,000 acres of damage in New York, mostly from defoliation, discoloration, and mortality. Almost two-thirds of the damage was a result of drought. Other significant causes of damage were attributed to forest tent caterpillar, frost, gypsy moth, flooding/high water, beech bark disease, and other forest pests. Results can be found at the Forest Health Protection website: http://na.fs.fed.us/fhp/ta/av/index.shtm

Monitoring is increasing here because risk is increasing for more non-native insect and disease pests to infest the Forest. Currently sirex wood wasp, and hemlock woolly adelgid (HWA) are found on FLNF and emerald ash borer (EAB) has been found in adjacent county lands. There is also potential for thousand canker disease (TCD) to afflict black walnut as well.

In response to HWA, *L. Nigrinus* beetles were released at the Caywood Point site in October 2009. Monitoring in the fall 2010 indicted the beetle had become established at the site as was hoped. However, the HWA population at Caywood point continued to grow through 2011 and surveys of the region in the spring 2012 showed significant population expansion (Whitmore, personal communication). Population expansion and hemlock mortality was confirmed at Caywood Point during surveys in the spring and fall 2012. It is believed the mild winter of 2012-2012 failed to reduce overwintering HWA, resulting in a massive and damaging HWA population. Despite the establishment of *L. nigrinus* at the site, significant hemlock mortality is expected unless further management is conducted.

Mark Whitmore (Cornell University), Will Brendecke (Forester, FLNF), Isabel Munck and Michael Bohne (FHP, DFO) surveyed Caywood Point on October 25, 2012. It was determined that the high value hemlocks at the site should be treated with insecticide to prevent further mortality. A biological evaluation for the proposed suppression and prevention project was completed by Forest Health Specialists from the DFO in fiscal year 2013. The Forest contracted out the systemic application of imidicloprid and basal bark application of dinotefuran on 300 large hemlocks covering 134 acres in seven stands at Caywood Point.

Table 2-8 lists specific insects and diseases tracked on FLNF during fiscal years 2012 and 2013. Also listed are the organizations or agencies involved in, and the dates and types of I&D monitoring efforts used.

Table 2-8: Insect and disease tracking for fiscal years 2012 and 2013.

Insect or Disease Agent	Organization & Date of Monitoring	Type of Monitoring Effort
Wood wasp (*Sirex noctilio*)	Northeastern Area State & Private Forestry, USDA Forest Service, June 2011.	Preliminary hazard ratings from destructive sampling of individual trees; collection of this wood wasp for rearing at Cornell lab.

Insect or Disease Agent	Organization & Date of Monitoring	Type of Monitoring Effort
Predatory wasp *(Cerceris fumipennis)*	Northeastern Area State & Private Forestry, USDA Forest Service, July 2009.	Surveys for predatory wasp nests to locate emerald ash borers and beetles it collects.
Emerald ash borer (*Agrilus planipennis*)	Northeastern Area State & Private Forestry, USDA Forest Service, July 2011.	Emerald ash borer visual tree surveys in campgrounds, as firewood movement may provide first introduction of this insect.
Hemlock wooly adelgid (*Tsugea adelges*)	Cornell University Entomology Dept., NY DEC, FLNF and partners, October 2011 and October 2012.	Walk thru surveys at Caywood Point with foliage inspection. Mapping/ description of infestation site.
Hemlock wooly adelgid (*Tsugea adelges*)	Northeastern Area State & Private Forestry, USDA Forest Service, October 2012	Biological evaluation for suppression and prevention treatments.
Tooth-necked fungus beetle *(Laricobius nigrinus)*	University of Massachusetts, Amherst Department of Plant, Soil and Insect Sciences, Division of Entomology, August 2011.	Evaluate biological control efficacy of releases of inland strain of *L. nigrinus* beetles at Caywood Point. Monitoring finds the beetles are still established.
Thousand Cankers Disease (*Geosmithia morbida*)	NY DEC	Ongoing statewide surveys.

Evaluation and Conclusions: No mortality was noted from defoliators in fiscal years 2012 and 2013. Overstocked pine plantations are showing signs of root rot centers from a secondary root disease, most likely *Armillaria sp*. Assessment of several stands is planned for FY2013 by a Pathologist from DFO to look for presence of heterobasidion root disease (HRD) as well as other diseases and to help inform on future prescriptions and stand treatments. No evidence was found indicating the presence of emerald ash borer (EAB) or thousand canker disease (TCD) on the Forest.

HWA infestations at Caywood Point are increasing despite successful establishment of beetles. Chemical treatment for these stands has begun. Beech bark disease continues to be a damage agent on the Forest. Native pests and diseases such as white pine weevil, armillaria root rot and ash yellows continue to affect forest health.

Recommendations: Consider including areas of mortality or decline in future integrated resource planning. Timber harvest and timber salvage operations can be used to help restore forest health and native species to FLNF forested stands. The Finger Lakes Invasive Pest Study (FLIPS) is being conducted by Forest Service staff to assess stands needing treatment or to help stands better live with current or future infestations of gypsy moth, EAB, Sirex wood wasp, HWA and root diseases. Field assessments and inventory are currently being conducted.

Continue annual aerial and on-the-ground insect and disease detection monitoring efforts with local neighbors, partners and Forest staff. Evaluate treatment options to control HWA given recent population growth in surveyed areas. Continue trap tree study for Sirex and increased monitoring efforts by Forest staff for seeking presence of new invasive species such as EAB. Arrange for DFO pathologist visit and census of stands thought to be afflicted with HRD and other diseases.

Fire

Evaluation Question:

How many wildfires were suppressed with no reportable accidents/injuries or damage to private property? How many acres of private property burned from fires with ignition on Forest Service land?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 5 and Objective.

Background: Wildfires are suppressed in a manner that protects firefighter safety and avoids damage to private property.

Monitoring Activities: No wildland fires were reported in fiscal year 2012. Three wildland fires were reported in fiscal year 2013 representing approximately one acre burned. Of the three small ~1/4 acre fires, one fire was caused by a lightning struck oak tree, the other two were determined human caused. No injuries were reported, and no private property was burned.

Evaluation and Conclusions: Based on vegetation conditions and observed fire weather conditions, fire preparedness and other fire management actions were adequate and consistent with the level of risk.

Recommendations: Although fire risk is low, fire staffing and other preparedness actions should be continuously monitored during fire season. Discussions with Volunteer Fire Departments continue to be especially important to communicate fire management goals where Forest Service trained firefighters are not available.

Evaluation Question:

To what extent have hazardous fuels been reduced?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 5 and Objective.

Background: There is concern that increased fuel loading across FLNF will lead to an increasing risk of larger wildfires occurring within the wildland urban interface areas. Currently, timber harvesting and mechanical treatments are the primary management tools used to reduce hazardous fuels and meet ecological objectives on FLNF. In addition to fuels reduction through mechanical and harvest treatments, fire provides an additional tool for mimicking natural processes and disturbance. There are different effects on resources when using fire versus timber management as a tool to achieve ecological objectives and fuels reduction. Fire contributes to a host of functions and processes in ecosystems, and reduces accumulations of organic material, which in turn reduces wildfire hazard. It recycles nutrients and alters soil chemistry, aids in decomposition, and influences soil structure and stability. Fire effects can vary depending on fire intensity, severity, and frequency, the primary factors that define fire regimes.

Monitoring Activities: Prescribed burns were implemented on two units for 115 acres specifically for hazardous fuels reduction in fiscal year 2012. No acres were mechanically treated for the primary purpose of hazardous fuels reduction. However, range activities provided secondary benefit for hazardous fuels reduction on 1,613 acres of pasture adjacent to wildland urban interface. These pastures were treated with mowing. During fiscal year 2013, there were 365 acres were treated with prescribed fire.

Fire Regime Condition Classes, both pre and post treatment observations were made. Post treatment observations showed a move to an improved condition class, and all treatments were reported in Forest Activities Tracking System (FACTS).

Table 2-9 shows the eleven-year trend for prescribed fire implemented to reduce hazardous fuels on FLNF.

Table 2-9: Acres burned to meet forest fuel reduction objectives by fiscal year.

Fiscal Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed Burn (acres)	186	159	1	0	151	90	81	85	0	115	365

Evaluation and Conclusions: All treatments were successful to reduce hazardous fuels. Other benefits from prescribed fire include maintaining range habitat, restoring ecosystem functions, and improving wildlife habitat.

Recommendations: Continue the use of prescribed fire FLNF as a vital tool for the reduction of hazardous fuels, to maintain wildlife and range habitat, for timber stand improvements, and to restore and enhance ecosystems. Mechanical treatment should also be encouraged to supplement prescribed fire treatments to effectively reduce larger diameter woody vegetation that may not be fully treated utilizing only prescribed fire. Close coordination between Forest Service fire and wildlife staff should continue to strengthen out-year planning.

Evaluation Question:

Is prescribed fire being effectively used as a tool to meet management objectives set forth in the Forest Plan? Are prescribed burns meeting the fire effect objectives set forth in each burn plan?

Monitoring Question: What are the effects of management practices prescribed by the 2006 Forest Plan?

Monitoring Driver: Forest Plan Forest-wide Standards and Guidelines 2.3.11 - Fire Management.

Background: The two most common resource management objectives for prescribed burns in fiscal years 2012 and 2013 were to maintain forest openings and apple orchards for wildlife habitat and to reduce hazardous fuel loadings. Specifically, the objectives as expressed in the prescribed burn plans most commonly aimed to 1) reduce fuel loading within the unit by 40 to 90 percent of 1 and 10 hour fine fuels and by 20 to 60 percent of 100 and 1000-hour fuels (common for most wildlife openings); or 2) scorch or kill 40 to 80 percent or more of invading woody vegetation consisting of shrubs and seedling/sapling sized trees. These burn objectives help to reach resource objectives to eventually promote an increase of native grasses and forbs to cover approximately 90 percent of the unit by repeated prescribed fire treatments, maintaining an open grass like conditions.

Monitoring the effectiveness of prescribed burns helps support decisions to use fire to meet certain objectives during the planning process.

The current FLNF monitoring program lacks definition and consistency and may be inadequate to support the planning process for prescribed burn treatments. Use of FIREMON is too labor intensive and costly so there is a need for simpler methods that are more directly relevant to management objectives.

Goals for Monitoring:

1. Each prescribed burn plan will identify specific objectives that are measurable and a monitoring plan that addresses the effectiveness of the burn in meeting those objectives.
2. Fire should work with other resource areas for monitoring the success of those objectives which fall within other resource areas. Additional side effects may also need to be monitored (for example fire is primarily responsible for establishing protocols for fuels objectives; wildlife would measure success if the primary reason is wildlife habitat improvement. If the objective is fuels, wildlife still may need to measure the effects on wildlife.)
3. Monitoring methods will be practical and in accordance with complexity of the objectives.
4. Monitoring must be cost and labor efficient.
5. The monitoring approach to field-based data collection and data analysis may involve methods tiered to magnitude of the burn.

If the primary objective for the burn is the reduction of hazardous fuels, the need for fuels reduction and level of risk is explained during the NEPA planning process. Also developed during the planning process is the explanation of what current conditions exist in the unit and the desired condition for fuels specific to the hazard. Objectives relating to fuel reduction should answer the following questions: 1) how much fuel do we expect one burn to reduce; 2) are subsequent burns needed; 3) how long after the burn will conditions be maintained; and 4) what will the reduction be by percentage or by total amount?

Monitoring Activities: In order to measure success of these burns, the Forest Service burn boss and other fire management staff perform periodic observational field trips to inspect the site of each burn unit. Most often photographs are taken and filed, to be reviewed with pre-burn photographs and observations that will be taken at sites in the future. During fiscal years 2012 and 2013, Forest Service fire management staff kept a daily log for each prescribed burn including observations on the day of the burn before, during and directly after burning activities. There is also a report form that includes records for "Test Fire" and "Prescribed Fire Results" specific to each objective. The weather and fuel moistures before and during the burn are recorded along with fire behavior for the test fire and main burn operations. This captures the burn boss and fire effects monitors' notes related to achieving objectives.

Monitoring focuses on measuring pre- and post-dead fuel accumulations as well as examining fire's effects on reducing woody encroachment (mortality). For example, immediately following a prescribed fire, the burn boss can survey the entire unit and estimate the percentage of fine fuel consumption compared with what they observed earlier in the day, prior to the burn. Similarly, 10-hour fuel reductions can be observed. This report is detachable from the burn plan file and can be stored and revisited for future monitoring activity, which can also be recorded on the same form. Photo points can be stored with the form with locations and notes included. Site disturbance, establishment of certain species and the eventual restoration of certain species will likely be revisited and recorded in subsequent reviews of the unit.

Monitoring level protocol is determined during the planning stage of the burns based on the objectives for that unit (Table 2-10). Post monitoring forms are used for every level of monitoring. More than one level of monitoring may apply depending on funding and labor availability as well as discretion of the fire managers and other resource advisors.

Table 2-10: Prescribed fire monitoring levels.

Level	Explanation
1: Ocular Estimates	Fire manager walks around the unit both before and after the burn and gets a feel for success of the burn. Records and files qualitative observations on monitoring forms.
2: Photo Points	Establish locations for repeatable "before and after" photos from the same exact perspective and cardinal direction. Number of photos per acre need to be determined. Photos are filed with the qualitative report.
3: Transects	Transects are used to measure certain elements before and after the burns. The transect measures the element that best describes the success of the objective. (example: 10 randomly located 100 foot transects to measure surface fuels before and after burning that shows a reduction in fuels and fire risk).
4: Plot Data	Establish locations for repeatable "before and after" plots within the unit and measure certain ecological elements. These can include vegetation and fuels. Options: Use FireMon methods or parts of the FFI system and file and analyze within the national database in addition to local project folders. Use FSVeg data and stand exam methods to measure key attributes.

Evaluation and Conclusions:

- It isn't possible to measure every effect related to prescribed burning. It will be necessary to choose specific key elements relating to objectives and other important or sensitive variables.
- Preconditions need to be identified and measured at a similar level to post conditions, for comparison.
- Post conditions will likely need to be measured at intervals following the burn. Intervals should be determined based on objective and attributes being measured.
- Due to the nature of the FLNF burn program and planning process, adaptive management will likely be tied to monitoring which strengthens the need for a robust monitoring program. It is also likely the monitoring program itself will be subject to adaptive management as we learn what works through trial and error.

Recommendations: Discuss ways to refine the monitoring program. Determine answers to the following questions:

- How do we determine the level of monitoring needed?
- How can we best work with other resources to share monitoring costs and labor when objectives overlap?
- How do we determine objectives that are specific enough to measure and which elements will show success of our burns?
- How many photos, transects or plots are needed and how do we determine details for data collection?
- How can we efficiently tie our monitoring into our already busy schedules?
- Do we have the time and funding and if not, how do we make it work?
- Will it work to pay contractors?
- Can we partner with other organizations?
- Would we be able to work with an academic program or organize volunteers?
- Is it possible to seek expertise from Forest Service research branch to determine effective monitoring protocol and implementation?

Develop an integrated monitoring group (with interdisciplinary resources represented such as soils, fire/fuels, and wildlife) to conduct pre-, post-, and day of prescribed burn fire effects monitoring to ensure Best Management Practices and resource objectives are being met.

Partnerships, Information and Education

Evaluation Question:

Are partnerships active and effective on the FLNF and are Forest Service personnel participating in partnership activities?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 15 and associated Objectives.

Background: Partnerships and collaboration are essential throughout all levels of the Forest Service. Forest Service staff has worked with partners to achieve social, economic, and ecological goals. Each year, we continue relationships with existing cooperators and develop new ones. This collaboration has resulted in increased public service and improved land stewardship, both which enhance the Forest Service's effort to meet desired conditions. This overview will share information on both formal agreements and informal cooperative efforts. Information is presented as a collective report for the Green Mountain and Finger Lakes (GMFL) National Forests as the information is tracked regionally in a combined report.

Monitoring Activities: The Forest Service uses many types of agreements to document work with other organizations and entities. Each of these has specific Congressional legal authority and requirements. The appropriate instrument depends on what the partnership will accomplish, who will benefit, and who is providing funds. The Forest Service must have appropriate statutory authority prior to entering into any agreement, which could result in the use, obligation, or other commitment of any Forest Service resources.

During fiscal years 2012 and 2013, the Forest Service worked with many partners or partnership groups. Much of the trail and resource maintenance, conservation and education efforts and wildlife conservation programs and projects would not be possible without the help of our many valuable partners. Partners include individuals, non-profit agencies, other federal and state agencies, profit organizations, and universities and colleges.

Partnership Agreements

A total partnership value to the GMFL National Forests of $3,655,804 was realized in fiscal year 2012. There were 53 new agreements and 44 modifications to existing agreements processed. The Forest Service obligated $2,150,448 to partners to complete agreed upon projects, provided $526,954 in support to those projects, and received $415,441 in value directly from the partners in cash, materials, and labor.

A total partnership value to the GMFL National Forest of $5,036,294 was realized in fiscal year 2013. There were 19 new agreements and 62 modifications to existing agreements processed. The Forest Service obligated $4,343,544 to partners to complete agreed upon projects, provided $213,803 in support to those projects, and received $257,216 in value directly from the partners in cash, materials, and labor.

Contributions went to a variety of partners for the work they provided to support the Forest Service. Cooperative labor and funding were provided by both the Forest Service and partners to support law

enforcement efforts, roads maintenance, wildlife habitat improvement, watershed restoration, trail improvements, visitor information and recreation.

Volunteer Agreements

There were 685 volunteers providing 62,262 hours of service at an appraised value of $1,356,704, and 13,373 volunteers providing 16,597 hours of service at an appraised value of $367,457 to the GMFL National Forests for fiscal years 2012 and 2013, respectively.

Evaluation and Conclusions: Formal and informal agreements with state, county, local and other federal agencies, and non-profits can increase the amount of management and educational activities that occur on the National Forest System lands. Partnerships also increase the ownership that these organizations have in Forest Service management. These agreements also provide Forest Service staff with an opportunity to contribute to the work valued by partner organizations.

Recommendations: Continue working with existing partners and volunteers and cultivate new partners and volunteers where there is an interest from partner groups and a potential benefit to FLNF and nearby communities.

Evaluation Question:

How many agreements for fire management have been developed and maintained with outside partners?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 15 and associated Objectives.

Background: The Forest Service maintains FLNF cooperative fire protection agreements with five Volunteer Fire Departments and organizations in its surrounding towns – Lodi, Ovid, Interlaken, Trumansburg and Schuyler County Office of Emergency Services. These agreements set the framework for responding to wildfires on national forest land and sharing resources when needed.

The FLNF along with the Green Mountain National Forest also has an agreement with the Northeastern Forest Fire Protection Compact, which includes New York, New England States, northeastern Provinces of Canada and the other local federal fire management agencies.

In October 2011, the Forest Service started the process of creating a Master Cooperative Wildland Fire and Stafford Act Response Agreement which now exists for FLNF and Northeast Area State & Private Forestry, the State of New York Department of Environmental Conservation, USDOI Fish and Wildlife Service, and the USDOI National Park Service. This cooperative fire protection agreement allows for the sharing of resources for a wide range of fire and all-hazard related management activities. An annual operating plan is updated and reviewed by all parties each year.

The Albany Pine Bush Preserve Commission in New York State, and the Green Mountain and Finger Lakes National Forests have a cooperative fire protection agreement that was created and signed in fiscal year 2010 to allow for the sharing of resources during wildfire or prescribed fire.

Monitoring Activities: Agreements require current template format and updates every five years along with an annual operating plan. The Forest Fire Management Officer tracks the expiration date of each agreement in a table and contacts volunteer fire departments when the agreement needs to be updated. The Volunteer Fire Departments review changes and updates to the agreement. This process ensures that

the Forest Service and the Volunteer Fire Departments are both familiar with the terms of the agreements and they are operating on national standards for cooperative fire protection

Evaluation and Conclusions: In fiscal year 2010, the process to develop an updated standard agreement to work with each town was finalized and cooperative fire protection agreements with the Schuyler County Office of Emergency Services and with the towns of Lodi, Ovid, Interlaken, and Trumansburg were completed. This brought all agreements and annual operating plans with the towns bordering FLNF up to date. In fiscal year 2012, operating plans were reviewed and signed by each Volunteer Fire Department and the Schuyler County Office of Emergency Services. Forest Service fire staff also met with the Albany Pine Bush fire staff to maintain communications as part of the cooperative agreement.

Recommendations: Partnership agreements provide valuable services that help the Forest Service achieve desired management objectives. It is essential that agreements and annual operating plans be kept current and that we continue to meet with each cooperator to maintain the terms of the agreement.

Human Dimensions

Evaluation Question:

To what extent is the FLNF contributing to the economic health of local economies?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 14 and associated Objectives.

Background: Socio-economic concerns were raised as an issue for the revision of the Forest Plan in 2006. Concerns related to the potential revenues and employment from Forest Service management activities were analyzed in the 2006 Forest Plan Final Environmental Impact Statement (EIS)(pp. 3-285 to 3-312). Employment sectors are traditionally defined for economic analysis by the North American Industry Classification System (NAICS). This information was compiled at the county level and available through the U.S. Department of Commerce Bureau of Economic Analysis. The industries most directly impacted by Forest Service management are:

- Manufacturing (in the form of wood processing)
- Forestry, Fishing, and Farming Services
- Tourism (consisting of 4 categories: arts, entertainment, and recreation; accommodation and food services; motion picture and sound recording industries; and scenic and sightseeing transportation).

The information for personal income by employment sector for 2000 was displayed in the Forest Plan EIS (p. 3-296). The information displayed uses the Standard Industrial Classification (SIC) rather than the NAICS. The two systems use slightly different employment categories and therefore cannot provide an exact comparison.

Monitoring Activities: The Bureau of Economic Analysis collects NAICS personal income by employment sector annually. Information from 2006 can be adjusted to 2013 dollars to provide a comparison of income by employment sector between 2006 and 2013 (Table 2-11). This comparison provides a picture of the economic health of the counties with NFS lands in relation to the sectors that are most directly impacted by Forest Service management activities.

Table 2-11: Personal Income by Employment Sector in 2006 expressed in 2013 Dollars* (in Thousands of Dollars).

	All Sectors	Wood Processing		Forest/Farm/Fish		Tourism	
	Total Income	Income	% of Total	Income	% of Total	Income	% of Total
New York	990,946,859	565,404	0.06	366,249	0.04	21,137,950	2.13
Schuyler County	629,476	(D)		2,316	0.37	14,309	2.27
Seneca County	1,164,381	(D)		(D)		20,935	1.80
Tomkins County	3,56,1842	(D)		21,445	0.60	94,841	2.66

Source: Bureau of Economic Analysis, Regional Economic Accounts; Local Area Personal Income, Series CA05. *http://www.bea.doc.gov/bea*
(D) Not shown to avoid disclosure of confidential information. This information is included in the statewide totals.
*Adjusted using the Consumer Price Index calculator.

Evaluation and Conclusions: The FLNF continues to contribute to the economies of the counties with NFS lands through forestry, recreation and wood processing employment related activities. The contribution in dollars has increased for the tourism sector from 2006 to 2013 as has the percent of total income for this sector. The wood processing and forest/farm/fish sectors are relatively stable. More complex economic modeling such as was done for the Forest Plan FEIS would provide more detailed information on the contribution of Forest Service management to the local economies.

Recommendations: The 2012 Planning Rule directives require the Responsible Official to identify and evaluate available information regarding the social, cultural, and economic conditions in the area, social, cultural, and economic influences affecting the plan area and how the plan area influences social, cultural, and economic conditions in the area of influence and the broader landscape. Forest Service staff should continue to monitor economic contributions to communities through available data such as the Bureau of Economic Analysis, visitor use monitoring, timber sales and special use permits at regular intervals to garner insight into Forest Service management activities contribution to local economies.

Evaluation Question:

How many projects have been completed or undertaken that demonstrate innovative management practice, coordinated vegetation management as a tool to accomplish other resource objectives, and how the Forest is reducing the amount of energy used through conservation and use of renewable energy sources?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goals 9 and 12, an associated Objectives.

Background: The 2006 Forest Plan contains goals and objectives covering many resource and subject areas. During the development of the Forest Plan a desire was expressed for Forest Service staff to use innovative management practices and to coordinate implementation activities amongst resources to give mutual benefits to resources particularly through vegetation management. Another desire was to increase energy efficiency and opportunities for the development and use of renewable energy on FLNF. These desires were expressed as Forest Plan goals. This monitoring question is intended to track activities and projects that have clearly moved toward meeting these plan goals in order monitor progress in Forest Plan implementation.

Monitoring Activities: None reported.

Evaluation and Conclusions: Not applicable this reporting period.

Recommendations: Continue to approach projects and resource concerns in a collaborative, interdisciplinary manner looking for ways to benefit multiple resources and increase efficiency. Continue to explore ways to increase the use of alternative energy to supply the energy needs of FLNF facilities.

Payments to Towns

Evaluation Question:

What was the amount paid to each FLNF town through Payments in Lieu of Taxes (PILT), 25 percent fund or Secure Schools? What type of communications has occurred on this topic with each town?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goal 14 and associated Objectives.

Background: There are two types of federal payments reaching municipalities that have NFS lands: 1) Payments in Lieu of Taxes; and 2) Public Law 106-393, Secure Rural Schools and Community Self-Determination Act of 2001, reauthorized in 2008. Payments in lieu of taxes funds are directed to towns, and the Public Law 106-393 funds are directed to school districts.

Monitoring Activities: Table 2-12 summarizes PILT and Secure Rural Schools payments to Schuyler and Seneca Counties for fiscal years 2012 and 2013.

Table 2-12: Summary of payments to counties in fiscal years 2012 and 2013.

County	2012		2013	
	PILT	Secure Schools	PILT	Secure Schools
Schuyler	$9,852	$11,791.82	$11,293	$12,591.21
Seneca	$5,213	$5,984.07	$6,085	$6,233.79

Evaluation and Conclusions: Counties are sent information regarding payments as soon as it is released.

Recommendations: Continue informing counties of the status of the payments legislation as well as yearly appropriations.

Lands

Evaluation Question:

To what extent has the FLNF land base been adjusted through purchase, exchange, transfer, interchange, boundary adjustment and donation?

Monitoring Question: To what extent have Forest Plan Objectives been attained?

Monitoring Driver: Forest Plan Goals and Objectives. Additional NFS lands and more consolidated land ownership improve the ability to provide public resource benefits.

Background: The Forest Service captures opportunities to meet Forest Plan and National Strategic Plan goals through purchase, donation, exchange, transfer and conveyance of lands to improve public access,

provide outdoor recreation, conserve watersheds, minimize non-native invasive species, sequester carbon and prevent forest fragmentation. The Forest Service also aims to improve legal public use of NFS lands by acquiring rights-of-way for roads and trails.

Purchases and Donations:

Fiscal Year 2012 - None.

Fiscal Year 2013 - Gained critical public and administrative access in the popular Caywood point area and resolved an encroachment onto NFS land, in exchange for less than one half acre of federal land.

Monitoring Activities: Forest Service staff communicate with a variety of conservation partners, including the Finger Lakes Land Trust, the Wild Turkey Federation, Cayuga Trail Club, Finger Lakes Trail Conference, and the Schuyler Chamber of Commerce. These partners will continue to assist with the Forest Service land adjustment program through identifying a variety of opportunities for land conservation.

Evaluation and Conclusions: The information gained from partners and the willingness of local participation continues to highlight the importance of partnerships and community involvement.

Recommendations: Continue to work with partners, national and state entities, counties, townships and communities to help identify, evaluate and subsequently adjust the Forest's land base.

3. Research and Studies

The following are the research and study activities occurring on FLNF in fiscal years 2012 and 2013.

Fiscal Year 2012 - Hemlock Woolly Adelgid Impact Assessment Plots on FLNF Project

The project established 5 to 10 permanent 0.04-hectare plots for long-term monitoring of the impact of hemlock wooly adelgid on hemlocks. Sampling of hemlock leaves will be used for comparison with Landsat TM data to verify multispectral remotely sensed data to monitor forest change. The data collected on the plots will ultimately be used to prioritize biological control and other treatment recommendations in the event of a hemlock woolly adelgid infestation.

Fiscal Year 2013 - None.

4. Adjustments or Corrections to the Forest Plan

Direction for Forest Plan amendments or administrative corrections are provided by planning directives at 36 CFR 219. There were no Forest Plan amendments or administrative corrections associated with the Finger Lakes National Forest Land and Resource Management Plan (Forest Plan) in fiscal years 2012 and 2013.

5. List of Preparers

Table 5-1 provides the Forest Service interdisciplinary team that collected, evaluated, or compiled data for the fiscal years 2012 and 2013 Annual Monitoring and Evaluation Report:

Table 5-1: Preparers of the fiscal years 2012 and 2013 Annual Monitoring and Evaluation Report.

Name	Position
Jay Strand	Monitoring Team Leader/Forest Planner
Melissa Reichert	Recreation Program Manager
Diane Burbank	Ecologist
Angie Quintana	Soil Scientist
Carol Burd	Recreation Planner
Jeff Tilley	Silviculturist
MaryBeth Deller	Botanist
Pam Gaiotti	Budget and Accounting Officer
John Kamb	Engineer
Dave Lacy	Archaeologist and Heritage Resource Specialist
Jen Wright	Wilderness Coordinator
Dan McKinley	Wildlife and Fisheries Program Manager
Tim Noon	Forester (responsible of range management)
Lindsay Silvia	Fire Planner
Pat D'Andrea	Realty Specialist
Doreen Urquhart	Lands Acquisition Specialist
John Sease	Wildlife Biologist
Paul Widowski	Wildlife Biologist
Ralph Perron	Air Quality Specialist