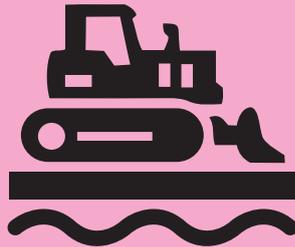




PLANNING



IMPLEMENTATION



EDUCATION &  
TRAINING



RESEARCH &  
DEMONSTRATION



WAC AGRICULTURAL  
CONSERVATION  
EASEMENTS

# 2018 FORESTRY PROGRAM HANDBOOK



## January 2018

The Watershed Agricultural Council's Forestry Program continues to be committed to water quality protection through the principles of sound forest stewardship, strong wood-based economies, and working landscapes. As the Program matures, our efforts to reach more landowners, students, forestry professionals, and business owners have never been greater. Over the years, we've learned how important our partners are in helping us realize our mission and goals. This handbook was created to help users understand the specific policies that govern the WAC Forestry Program. Whether you are a Watershed Qualified Forester writing management plans for private landowners or a teacher seeking Bus Tour funds for her class to visit the watershed, this booklet should help you find the answers you need.

The contents of this booklet have evolved from The Watershed Forest Ad Hoc Task Force's "Policy Recommendations for the Watersheds of New York City's Water Supply" published in July 1996. The Policy Recommendations, also known as "The Green Book," enabled the Watershed Forestry Program to grow thanks largely to its strong partnership with the New York City Department of Environmental Protection and the US Forest Service.

With headquarters in Delaware and Westchester Counties, the WAC Forestry Program team is here to help you. Our contact information can be found on the last page of the handbook. So call us or send an e-mail with any questions. We look forward to hearing from you.

The WAC Forestry Program  
[www.nycwatershed.org](http://www.nycwatershed.org)

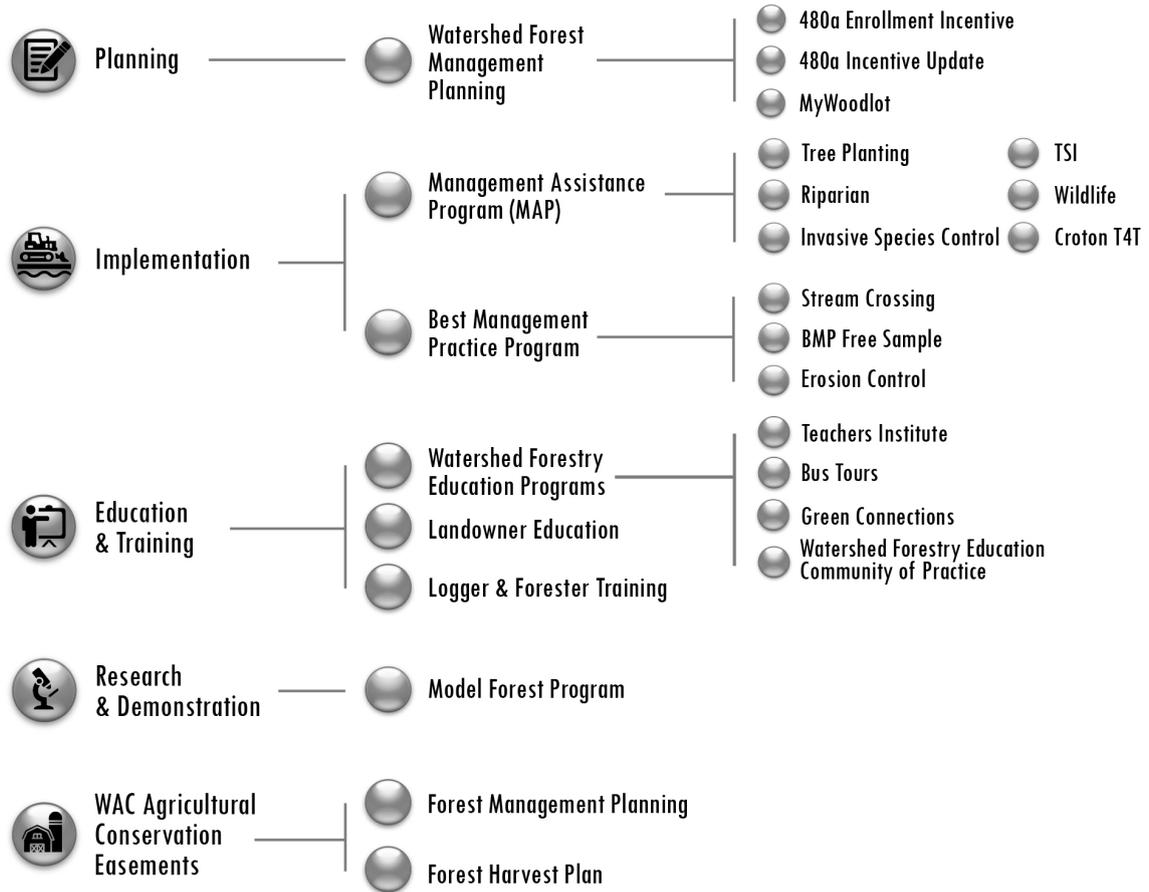


# TABLE OF CONTENTS

6	WAC Forestry Program Organizational Chart
7	WAC Forestry Program Committee Working Group Charges
9	<b>PLANNING</b>
10	<b>480a Enrollment Incentive</b>
13	<b>480a Update Incentive</b>
15	<b>IMPLEMENTATION</b>
16	<b>Management Assistance Program</b>
19	Tree Planting
20	Timber Stand Improvement (TSI)
22	Riparian Improvement
23	Wildlife Improvement
26	Invasive Plant Control
27	Croton Trees for Tributaries
29	<b>Best Management Practice (BMP) Program</b>
30	Portable Bridge Loan
32	Portable Bridge Cost-share
32	Portable Bridge Rental
33	Best Management Practice (BMP) Free Sample
34	Erosion Control Program

37	<b>EDUCATION &amp; TRAINING</b>
38	<b>Watershed Forestry Education Programs</b>
38	Watershed Forestry Institute for Teachers (WFIT)
41	Watershed Forestry Bus Tour Program
45	Green Connections Program
49	Watershed Forestry Education Community of Practice
50	<b>Logger Training</b>
51	<b>Forester Training</b>
52	<b>Landowner Education</b>
53	<b>RESEARCH &amp; DEMONSTRATION</b>
54	<b>Model Forest Program</b>
57	<b>WAC AGRICULTURAL CONSERVATION EASEMENTS</b>
58	<b>Forest Management Plans Guidelines</b>
65	<b>Forest Harvest Plan Guidelines</b>
70	<b>USEFUL REFERENCES</b>
70	Program Rates Summary
72	Glossary of Terms
74	Watershed Forestry Program - Contact Information
75	Related Websites
76	NYC Watershed Region Maps

# Watershed Agricultural Council's Forestry Program



## **WAC Forestry Program Committee Working Group Charges**

Forestry Program Working Groups provide technical oversight and guidance for specific efforts within the Forestry Program. These groups are comprised of individuals possessing technical knowledge who are appointed to the working groups by the Forestry Program Committee Chair. The Forestry Program Working Groups are tasked with reviewing technical details as they pertain to the individual efforts (Logger Training, Watershed Forestry Ed, and Model Forest) and providing recommendations to the Forestry Program Committee. In certain circumstances the Forestry Program Committee has delegated approval authority to the working groups as outlined in the Forestry Program Handbook.

### **Logger Training Working Group**

This working group will develop strategies to promote and manage the Trained Logger Certification (TLC) Program throughout the Catskill/Delaware and Croton watersheds to improve the quality of timber harvesting and provide greater water quality protection. The strategies developed by this working group will be recommended to the WAC Forestry Program Committee for review and approval. This voluntary program is supervised by New York Logger Training, Inc., which is a consortium of timber harvesters and forest industry representatives supported by government and educational institutions. The duties performed by this working group are: oversight of Catskill/Lower Hudson region TLC annual training schedule, development of promotional materials, and coordination with New York Logger Training Inc. to ensure the integration of Catskill/Lower Hudson Logger Training with state-wide efforts. Members: Marilyn Wyman (Greene County CCE), Rick Lutz (TLC Logger), Eric Dahlberg (TLC Logger), Jake Rosa (TLC Logger) Karl Von Berg (WAC), NYC DEP Representative, John Bartow (ESFPA/NYLT), Roger Bresee (Logger), Larry Schaefer (Cannonsville Lumber).

### **Watershed Forestry Education Working Group**

This working group will provide advice and support for the implementation of all Watershed Forestry Education programs by annually reviewing program guidelines, periodically evaluating program strengths and weaknesses, and reviewing and discussing special situations not covered by program guidelines. The working group will perform the following specific program duties:

1. Watershed Forestry Institute for Teachers (WFIT): Assist with the review and approval of applications on an as-needed basis.
2. Watershed Forestry Bus Tour program: Review and approve applications.
3. Green Connections program: Assist with the review and approval of applications on an as-needed basis.

Working group members are to include: Conservation Education Coordinator for the NE Region (US Forest Service), Education Coordinator (CWC), Watershed Educator (WAC), Director of Education (NYC DEP), Section Chief – Working Lands (NYC DEP).

## **Model Forest Working Group**

This working group will develop strategies to promote and manage the four existing Model Forests: Clearpool, Frost Valley, Lennox and Siuslaw. The Model Forests are intended to be living classrooms that highlight various BMP's, silvicultural prescriptions, invasive species issues, and forest stewardship practices as well as other topics that are relevant to the protection of water quality and the sustainable management of watershed forests. The strategies developed by this working group will be recommended to the WAC Forestry Program Committee for review and approval. Members: Siuslaw Model Forest Representative, Clearpool Model Forest Representative, Lennox Model Forest Representative, Frost Valley Model Forest Representative, René Germain (SUNY ESF), Josh VanBrakle (WAC), NYC DEP Representative, SUNY ESF Model Forest Graduate Student.

## **Useful Definitions**

**Principle:** Generally developed by the board and staff during the strategic planning process.

**Policy:** Developed by the Council to provide an overarching framework within which decisions are to be made in. Example: WAC will use a competitive process in purchasing goods and services with preference given to women and minority owned business and businesses headquartered within the watershed

**Guideline:** Developed by Committees to provide guidance to staff. Example: Total maximum funding per application will not exceed \$5,463.64 (\$6,895.85 TLC) without prior approval of the WAC Forestry Committee.

**Standard Operating Procedure:** Developed by staff for internal use. Example: The Finance Director and Grants Specialist will open the sealed bids at the advertised time, develop a list of responsible bids ranked from the lowest to highest including any preferences and forward it to the Executive Director with a recommendation of who to award the bid to.



**Planning**

# 480A ENROLLMENT INCENTIVE

**Description:** The New York State Forest Tax Law (480a) represents a long term commitment by private forest landowners to actively steward their forest resources. To encourage this long term commitment, the WAC Forestry Program provides a 480a Enrollment Incentive payment to help private forest landowners offset the cost of enrolling in 480a.

**Goal:** To encourage the enrollment of new land in the 480a Tax Law.

## Eligibility:

1. Any private landowner owning at least (50) acres of forestland within the NYC Watershed.
2. The applicant property **is not** currently enrolled in the 480a Tax Law.
3. The applicant property must not be under contract for purchase in fee by a government agency.
4. The applicant property **will be** enrolled in the 480a Tax Law prior to receiving WFMP Program funds.

## Procedures & Participation Requirements:

1. If the applicant property has a Watershed Forest Management Plan that is 5 or more years old, they are eligible to apply for the 480a Enrollment Incentive.
2. Landowners seeking to add un-enrolled acreage to an existing 480a plan are permitted to apply for WFMP Program funds. The addition of less than 50 acres will be funded at the 480a Update Incentive rates. The addition of 50 acres or more will be funded at the 480a Enrollment Incentive rates.
3. Eligible landowners will submit a completed 480a Enrollment Incentive application that includes the tax parcel identification number(s), owner contact information and property address. Power of Attorney is accepted.
4. Prior to approval, WAC Forestry staff will verify that applicant properties lie within the New York City watershed.
5. Applications will be reviewed and approved on a monthly basis.
6. Parcels partially within the watershed will be funded based on the forested acreage within the watershed. This will be determined by WAC Forestry staff using GIS.

7. Upon approval landowners will be notified within 30 days of their funding status in accordance with the rates identified below.
8. Landowners must submit a copy of the 480a enrollment certificate, 480a plan and work schedule to WAC within twelve months from the date of application approval or their approved funding will be re-allocated.
9. Priority will be given to those parcels located in proximity to reservoirs or in an identified region of interest if necessary.
10. At the landowner's request, multiple non-adjacent parcels can be treated as a single WAC plan.
11. WAC will disperse funding to the landowner based on the acreages identified on the 480a enrollment certificate in accordance with funding rates.
  - A. Actual payments are permitted to exceed the approved funding amounts only when the 480a certificate identifies the enrolled acreage that exceeds the approved acreage.
  - B. Deviations greater than \$500.00 will be reported to the WAC Forestry Program Committee during scheduled meetings.
12. Supplemental Management Plan Information: 480a forest management plans do not contain all the information deemed necessary by the WAC Forestry Program for landowners to make informed decisions regarding their forest land. To address this deficiency, the WAC Forestry Program will provide each landowner who receives a 480a Enrollment Incentive with the following Watershed Woodland Owners supplements.
  - A. Required Supplements:
    - i. One 11x17 aerial map and one 11x17 USGS topo map that identify the property boundaries.
    - ii. Riparian Supplement: Riparian buffers will be identified and management recommendations will be provided for all DEC classified streams and/or streams that appear on a USGS topographic map.
      - a. Riparian Areas will be identified on a USGS contour map.
      - b. A 100 foot Riparian Buffer will be delineated on the map.
    - iii. Best Management Practice Supplement.
      - a. WAC Forestry Program staff will solicit landowners prior to scheduled stewardship activities to encourage their participation in the BMP Program.
    - iv. Landowner Resources Supplement: Include a listing of all known cost-share practices and programs

available to assist landowners with the stewardship of their forest. Include a copy of the most current “Overview of Watershed Agricultural Council Cost-Share Programs for Landowners”.

- xiii. The WAC Forestry Program Committee may enact a 3% bi-annual cost-of-living increase for Watershed Forest Management Planning Program cost-share rates.

**Funding:**

<b>ENROLLMENT Incentive</b>
480a Enrollment Incentive <ul style="list-style-type: none"><li>• \$477.41 base rate for plan preparation <i>PLUS</i></li><li>• \$5.84 per Watershed acre enrolled in 480a.</li></ul>

## 480A UPDATE INCENTIVE

**Description:** The New York State Forest Tax Law (480a) represents a long term commitment by private forest landowners to actively steward their forest resources. To encourage this long term commitment, the WAC Forestry Program provides the 480a Update Incentive to help private forest landowners offset the cost of periodically updating their plans as required by the NYS DEC.

**Goal:** To support landowners with maintaining their 480a enrollment.

### Eligibility:

1. Any private landowner owning at least (50) acres of forestland within the NYC Watershed.
2. The applicant property **is** currently enrolled in the 480a Tax Law.
3. The applicant property must not be under contract for purchase in fee by a government agency.
4. Priority will be given to those parcels located in proximity to reservoirs or in an identified region of interest if necessary.

### Procedures and Participation Requirements:

1. If the applicant property has a Watershed Forest Management Plan that is less than 5 years old and the landowner desires to enroll in 480a they are eligible to apply for the 480a Update Incentive.
2. Eligible landowners will submit a completed 480a Enrollment Incentive application that includes the tax parcel identification number(s), owner contact information and property address. Power of Attorney is accepted.
3. Prior to approval, WAC Forestry Program Foresters will verify that applicant properties lie within the New York City watershed.
4. Parcels partially within the watershed will be funded based on the forested acreage within the watershed. This will be determined by WAC Forestry staff using GIS.
5. Applications will be reviewed and approved on a monthly basis.
6. Upon approval landowners will be notified within 30 days of their funding status in accordance with the rates identified below.
7. Landowners must submit a copy of the 480a update certificate, 480a plan and work schedule to WAC within twelve

months from the date of application approval or their approved funding will be re-allocated.

8. WAC will disperse funding to the landowner based on the acreages identified on the 480a enrollment certificate and in accordance with funding rates.
  - A. Actual payments are permitted to exceed the approved funding amounts only when the 480a certificate identifies the enrolled acreage that exceeds the approved acreage.
  - B. Deviations greater than \$500.00 will be reported to the WAC Forestry Program Committee during scheduled meetings.
  - C. Best Management Practice Supplement.
    - i. WAC Forestry Program staff will solicit landowners prior to scheduled stewardship activities to encourage their participation in the BMP Program.

**Funding:**

<b>UPDATE Incentive</b>
480a Update Incentive <ul style="list-style-type: none"><li>• \$318 base rate <i>PLUS</i></li><li>• \$.54 per Watershed acre re-enrolled in 480a.</li></ul>



# Implementation

## MANAGEMENT ASSISTANCE PROGRAM (MAP)

**Description:** The Management Assistance Program (MAP) is a cost-share incentive program designed to increase implementation of forest stewardship recommendations found in participants' Watershed Forest Management Plans. The Management Assistance Program is composed of the following components: Timber Stand Improvement, Wildlife Improvement, Riparian Improvement, Tree Planting, and Invasive Plant Control. The following paragraphs will describe in detail the various planned and actual accomplishments for each component of this program. Also included is a summary of a MAP Program participant survey.

**Eligibility:** Any watershed landowner with property enrolled in a Watershed Forest Management Plan is eligible to apply for MAP funding. Interested landowners (or their foresters) must complete an application which describes the work to be performed and the stewardship practices to be implemented. Only those practices which are approved by WAC (see below) and specifically recommended in a landowner's plan are eligible for funding. Those practices which are scheduled to be implemented or completed through a commercial timber sale will be considered ineligible for cost-sharing (this does not include the tending (TSI) of small diameter classes in stands under uneven-aged management as long as tending is conducted in accordance with an appropriate marking guide).

### Procedures and Participation Requirements:

1. Participants may receive up to \$2,898.19 of MAP funding per grant round and up to \$5,796.38 of MAP funding per calendar year towards the payment of certain stewardship practices based on a WAC-approved schedule of cost-sharing rates. Requests exceeding this funding cap require Committee approval. Matching funds are not required by the landowner. However, if the actual funding award is less than the total cost of implementing the practices, the landowner is responsible for paying the difference. WAC funding will be considered a one-time grant award.
2. Each year two grant rounds will be held, with deadlines of February 15 and July 15. Applications will be selected from a competitive pool of eligible applicants using the priority ranking criteria listed below. Unfunded applications that display merit will be held and considered during the next grant round. Landowners will receive notification of the reserved status of their application. All applicants will be promptly notified of their funding status (denied or approved) and all grant recipients will be given six (6) months to complete their implementation work.
3. Upon receipt of a Request for Inspection, WAC staff will conduct one site inspection to ensure the work completed conforms to the plan recommendation and process all payments according to the person completing the work (landowner, forester or logger). Although payments may be divided among all three persons depending on the situation, only tree

designation performed by a Watershed Qualified Forester is eligible to receive marking rates (although landowners can receive reimbursement for designation performed by a Watershed Qualified Forester).

4. All effort will be made to engage Watershed Qualified Foresters in the development and implementation of MAP applications. In the event that a landowner cannot secure the services of a Watershed Qualified Forester to help them complete and implement the application, WFP staff are authorized to offer such assistance to the landowner. WAC Forestry Program staff will notify the participating Watershed Qualified Foresters when aid is being offered to their client. All approved work must be completed according to MAP standards and specifications.
5. MAP practices being applied for must be addressed in the applicant Watershed Forest Management Plan prior to the submission of the application.
6. Given the limited availability of funding and the potentially large number of eligible applicants, all funding requests will be ranked and prioritized by WAC Forestry Program staff based on the following criteria:
  - A. Geographic location: Applications from a county that represents a majority of the submissions during any particular grant round will receive 1 point. Applications from a county that represents a minority of the submissions during any particular grant round will receive 2 points.
  - B. Practice diversity: Requested practices that represent a majority of the submissions during any particular grant round will receive 1 point. Requested practices that represent a minority of the submissions during any particular grant round will receive 2 points.
  - C. Enrollment of WAC plan in 480a tax law program: Applicants who are enrolled in the 480a Tax Law will receive 1 point. Applicants who are not enrolled in the 480a Tax Law will receive 2 points.
  - D. Proposed practices could be implemented via timber sale: Practices that can be completed in conjunction with a commercial timber sale will receive 0 points. Practices that cannot be completed in conjunction with a commercial timber sale will receive 2 points.
  - E. Applicants who have received prior cost-sharing for stewardship practices: Applicants who have previously received funding from WAC will receive 1 point. Applicants who have not previously received funding from WAC will receive 2 points.
  - F. Matching and/or additional funds to be provided by the applicant: Landowners who will not be supplying additional funds to augment MAP funds will receive 1 point. Landowners who will supply additional funds in order

to expand or improve the scope of the requested MAP practices will receive 2 points.

- G. Property having special or unique forest management needs: Applicants that are able to demonstrate unique forest health problems or other silvicultural considerations that would benefit from the proposed MAP practices will receive 1-2 points. All other applicants will receive 0 points.
- H. Property has special or unique watershed protection needs: Applicants with properties that contain or border USGS mapped water bodies and are likely to produce water quality benefits as a result of the MAP practices will receive 2-3 points. All other applicants will receive 1 point.
- I. Good stewardship: Applicants that display a track record of good stewardship as determined by WFP staff will receive 3 points. All other applicants will receive 1 point.

**Management Assistant Program (MAP) Practices include:**

**TREE PLANTING - Page 19**

**TIMBER STAND IMPROVEMENT - Page 20**

**RIPARIAN IMPROVEMENT - Page 22**

**WILDLIFE IMPROVEMENT - Page 23**

**INVASIVE PLANT CONTROL - Page 26**

**CROTON TREES FOR TRIBUTARIES (T4T) - Page 27**

## TREE PLANTING

**Goal:** To encourage the regeneration of forest cover through planting, site preparation, tree shelters and fencing for the purpose of timber production, carbon sequestration and water quality improvement. Planting is limited to non-invasive native or naturalized species and cannot be used for orchard, ornamental, nursery or Christmas tree purposes.

### Procedures and Participation Requirements:

1. The application should address site preparation (if needed), tree species to be planted, spacing and protective measures necessary to ensure the establishment of suitable numbers of desirable tree seedlings. There will be a minimum of 200 hardwood seedlings per acre (approximately 15' x 15' spacing) and 500 softwood seedlings per acre (approximately 9' x 9' spacing). All fencing determined to be necessary to restrict damage by wildlife will be of suitable design to restrict access with a minimum height of 7 feet. Tree shelters and fencing will not be cost shared in combination to prevent animal damage. Cost sharing is not authorized for fencing to restrict domestic livestock from the practice site.
2. Refer to NRCS Conservation Practice Standard "Tree/Shrub Establishment" code 612 for specific information regarding implementation standards.
3. Fencing projects relying on natural regeneration (no tree planting) will only be funded when there is sufficient light for the establishment of a variety of tree species.

### Funding:

Hardwood Seedlings	\$289.83/acre
Softwood Seedlings	\$289.83/acre
Tree Shelters	\$4.64 each
Fencing	\$2.32/foot

## TIMBER STAND IMPROVEMENT (TSI)

**Goal:** To enhance the growth and quality of timber. Tree designation must be conducted by a Watershed Qualified Forester. Thinning, release and removal can be conducted by any individual, preference will be given to applicants who use a New York State Trained Certified Logger (TLC).

### Procedures and Participation Requirements:

1. TSI must be addressed in the applicant Watershed Forest Management Plan prior to the submission of the application. Tree designation will be according to a silvicultural prescription identified in the WFMP.
2. Cost sharing is not authorized unless the stand is actually improved by the cull tree removal or thinning. Cost share will be authorized for the “weeding” of the smaller diameter age classes in accordance with an appropriate marking guide in uneven-aged stands.
3. Stand improvement of orchard, ornamental, or Christmas tree purposes is not authorized.
4. Tree designation must be completed by a Watershed Qualified Forester.
5. Refer to NRCS Conservation Practice Standard “Forest Stand Improvement” code 666 and “Crop Tree Management in Eastern Hardwoods” NA-TP-19-93 for specific information regarding implementation standards.
6. Prior to the disbursement of funding, trees designated for removal must be cut and felled to ensure that open canopy space is created. In the case of trees that are girdled or treated by hypo-hatchet, forestry staff must determine if the tree is dead or in the process of dying so that they no longer impact residual crowns.
7. Foresters doing herbicide TSI work must either flag the boundaries of the treatment area or mark the treated trees to facilitate project inspection and payment.
  - A. Upon completion staff will issue payment for herbicide TSI based on the presence of treatment frills.
  - B. Annually, staff will revisit a sample of old herbicide TSI projects to evaluate treated tree mortality.
8. Foresters doing girdling TSI must use a double girdle with the cuts spaced at least 6 inches apart.
  - A. Upon completion staff will issue payment for girdling TSI based on the presence of a double girdle.
  - B. Annually, staff will revisit a sample of old girdling TSI projects to evaluate treated tree mortality.

**Funding:**

Tree Designation	\$23.20/acre
Cull Tree Removal	\$52.17/acre
Light Thinning (10 – 20 sqft BA removed)	\$69.56/acre
Medium Thinning (21 – 40 sqft BA removed)	\$104.33/acre
Heavy Thinning (41+ sqft BA removed)	\$127.52/acre

## **RIPARIAN IMPROVEMENT**

**Goal:** To improve or protect water quality, riparian areas and forest wetlands through the implementation of approved practices.

### **Procedures and Participation Requirements:**

1. All riparian improvements must be addressed in the applicant Watershed Forest Management Plan prior to the submission of the application
2. Riparian buffer establishment on non forest land requires at least three rows of planted shrubs and/or seedlings at a maximum spacing of 12' x 12' to be established adjacent to water bodies. Only non-invasive native or naturalized plant species will be used. The NYS DEC Saratoga Tree Nursery provides a Riparian Packet that consists of a variety of tree species suitable for riparian plantings. Applicants will use tree species approved by Forestry Program staff or the Riparian Packet to plant areas approved as part of the application. See Tree Planting above for additional information regarding cost sharing for tree shelters, fencing, site preparation and the associated rates.
3. \*Refer to NRCS Conservation Practice Standard "Tree/Shrub Establishment" code 612, "Critical Area Planting" code 342, "Stream and Shoreline Protection" code 580, "Riparian Forest Buffer" code 391 for specific information regarding implementation standards.

**Funding: \$347.78/acre**

## WILDLIFE IMPROVEMENT

**Goal:** To create, protect or maintain wildlife habitat through the implementation of approved practices.

### Procedures and Participation Requirements:

1. Wild crop tree/fruit tree release & pruning: Wild crop tree/fruit tree release & pruning: There is a maximum of ten trees per acre that can be released. For wild fruit trees, each tree will be released on four sides and pruned to stimulate fruit production. For mast-producing crop trees, crown-thinning must occur but there is no requirement for pruning.
2. Wildlife seeding: Openings must be at least 1/4 acre in size and no greater than 5 acres. Nutrients and lime will be applied, based upon the recommendations of a Cornell soil test, to insure satisfactory establishment. Receipts detailing the cost of seed and lime must be submitted prior to the dispersal of funding.
3. Seep Protection & Enhancement: The WAC Forestry Program will work with private forest landowners to create no-equipment buffers and targeted wildlife management recommendations for spring seeps within the New York City Watershed. The purpose of developing buffers and management recommendations for spring seeps is to protect and enhance habitat for the following Species of Greatest Conservation Need: Louisiana waterthrush, Red-shouldered hawk, Kentucky warbler, long-tailed salamander, Northern red salamander, spring salamander, willow flycatcher. Because of the increased availability of water, abundant and diverse foliage for nesting and cover, and rich invertebrate food supplies, seeps attract a higher density of wildlife than drier upland sites. The minimum seep buffer distance will be equal to the height of the mature canopy trees adjacent to the spring seep. Each seep buffer will be identified with marking paint, existing forest roads within the buffer will be closed, and staff will provide recommendations for locating future trails that will maintain the integrity of the seep buffer. Specific management activities that enhance wildlife habitat opportunities within the seep buffer will be recommended.
4. Snag & Cavity Tree Development: The WAC Forestry Program will work with private forest landowners to provide quality snags, cavity trees, and downed logs for the purpose of creating or improving habitat for the following Species of Greatest Conservation Need: Bald eagle, Cooper's hawk, sharp-shinned hawk, red-shouldered hawk, Northern goshawk, olive-sided flycatcher, prothonotary warbler. This will be accomplished by designating and reserving 2 to 4 (up to 8 where available) snags or cavity trees per acre. Existing snags will be identified and protected. New snags will be recruited by girdling large diameter poorly-formed trees that represent Unacceptable Growing Stock. They should be 20"+ in DBH to provide large and small cavity sites for potential users. Trees with open limbs that provide favorable perching, foraging and nesting sites for raptors and fly-catching songbirds will also be favored.

5. Early Successional Habitat Management: The goal of the Early Successional Habitat Management MAP element is to create and/or maintain the three stages that comprise early successional habitat: grassland, shrubland and sapling forests. Early successional habitats are becoming increasingly rare within New York State as mature forest becomes the dominant land cover type. The suite of wildlife species that use these areas, most notably songbirds, can be negatively impacted by the loss of this habitat. The New York State Comprehensive Wildlife Conservation Strategy was developed in 2006 to identify wildlife species that are at risk as a result of habitat loss and population decline. It promotes the creation and conservation of this habitat on public and private land. This strategy places a high priority on the creation of early successional habitats within the Catskill/Delaware and Croton watershed regions. The creation of this habitat will support populations of the wildlife Species of Greatest Conservation Need (SGCN) identified in the NYS wildlife strategy. The Eastern Bluebird, Roughed Grouse and American Woodcock are a few of the species that require early successional habitat to thrive and reproduce. WAC Forestry Program staff will seek to use the Management Assistance Program to motivate private landowners to create and/or maintain unique grassland, shrubland and sapling habitats in order to benefit wildlife species identified in the NYS Comprehensive Wildlife Conservation Strategy.
  - A. Grassland Habitat: Areas that are dominated by herbaceous vegetation such as milkweed, goldenrod and asters. The grassland habitat is the first stage in the early successional process that will over time convert abandoned agricultural lands into mature forests. The critical elements this habitat provides to wildlife are diverse insect populations, an abundance of forage, and dense cover. The grassland habitat will exist for approximately 20 years until shrubs and saplings begin to dominate the site by shading out the herbaceous vegetation. The maintenance of this early successional habitat prevents the establishment of shrub and saplings through periodic mowing. Target species for this activity include: Eastern bluebird, American goldfinch, and Bobolink.
    - i. The cost-share rate for maintaining grassland through periodic mowing will be \$54.64 per acre. Mowing will only be conducted from August 1<sup>st</sup> through April 30<sup>th</sup> to ensure successful brood rearing and re-nesting of ground nesting birds. Landowners will be required to complete the mowing prior to payment and refrain from mowing the area for a minimum of five years. Livestock will be excluded from the area and the land will not be converted to a non-compatible use, such as hay production, within this period. The landowner will agree to refund WAC in the event that these requirements are not adhered to.
  - B. Shrubland Habitat: Areas that are dominated by deciduous, coniferous, and ericaceous shrubs that occur within the 2 to 10 foot zone in forested and non-forested cover types. The shrubland habitat is the second stage in the early successional process that will over time convert abandon agricultural lands into mature forests. The critical elements

this habitat provides to wildlife are dense cover, vertical nesting, and critical foraging opportunities due to abundant production of fruit and nut mast. The shrubland habitat will exist for approximately 20 years before saplings begin to dominate the site and shade out the shrubs. Maintenance of the shrubland habitat requires the removal of tree saplings that inhibit the growth of the shrubs. Target species for this activity include: American woodcock, whip-poor-will, Canada warbler, black-throated blue warbler, and brown thrasher.

- i. The cost-share rate for maintaining shrubland through the removal or girdling of saplings and trees greater than 1 inch in stump diameter will be \$98.34 per acre. Livestock will be excluded from the area and the land will not be converted to a non-compatible use, such as hay production, within this period. The landowner will agree to refund WAC in the event that these requirements are not adhered to.
- C. Sapling Habitat: Areas that are dominated by a dense stand (2,000 to 4,000 stems per acre) of even-aged saplings with a continuous canopy and a lack of understory vegetation. Sapling habitat is the final stage in the early successional process that will over time convert abandon agricultural lands into mature forests. The critical elements this habitat provides to wildlife are nesting opportunities, foraging structure and dense ground cover in areas where it is typically lacking. The sapling habitat will exist for approximately 10 years before the trees grow out of the sapling size class, raising the forest canopy above the height that is beneficial to targeted wildlife species. Target species for this activity include: chestnut-sided warbler, ruffed grouse, blue-winged warbler, and indigo bunting.
- a. The cost-share rate for creating a forest opening to provide sapling habitat is \$437.09 per acre. Openings will be a minimum of ¼ acres and all trees within the area will be felled. Priority will be given to openings created in shade intolerant forest types (Aspen, Cherry, Birches). Livestock will be excluded from the area and the land will not be converted to a non-compatible use, such as hay production, within this period. The landowner will agree to refund WAC in the event that these requirements are not adhered to.

**Funding:**

Wildlife Crop Tree & Fruit Tree	\$23.20/tree	Seep Protection & Enhancement	\$281.39/acre
Wildlife Seeding	\$173.89/acre	Snag & Cavity Tree Development	\$28.14/tree
Early Successional Habitat Management			
1. Grassland	\$56.28/acre		
2. Shrubland	\$101.29/acre		
3. Sapling	\$450.20/acre		

## **INVASIVE PLANT CONTROL**

**Goal:** To eradicate or control the spread of non-native and native invasive plants that interfere with the attainment of forest management goals.

### **Procedures and Participation Requirements:**

1. Cost share is authorized to control and/or facilitate the removal of interfering or invasive species of flora that restrict or prevent the attainment of forest management goals detailed in a Watershed Forest Management Plan.
2. The species considered invasive for the purpose of this practice include: Autumn olive, Russian olive, Japanese barberry, multiflora rose, mile-a-minute, non-native honeysuckle, buckthorn, Oriental bittersweet, Norway maple, Tree of heaven, ferns (hay-scented and New York), grapevine, swallowwort, winged enonymus, 5-leaf Akebia and American beech.
3. Control of invasive species for orchard, ornamental, nursery, and Christmas tree purposes is not authorized. Payment for approved projects will be made on a reimbursement basis to the landowner following a post-inspection to verify invasive plant removal.
4. Participants using herbicide to control invasive species must either flag the boundaries of the treatment area or mark the treated trees to facilitate project inspection and payment.
5. Guidelines will be provided for each target species listed above from the CD-ROM Invasive Plants of the Eastern United States; Identification and Control. Information is also available at: <http://www.invasive.org/eastern/The Plant Conservation Alliance's Alien Plant Working Group website> is also a good source of fact sheets on identification & options for management. <http://www.nps.gov/plants/alien/fact.htm>

### **Funding:**

**Invasive Plant Control Cost Share Rate: \$231.86/acre**

**Invasive Vine Control Cost Share: \$57.97/acre**

## **CROTON TREES FOR TRIBUTARIES (T4T)**

**Goal:** To promote the protection and improvement of water quality and stream-side forest ecosystems in partnership with the watershed communities through the establishment, enhancement, and restoration of riparian forest buffers.

**History:** *Trees for Tributaries* or *Trees for Tribs* is a stream-side planting program developed in 2007 by the NYS Department of Environmental Conservation's Hudson River Estuary Program (HREP). After two seasons of pilot partnership between the WAC Forestry Program and the HREP, the *Croton Chapter of Trees for Tribs* was formed to specifically offer *Trees for Tribs* projects to eligible landowners in the Croton Watershed.

**Description:** Croton *Trees for Tribs* offers free trees and shrubs for the replanting of stream-side forests to eligible landowners in the Croton Watershed. As this is a voluntary community-based program, the participant will be strongly encouraged to identify an adequate number of volunteers to successfully implement the project. Participants will receive in-field education on riparian forestry including tree planting, species identification, forest health concepts, invasive species and deer, soils and climate, and buffer function and water quality. Projects are tailored to the goals and objectives of the landowner to greatest extent possible. Project elements include but are not limited to an initial site visit, planting area delineation and invasive species identification, plant selection, permit acquisition, hole drilling with mechanical auger, project-related educational opportunities, press release development, and use of tree tubes for browse protection. Participation of the applicant in the project development process is encouraged. Long-term project success is strongly related to maintenance, monitoring, and frequent site visits.

**Eligibility:** All private, municipal, and county landowners in the Croton Watershed having non-forested, partially-forested, or declining-forested riparian areas. The WAC Forester can assist in this determination.

### **Procedures and Participation Requirements:**

1. Educational merits of the project including but not limited to property visitation, school involvement, public visibility, outreach potential, signage, access to forest landowners, unique aspects of riparian forestry, integration into existing educational programming, and volunteer group.
2. Project location within a priority reservoir basin (Kensico, Boyds Corner, West Branch, Cross River, Croton Falls).

3. Interested landowners should contact the WAC Forestry Program to set-up a site visit. Upon determination from the WAC Forester that the project is eligible and project details have been communicated, the landowner may apply for the program.
4. Applications are available from the WAC website at [nycwatershed.org](http://nycwatershed.org). Applications for the Spring season are due by February 1st, and applications for the Fall season are due by July 1st.
5. Applicants will be notified of their selection status. Non-winning applications will be provided to the Hudson River Estuary Program at the New York State DEC office in New Paltz to be included in their Trees for Tribes application pool.
6. Applicant will be in frequent contact with WAC Forester for determination of several items including but not limited to planting date, selection and ordering, delivery or storage of materials, permitting (if necessary), educational components, or development of press materials.
7. Following project completion, the project leader or landowner is strongly encouraged to make periodic site visits.
8. The project site should not be altered without consultation from the WAC Forester.
9. The WAC Forester will make periodic site visits for maintenance and monitoring for several years.

## **BEST MANAGEMENT PRACTICE (BMP) PROGRAM**

**Description:** The purpose of the Best Management Practice Program is to provide financial and technical assistance to Loggers, Foresters and Landowners in order to support the implementation of Best Management Practices on privately owned forestland within the New York City Watershed.

**Eligibility:** Any timber harvester applying for BMP Program funding who is actively engaged in harvesting trees on a logging job in the NYC watershed. WAC will issue payment to the business that completes the work and/or purchases the materials necessary to implement the BMP's approved by WAC. Separate payments can be issued for layout, stream crossings, materials and post-harvest stabilization. The WAC Forestry Program Committee supports logger participation in Trained Logger Certification (TLC) through prioritizing project approval and providing financial incentives to trained loggers. The WAC Forestry Program Committee also recognizes the vital role forest products businesses like saw mills and logging companies play in supporting the working forested landscape within the NYC watershed. In recognition of the positive role forest products businesses play in supporting Trained Logger Certification these businesses are eligible to receive TLC Incentive payments. However, the WAC Forestry Program Committee wishes to ensure that TLC loggers are aware of situations when forest products businesses are receiving TLC Incentive payments. To this end, TLC Incentive payments will be issued to forest products businesses only after the eligible TLC logger who is working on the logging job signs the TLC Incentive Assignment of Payment form. Forest Products businesses that employ the TLC logger working on the logging job are exempt from this requirement. Loggers must be Trained Logger Certified at the time the project is inspected in order to receive adjusted TLC cost-share rates. All state recognized logger certification participants (CT, PA, etc.) are eligible to receive TLC incentive rates.

**Best Management Practice (BMP) Programs include:**

**PORTABLE BRIDGE LOAN PROGRAM - Page 30**

**PORTABLE BRIDGE COST-SHARE PROGRAM - Page 32**

**PORTABLE BRIDGE RENTAL PROGRAM - Page 32**

**BEST MANAGEMENT PRACTICE (BMP) FREE SAMPLE PROGRAM - Page 33**

**EROSION CONTROL PROGRAM - Page 34**

## PORTABLE BRIDGE LOAN

**Description:** The Portable Bridge Loan component of the BMP Program loans stream crossing structures to eligible applicants and ensures appropriate Best Management Practices are used within the stream crossing approaches to protect water quality. The goal of the Bridge Loan Component is to prevent the movement of sediment below bank-full condition during active logging operations and after logging has ceased.

### Procedures and Participation Requirements:

1. Structures available for loan: 2 plastic arch culverts (4'); 2 plastic arch culverts (6'); 7 short-span (20') portable skidder bridges; 2 long-span (30') temporary portable truck/skidder bridge; 1 long-span (50') temporary portable truck/skidder bridge; 12 sets of rubber tire mats.
2. Bridges are available for loan within the watershed counties as deemed appropriate by WAC Forestry Program staff. Priority will be given to applications within the NYC watershed.
3. Applicants must submit a signed and completed application including directions to the bridge site for a WFP inspection and a valid certificate of insurance. The 50 Ft Portable Skidder/Truck Bridge will require a refundable deposit. Applications will be batched and approved on a weekly basis with priority given to TLC applicants.
4. Any application which involves special or unique circumstances will be subject to the review and approval of the WAC Forestry Committee.
5. All bridges are available for loan for a maximum of three (3) months and will remain the property of WAC. Individual deadlines may be extended by WAC only upon prior request from the logger and provided no other applicants have requested the bridge.
6. WAC Forestry Program staff will work with applicants to develop and implement a plan for using appropriate BMP's within the stream crossing and its approaches. Staff will conduct three visits to each stream crossing site.
  - A. The first will be a preliminary visit to assess BMP needs and develop the Bridge Loan application. At this time the Forest Service BMP Monitoring Protocol will be used to assess the pre-harvest state of the stream crossing.
  - B. A second visit will be conducted during the active use of the crossing to verify adherence to plans detailed in the Bridge Loan application.

- C. A third and final visit will be conducted to assess the implementation of BMP's and verify accomplishments for final payment. At this time the Forest Service BMP Monitoring Protocol will be used a second time to assess the post-harvest state of the stream crossing.
- D. Stream crossings are composed of three component areas: Approach A, The Crossing and Approach B. Each area will receive 1/3 of the base rate in addition to the value of any supplemental BMP's installed within the area. Each area will be inspected independently to assess adherence to plans and specifications. WAC Forestry Program staff can exercise the ability to issue partial payments if any of these areas fails to meet minimum NYS BMP Guidelines.
- E. The cost-sharing rates apply only to BMPs installed within each of the three component areas of a stream crossing. A base rate is included to offset the fixed costs associated with the heavy machinery required to implement required BMPs. Additional BMP cost-sharing is available for specific erosion control devices installed on a logging road outside the stream crossing area through the Erosion Control Component of the BMP Program.
- F. The maximum reimbursement for each Stream Crossing project is \$3,477.83 or \$4,389.49 (TLC rate). A Stream Crossing component project can be implemented in conjunction with an Erosion Control Component project, in which case the maximum reimbursement for both projects is \$9,274.21 (\$3,477.83 Stream Crossing Component Maximum + \$5,796.38 Erosion Control Component Maximum) or \$11,705.31 TLC Incentive (\$7,315.82 Erosion Control TLC Maximum + \$4,389.49 Stream Crossing component TLC Maximum).

**Funding:**

BMP	Rate	TLC Rate
Base Rate (per component)	\$231.86	\$289.83
Water Bar	\$57.97 each	\$81.14 each
Corduroy	\$231.86/approach	\$324.59/approach
Post-Harvest Stabilization	\$115.93/approach	\$162.31/approach

1. Total maximum funding per application will not exceed \$3,477.83 (base) or \$4,389.49 (TLC Incentive) without prior approval for the WAC Forestry Committee.
2. Priority will be given to TLC applicants, applicants who have not previously received WFP cost-sharing, and stream crossing projects that are conducted on properties having a Watershed Forest Management Plan or specific water quality concerns. Applicants will agree to follow the NYS Forestry BMP Field Guide regarding the proper installation of all BMPs, which are required to remain on the property following installation.

## **PORTABLE BRIDGE COST-SHARE**

1. Up to \$1,159.28 (\$1,738.91 TLC Incentive) reimbursement for building or purchasing a portable bridge.
2. Contractors will be allowed a maximum of three (3) portable skidder bridge cost shares. The average operational lifetime of a portable skidder bridge is three years. In order to encourage continued participation subsequent “bridge replacement” applications beyond the maximum of three approved applications will be accepted. Prior to approval staff will review these applications for replacement bridges, inspect the previously cost-shared bridge to determine if the bridge has surpassed its operational lifetime and is in need of replacement.
3. All bridges that are cost-shared by WAC must be installed at least once on a logging site within the NYC Watershed.
4. Applicants must submit a completed application including directions to the bridge site for a WFP inspection prior to reimbursement. Design specifications must receive WFP approval and all receipts and invoices must be provided as well as a field inspection of the bridge in place prior to reimbursement. Applications will be approved on a first-come, first-served basis. Priority will be given to TLC and first time applicants.
5. Any application involving special or unique circumstances will be subject to the review and approval of the WAC Forestry Committee.

## **PORTABLE BRIDGE RENTAL**

1. Up to \$1,304.19 (\$2,318.54 TLC Incentive) reimbursement for renting a portable bridge.
2. All rented bridges that are cost-shared by WAC must be installed on a logging site within the NYC Watershed.
3. Applicants must submit a completed application including a valid certificate of insurance. The reimbursement rate listed above is a maximum amount, with actual funding based on a 50% (TLC Incentive) cost-share of the total rental price (for a period not to exceed 45 days), whichever is less. Trucking costs will be covered in the 50% cost-share. Invoices and receipts must be submitted prior to dispersal of funds. Applications will be approved on a first-come, first-served basis. Priority will be given to TLC and first time applicants.
4. Any application which involves special or unique circumstances will be subject to the review and approval of the WAC Forestry Committee.

## **BEST MANAGEMENT PRACTICE (BMP) FREE SAMPLE PROGRAM**

**Goal:** The purpose of the BMP Free Sample component is to encourage the use of new and under-used Best Management Practices among Loggers, Landowners and Foresters.

### **Procedures and Participation Requirements:**

1. BMP's available for sample: 200' x 15' sample of geotextile road fabric; 100' x 3' sample of silt fencing with stakes; 10-24" x 20' pipe culvert; 50 lbs. grass seed; 20 bales of hay; biodegradable bar and chain oil; 100' erosion control blankets; 12' straw wattles.
2. Landowners who own more than 10 acres of forestland within the New York City Watershed and have a current Watershed Forest Management Plan are eligible to apply.
3. All BMPs must be installed within the NYC Watershed and applicants will agree to complete an evaluation survey/feedback form following BMP installation.
4. Applicants must submit a completed application for each BMP sample. Applications will be approved on a first-come, first-served basis while supplies last. Priority will be given to TLC applicants.
5. Any application which involves special or unique circumstances will be subject to the review and approval of the WAC Forestry Committee.

## **EROSION CONTROL (FORMERLY TIMBER HARVEST ROADS AND FOREST ROADS) PROGRAM**

**Goal:** The Erosion Control component of the BMP Program will ensure appropriate Best Management Practices are used within the harvest area during logging operations. The goal of the Erosion Control Component is to minimize soil movement and prevent sedimentation during active logging operations and after logging has ceased. At the completion of a project the participant will receive a completed evaluation of how well they met the BMP guidelines. This evaluation is meant to ensure consistency between WAC Forestry Program staff in the enforcement of NYS BMP standards, help participants understand the WAC Forestry Program's expectations for BMP implementation and to inform the planning and implementation of future Erosion Control projects.

### **Procedures and Participation Requirements:**

1. All Erosion Control applications for loggers and Foresters (formerly Timber Harvest Roads) must be installed as part of an active timber harvest on properties meeting Watershed Forest Management Planning eligibility qualifications. Applicants will agree to follow the New York State Forestry BMP Field Guide regarding proper installation of all BMPs, which must remain on the property following installation.
2. Private forest landowners within the NYC watershed, with a current WFMP, are eligible to apply for Erosion Control funding to remediate existing erosion problems on their property (formerly Forest Roads). BMP's must remediate an existing erosion or sedimentation problem on the property. Applications will be ranked according to their impact on water quality, previous BMP Cost-Share funding, cost effectiveness and contractor availability. Landowners will agree to follow the New York State Forestry BMP Field Guide regarding proper installation of all BMPs, which must remain on the property following installation. Application must identify a contractor to carry out the work to be considered for funding.
3. Applicants must submit a completed application including a work outline and property location map. All proposed skid trails, truck roads and landings must be flagged prior to application review. All approved Erosion Control applications will be allowed 12 months from the approval date for completion. Individual deadlines may be extended only upon prior request and written approval from the WFP. BMP Cost-Share applications for loggers and foresters will be approved on a rolling basis throughout the year. BMP Cost-Share applications for private forest landowners will be reviewed and approved in two grant round each year held in January and July.
4. Total maximum funding per application will not exceed \$5,796.38 (\$7,315.82 TLC) without prior approval of the WAC Forestry Committee. An Erosion Control Component project can be implemented in conjunction with a Bridge Loan Component project, in which case the maximum reimbursement for both projects is \$9,274.21 (\$3,477.83 Stream

Crossing Component Maximum + \$5,796.38 Erosion Control Component Maximum) or \$11,705.31 TLC Incentive (\$7,315.82 Erosion Control TLC Maximum + \$4,389.49 Stream Crossing component TLC Maximum).

5. Priority will be given to TLC applicants, applicants who have not previously received WFP cost-sharing, and timber harvests that are conducted on properties having a Watershed Forest Management Plan or specific water quality concerns.

**Funding:**

BMP	Rate	TLC Rate	BMP	Rate	TLC Rate
Road Layout & Design	\$0.12/Ft	\$0.12/Ft	Water Bars	\$28.98 each	\$40.57each
Broad Base Dips	\$57.97 each	\$81.14 each	Post-Harvest Stabilization	\$185.47/acre	\$278.23/acre
Geotextile Fabric	\$1.15/Ft	\$1.74/Ft	Gravel	\$11.60/yard	\$17.39/yard
10-15" Culvert	\$13.91/Ft	\$20.87/Ft	18' Culvert	\$18.54/Ft	\$27.82/Ft
24" Culvert	\$24.35/Ft	\$37.10/Ft	36" Culvert	\$61.90/Ft	\$92.86/Ft
48" Culvert	\$75.41/Ft	\$112.55/Ft	Open-Top Culvert	\$7.31/Ft	\$10.14/Ft
Rubber Belt Deflectors	\$5.63/Ft	\$9.01/Ft	Hay Bales	\$1.15 each	\$2.32 each
Silt Fencing	\$0.30/Ft	\$0.42/Ft	Corduroy	\$11.60/Ft	\$17.39/Ft
Skid Trail Re-grading	\$0.08/Ft	\$0.10/Ft	Road Relocation	\$0.30/Ft	\$0.30/Ft

1. The cost-share rate for East of Hudson Gravel will be \$23.20 per yard due to regional difference in the cost of gravel.
2. A final inspection reviewing the proposed BMPs for adherence to State BMP Guidelines is required prior to the dispersal of funds. Receipts and invoices are required for gravel, hay, seed, geotextile fabric, culverts and other materials prior to the dispersal of funds.
3. WAC foresters can fund BMPs not detailed in the application by setting a reasonable cost-share rate.
4. Any application under consideration for approval which involves special or unique circumstances will be subject to the review and approval of the WAC Forestry Committee.
5. The Watershed Forestry Program Committee will be notified of all completed applications receiving adjusted TLC cost-sharing rates.





# Education & Training

# WATERSHED FORESTRY EDUCATION PROGRAMS

The mission of the Watershed Forestry Education programs is to empower teachers to effectively teach their students about the New York City Watershed and the connection between healthy forests and water quality especially as it relates to the NYC water supply system. Learning goals include understanding: 1) watershed form and function; 2) the NYC water supply system; 3) how trees and forests filter and protect water quality; and 4) the past, present, and future human dimensions of the NYC Watershed. The following four core program areas constitute a comprehensive approach to reaching teachers and students in the rural, suburban and urban communities of the NYC Watershed region:

1. **Watershed Forestry Institute for Teachers (WFIT);**
2. **Watershed Forestry Bus Tour Program;**
3. **Green Connections Program; and**
4. **Watershed Forestry Education Community of Practice**

## 1. WATERSHED FORESTRY INSTITUTE FOR TEACHERS (WFIT)

**Description:** The WFIT is a 5-day summer professional development program designed to inform, inspire, and equip teachers to teach their students about NYC Watershed forestry. The WFIT immerses 4th – 12th grade teachers from New York City and the upstate NYC Watersheds in a hands-on study of NYC Watershed forestry. Teachers are trained in several environmental education curricula, practice hands-on activities about watersheds and forestry, go on fieldtrips to discover first-hand how trees and forests protect water quality, learn from a variety of resource professionals and join an active community of practice of watershed educators. Fieldtrip sites may include a WAC model forest, NYCDEP drinking water reservoir, active timber harvest site, Watershed Forestry Bus Tour destinations, and more. Participants develop Action Plans that describe how they plan to integrate watershed forestry education into their teaching during the following school year. WFIT graduates are encouraged to attend ongoing trainings and apply to the Watershed Forestry Bus Tour or Green Connections programs. Completing the WFIT is a prerequisite for applying to Green Connections.

**Eligibility:** Priority is for 4-12th grade teachers and non-formal educators working in municipalities wholly or partially within the East or West of Hudson Watersheds or the 5 boroughs of NYC. Educators working in upstate consumer municipalities may be considered if space is available. Educators in upstate consumer municipalities may be considered if space is available. Each year the target audience alternates between 4-8th and 6-12th grade teachers in order to provide specialized training. Past WFIT participants may reapply after five or more years have passed since their previous WFIT.

### **Procedures and Participation Requirements:**

#### 1. Application Submission and Approval

- A. Applications are available on the WAC website and are due in early May. Applicants are notified of their approval status within 2 weeks of the application submission deadline.
- B. Participation is limited to 25 teachers and recruitment efforts strive to achieve a mixture of participants from NYC and the upstate NYC Watersheds.
- C. The Watershed Educator reviews and approves submitted applications using the criteria below. The Watershed Forestry Education Working Group may be asked to assist with application approval on an as-needed basis:
  - i. Ability to fully participate in the 5-day Institute, including staying at the facility overnight with fellow participants;
  - ii. Evidence of support for program participation from the school/organization administration;
  - iii. Interest in forestry and water resources and enthusiasm for the outdoors and environmental education;
  - iv. Capacity and commitment to integrate WFIT information, practices and resources into their teaching during the following school year and, ideally, beyond;
  - v. Preference is given to teachers who apply from the same school and/or to teachers who work with a previous WFIT graduate at their school, so as to maximize the potential for collaboration and implementation; and
  - vi. Some preference is given to teachers working with the same grades/ages, so as to maximize the potential for developing upstate/downstate partnerships.

## 2. WFIT Participant Requirements

- A. Approved participants receive a packing list and all food, lodging and materials are provided. Participants are responsible for their own transportation to and from the Institute and, when possible, a shuttle to and from a nearby Metro North train station is provided.
- B. Participants actively engage in all WFIT programming, including presentations, field trips, demonstrations, lessons, and reflection activities.
- C. Participants develop Action Plans that describe what select WFIT information, practices, resources and/or professional assistance they plan to integrate into their teaching during the following school year.
- D. Participants are strongly encouraged to develop upstate/downstate partnerships and to consider applying to Green Connections, for which WFIT is a prerequisite.

## 2. WATERSHED FORESTRY BUS TOUR PROGRAM

**Description:** The Watershed Forestry Bus Tour Program is a competitive, 1-to-1 matching grant program that awards up to \$3,000 to help pay for 1 of 4 types of Watershed Forestry Bus Tours to the NYC Watershed region (Catskill/Delaware and Croton systems). The purpose of the Watershed Forestry Bus Tour Program is to educate the public, especially students, about the NYC Watershed's lands, waters, and people with a special focus on how trees and forests protect water quality. A program priority is to help NYC students visit a NYC-DEP drinking water reservoir and forested landscape for the very first time.

**Eligibility:** Any organization, community group, or 4-12th grade classroom in municipalities wholly or partially within the East or West of Hudson Watersheds or the 5 boroughs of NYC. Student groups younger than 4th grade may be considered for funding if specific watershed and forestry learning outcomes are part of the proposed tour and associated teaching plan. All previous Watershed Forestry Education grants must be closed-out before an applicant is eligible to apply for a new Bus Tour grant.

### Procedures and Participation Requirements:

1. Application Submission and Approval
  - A. Applications are available on the WAC website and there are 2 rounds of funding awarded each year with applications due in early January and August. Applications are reviewed and approved by the Watershed Forestry Education Working Group and applicants are notified of their approval status within 6 weeks of the application submission deadline.
  - B. Applicants may apply for 1 of 4 Bus Tour options, including: 1. Environmental Education Center; 2. Trout in the Classroom Trout Release; 3. Trees for Tribs Tree Planting; and 4. Adult Professional Development. All options include a visit to a NYC-DEP drinking water reservoir.
  - C. Funding is competitive: Approximately 45% of funding is allocated to new student groups, 45% to repeat student groups and 10% to adult professional development groups. Partial funding is often awarded and is intended to primarily help pay for transportation costs associated with a Bus Tour.
  - D. The following criteria are used to review and approve Bus Tour applications:
    - i. Completeness of application (including application form, budget table, proof of matching funds,

- identification of individual responsible for budget and reporting, and proof of administrative support);
- ii. Description of teaching plan related to the tour, including how the tour relates to the existing curriculum/program and what teaching activities are planned for before, during and after the tour;
- iii. Preference for funding goes to applications focused on all 3 of the following themes: 1. Watershed form and function; 2. The NYC drinking water supply system; and 3. How trees and forests protect water quality and provide other benefits; and
- iv. Some preference may be given to applications that include: Teachers who have attended the WFIT, significant financial need (e.g. Title 1 schools), teaching plans that integrate service or stewardship projects, and/or teachers with excellent participation track records in WAC and other education programs.

## 2. Bus Tour Participant Requirements

- A. Participants have 1-year from the date of funding notification to complete the Bus Tour grant process.
- B. Once funding has been awarded, each new participant is required to meet with the Watershed Educator for an orientation meeting, which includes a discussion of grant terms, proposed Bus Tour logistics, associated teaching plan, and other opportunities to support participant environmental education efforts.
- C. Participants work with the Watershed Educator to develop a detailed itinerary for their Bus Tour and manage their budget. Budget overruns are the responsibility of the participant.
- D. Participants have 6-weeks from the date of funding notification to submit the following grant initiation paperwork: 1. W-9 tax identification form 2. Online pre-tour survey 3. Proof of insurance documents (if required, see below).
  - i. Public schools are insured through their school district and are not required to submit proof of insurance to WAC; however
  - ii. Private schools, non-profit organizations, or other entities that are NOT public schools, must submit proof of insurance to WAC indicating general liability coverage with limits of \$1 million per occurrence with a \$2 million general aggregate covering all obligations of the participant in regards to the Bus Tour. The participant's legal counsel shall name the Watershed Agricultural Council as additionally insured.

- E. Participants are required to submit proof of completion of the following program requirements within the 1-year grant period:
  - i. Complete an online pre- and post-tour teacher survey;
  - ii. Submit copies of paid receipts from the tour and documentation of in-kind time contributions. Total expenses must demonstrate a minimum 1-to-1 funding match. Eligible matching funds include in-kind time and services, cash expenditures, or other non-federal funds;
  - iii. Submit examples of student work that exemplify student learning related to the Bus Tour experience (photos/scans are preferred); and
  - iv. Submit at least 5 digital photos documenting the Bus Tour experience.
- F. At the discretion of WAC, funding reimbursement may be forfeit if these minimum requirements are not met and failure to meet them may disqualify a participant from future funding. If at any time a participant has difficulty meeting program requirements, they must contact the Watershed Educator to discuss the situation as soon as possible. Participants must notify WAC at least 1 month prior to the end of the grant period if funds will NOT be spent in their entirety.
- G. Bus Tour grant funds are awarded in two checks on a cost advance and reimbursement basis. The first payment is a cash advance for half the monies. The second payment is a reimbursement for the remaining Bus Tour costs up to the total grant award amount. Therefore, participants are required to make all necessary purchases for the Bus Tour and then submit copies of all paid receipts to WAC, who will then reimburse the participant up to the total amount of the award. Only those Bus Tour costs approved in the initial grant application, or modifications approved by WAC, are eligible for cost reimbursement.
- H. All participants must follow the “School Trips” regulations as set by the Office of the Chancellor of the New York City Department of Education. Tour participants may only use portable electronic devices (i.e. iPods, PSP’s, cell phones) when Bus Tour hosts and presenters give them permission to do so. If the behavior code is not followed, participants may be asked to leave the facility.
- I. Well-prepared chaperones make Bus Tours safe and educational. To ensure an excellent learning experience for all, the following responsibilities must be discussed with all participating chaperones before a Bus

Tour begins: 1. Be prepared to assist with student behavior management 2. Be a good role model, particularly during lessons, by silencing cell phones, following instructions, avoiding chatting, and being open to new experiences 3. To maximize learning for students, do not interrupt a lesson and let students ask and answer the questions.

- J. Participants agree to allow the use of their group's name in press coverage for the Watershed Forestry Bus Tour program and to have their group featured in related media coverage. Participants may request that the identities of specific individuals be omitted from press coverage for safety reasons.

### 3. GREEN CONNECTIONS PROGRAM

**Description:** Green Connections is a competitive, 1-to-1 matching grant program that awards up to \$5,000 to help pay for year-long partnerships between upstate and downstate Teacher Partners and their classrooms. The mission of the Green Connections program is to meaningfully connect students from New York City and the NYC Watershed region through personal communication and shared experiences with the world-famous NYC water supply system from forest to tap. Program goals include: 1. Fostering rural/suburban NYC Watershed and urban NYC water recipient students' meaningful connection with each other, each other's way of life, and the two contrasting, yet interconnected environments in which they live; and 2. Inspiring students to actively practice stewardship of trees and water. To achieve these goals, students from upstate NYC Watershed and downstate NYC classrooms become pen-pal buddies for a school year. Student buddies exchange letters, learn from a common watershed curriculum, do a local stewardship activity, and share hands-on watershed experiences on two joint Bus Tours—one to NYC and one to the upstate NYC Watershed region.

**Eligibility:** Any 4th-8th grade classroom teacher working in a municipality wholly or partially within the East or West of Hudson Watershed or the 5 boroughs of NYC who has attended the Watershed Forestry Institute for Teachers (WFIT) is eligible to apply. Teacher Partners submit separate applications. Total combined grant awards for a partnership (2 classrooms of 20-40 students each) is approximately \$5,000. All previous Watershed Forestry Education grants must be closed-out before an applicant is eligible to apply for Green Connections.

#### **Procedures and Participation Requirements:**

1. Application Submission and Approval
  - A. Applications are available on the WAC website and there is 1 round of funding awarded each year with applications due in early August. Teacher Partners submit separate applications. Applications are reviewed and approved by the Watershed Educator with assistance from the Watershed Forestry Education Working Group on an as-needed basis. Applicants are notified of their approval status within 6-weeks of the application submission deadline.
  - B. The following criteria are used to review and approve Green Connections applications:
    - i. Successful completion of the Watershed Forestry Institute for Teachers (WFIT);
    - ii. Appropriate grade levels (4-8th) and subject matter taught by Teacher Partners;

- iii. Completeness of application (including application form, budget table, proof of matching funds and proof of administrative support);
- iv. Description of interest in program, including how the program connects to the existing curriculum, initial ideas for upstate and downstate Bus Tour experiences, thoughts on the value of student buddy relationships and how to help students develop positive relationships, and ideas for a local stewardship project; and
- v. Some preference may be given to applications that include: Significant financial need (e.g. Title 1 schools) and/or teachers with excellent participation track records in WAC and other education programs

## 2. Green Connections Participant Requirements

- A. Participants have 1-year from the date of funding notification to complete the program.
- B. The Program Coordinator is responsible for facilitating successful classroom partnerships and Bus Tours. The Program Coordinator supports Teacher Partners through all aspects of the program and new Teacher Partners receive extra support.
- C. Participants attend an all-day, in-person kick-off meeting, in which teachers meet with one another and the Program Coordinator to review program requirements and begin planning for the year.
- D. Teacher Partners facilitate a year-long student buddy friendship. Buddies exchange at least 3 communications with each other, beginning with hand-written letters. Students remain with their buddies on field trips, sharing these experiences and showing their local environments to one another.
- E. Throughout the school year, each teacher completes a selection of 8 engaging activities (provided and self-curated) designed to teach students about the NYC Watershed and water supply system, including how people and forests impact water quality.
- F. Partner Classrooms go on 1 Bus Tour in the fall and 1 in the spring. New Teacher Partners collaborate with the Program Coordinator to identify trip options, create schedules, and reserve programming. With WAC approval, repeat Teacher Partners may coordinate trip logistics and plan schedules independently.



- i. Demonstrate a 1-to-1 funding match;
  - ii. Record and provide requested documentation for program activities in a timely manner;
  - iii. Complete an online pre- and post-program Teacher Partner survey;
  - iv. Ensure students complete pre- and post-program student learning assessment activities in the classroom;
  - v. Communicate with the Program Coordinator and Teacher Partner at least monthly;
  - vi. Schedule 1-2 classroom visits with the Program Coordinator;
  - vii. Engage students in 8 activities from the Green Connections curriculum;
  - viii. Complete at least 3 rounds of correspondence between student buddies;
  - ix. Conduct 2 joint Bus Tours (one to an upstate NYC Watershed location and one to NYC); and
  - x. Engage students in a local stewardship project related to trees, forests and/or water quality.
- J. At the discretion of WAC, up to \$2,000 of funding reimbursement may be forfeit by participants who do not complete these minimum requirements. Teachers failing to meet these requirements will also be unlikely to receive future funding.
- K. Participants agree to allow the use of their group's name in press coverage for Green Connections and to have their group featured in related media coverage of the program. Participants may request that the identities of specific individuals be omitted from press coverage for safety reasons.

#### 4. WATERSHED FORESTRY EDUCATION COMMUNITY OF PRACTICE

**Description:** WAC helps create and maintain a community of practice of watershed forestry educators. WFIT, Bus Tour, and Green Connections participants form the core of this community, which also extends to other classroom teachers, non-formal educators and environmental education partners. WAC actively engages, assists, and celebrates educators from across the NYC Watershed region in order to empower and motivate them to teach about NYC Watershed forestry now and into the future. Not only does training and supporting educators yield student learning outcomes, but investing in them also results in greater public awareness of NYC Watershed forestry and stewardship. Strategies used to maintain strong, positive relationships among educators, WAC, and partner organizations include: 1. Teacher Resources webpage; 2. The Reservoir e-newsletter; 3. WAC Watershed Forestry Education trainings.

##### **Procedures:**

1. Teacher Resources Webpage
  - A. Maintain public webpage on WAC website that includes curated, high-quality resources and materials for teaching about NYC Watershed forestry topics. Content includes videos, readings, curricula, activities, websites, and information about fieldtrips and other grant opportunities.
2. The Reservoir E-newsletter
  - A. Periodically emailed to network of educators and partners to communicate funding, training, event and resource opportunities, including WFIT, Bus Tour and Green Connections application deadlines. The Reservoir may also feature teacher success stories to inspire action in others.
3. WAC Watershed Forestry Education Trainings
  - A. The Watershed Educator organizes and runs 2-3 trainings and/or social events for educators annually at different times and locations in NYC and the NYC Watershed region.
  - B. Given that many educators are unable to attend the 5-day WFIT due to scheduling conflicts, a 1-day watershed forestry training is typically offered in NYC in the winter that features a local environmental institution and/or expert.
  - C. At least once per year, NYC Watershed forestry trainings are offered to the education staff at the environmental education centers that are Bus Tour destinations. These trainings help prepare field educators to deliver instruction during Bus Tours that connects deeply with NYC Watershed forestry themes.
  - D. The Watershed Educator is available to present information and lead education activities related to NYC Watershed forestry at partner workshops and events.

# LOGGER TRAINING

**Description:** The WAC Forestry Program promotes and supports Trained Logger Certification (TLC) within the New York City watershed region. TLC is coordinated on a statewide basis by New York Logger Training, Inc. (NYLT) and within the New York City watershed region by the WAC Forestry Program and Greene County Cornell Cooperative Extension.

**Eligibility:** Any Timber Harvester who conducts 25% of his/her work within the NYC watershed.

## **Procedures and Participation Requirements:**

1. TLC is awarded to loggers who have completed the three core courses: Adult First Aid/CPR, Forest Ecology & Silviculture, and Game of Logging Level 1 (a chainsaw safety class). The three core TLC courses are offered twice annually, once in the spring and again in the fall.
2. Upon receiving their TLC, loggers are certified for a three year period. Over this period loggers must complete three continuing education credits in order to be eligible to renew their certification for an additional three year period. In addition to the three core courses, a minimum of one continuing education course will be offered each year to provide loggers with the opportunity to maintain their certification. The following are examples of continuing education courses that have been offered in previous years: Skidder Bridge Construction, Log Bucking for Quality, Advanced Logger Rescue, Vernal Pools and an Introduction to GPS Units.
3. A calendar of events identifying training opportunities is printed and distributed each January.
4. Local saw mills are encouraged to participate in the TLC mill rate incentive program where TLC loggers receive approximately \$5/mbf (refer to annual Logger Training Calendar for current rates).
5. WAC will provide a reimbursement of 75% of the cost of non WAC workshop expenses for Catskill/Lower Hudson loggers attending non-WAC sponsored logger training events. Loggers are required to provide documentation of the total cost of the workshop as well as their attendance.
6. The WAC Forestry Program gives priority to TLC loggers when approving BMP Implementation Program applications in addition to providing TLC Incentive rates for Best Management Practices (Refer to the BMP Implementation portion of this handbook for specific TLC Incentive opportunities).

## FORESTER TRAINING

**Description:** The WAC Forestry Program supports continuing education for foresters within the NYC Watershed region to enable them to become “Watershed Qualified” and therefore eligible to write Watershed Forest Management Plans. Each year, the WAC Forestry Program provides at least one training opportunity for new foresters to become Watershed Qualified. This one-day workshop highlights important topics such as BMP Implementation, Riparian Area Management and Forest Management Planning. It also introduces Foresters to WAC Forestry Program staff, the administrative process for writing Watershed Forest Management Plans, and various other program opportunities. In addition to offering the “Becoming a Watershed Qualified Forester” Workshop, the WAC Forestry Program also offers various continuing education opportunities covering topics such as GPS/GIS Technology, Portable Bridges and Deer Density Surveys.

**Eligibility:** Training opportunities are open to all Foresters. Individuals who desire to become a Watershed Qualified Forester must have a B.S. or associate degree in forestry.

### **Procedures and Participation Requirements:**

1. Foresters must attend the “Becoming a Watershed Qualified Forester” workshop in order to be a Watershed Qualified Forester.
2. Watershed Qualified Foresters are required to attend additional educational courses deemed necessary by WAC Forestry Program staff in order to remain Watershed Qualified.
3. In the event a consulting forester can not attend the “Becoming Watershed Qualified Consulting Forester” workshop WAC Forestry Program staff can conduct one-on-one training. This training will be restricted to instances where the consulting forester can not attend the workshop due to extenuating circumstances. The one-on-one training will cover all the information covered in the “Watershed Qualified Consulting Forester” workshop agenda and it will be documented for committee notification.

## LANDOWNER EDUCATION

**Description:** The WAC Forestry Program supports numerous forest landowner conferences and other educational programs throughout the watershed annually. These workshops engage watershed landowners in becoming better stewards of their woods and help them realize the opportunities available to them as forest landowners. Landowner education programs are advertised online as well as in mailings and newsletters.

- Master Forest Owners Program
- Landowner Letter Series
- Landowner Education Workshops



# Research & Demonstration

## MODEL FORESTS

**Description:** The Watershed Forestry Program operates three model forests in the Catskill/Delaware and Croton Watersheds. Each Model Forest is a living classroom with various BMPs, silvicultural prescriptions, invasive species descriptions, and water quality protection issues on display for the public to view first-hand. In addition, the Model Forests are research facilities for scientists from universities and government agencies to conduct experiments on the relationship between timber management and water quality. The Model Forest Network is a collaborative venture involving the State University of New York College of Environmental Science and Forestry (SUNY-ESF), US Army Corps of Engineers, New York City DEP, New York State DEC, USDA Forest Service, US Geological Survey and many others. The forests offer excellent examples of hands on forestry in a beautiful hiking and snowshoeing setting.

1. **The Lennox Model Forest** is located in Delhi, NY in Delaware County. The forest is located on Back River Road just across the street from the 4-H Camp Shankitunk and is open to the public every day from dawn until dusk. Parking is available on the landing adjacent to the large kiosk. The Lennox Model Forest is owned by Delaware County and managed by Cornell Cooperative Extension of Delaware County.
2. **The Frost Valley YMCA Model Forest** is located on the campus of the Frost Valley YMCA Camp in Claryville, NY in Ulster County. The forest is located on Frost Valley Road and requires that all visitors check in at the Camp's administration desk before visiting the forest. Visitors will be instructed where to park and the terms of use of the forest once they have registered with the Frost Valley staff. For more information on visiting Frost Valley, contact them at (845) 985-2291. An online virtual tour of the Frost Valley Model Forest is available at the WAC and Frost Valley websites.
3. **Siuslaw Model Forest** is located in Acra, NY in Greene County. This model Forest is owned and managed by Cornell Cooperative Extension of Greene County.
4. **Clearpool Model Forest** is located in Carmel, NY (Putnam County). This 264 acre Model Forest is owned by Green Chimneys and managed by Clearpool Education Center.

### Procedures and Participation Requirements:

1. **Committee Approval:** One of the benefits of the Model Forest Program is the exploration of innovative methods for transferring knowledge regarding forest stewardship and water quality to various target audiences. To maximize this benefit the WAC Forestry Program Committee encourages a creative atmosphere within each Model Forest

partnership. The Committee will maintain an open-door policy by reviewing all proposals for funding submitted by Model Forest Program partners. Proposals will seek to provide the Committee with all relevant information regarding the request, a summary of goals, anticipated outcomes, evaluation techniques, as well as a detailed estimate of cost. All proposals will be submitted to the Model Forest working group for initial review and advancement to the WAC Forestry Program Committee. For more information about the Model Forest working group please contact the Model Forest working group staff contact: Josh VanBrakle.

2. **Maintenance:** Routine maintenance is eligible for funding by the WAC Forestry Program. Maintenance activities such as hazard tree removal, brush hogging, mowing, demonstration maintenance, sign replacement and boundary line maintenance are eligible for funding. Maintenance costs in excess of \$3,000 per Model Forest annually must be pre-approved by the WAC Forestry Program Committee. Requests in excess of \$3,000 must be submitted in writing to the Model Forest working group at least 6 months prior to desired implementation. The request must include a summary of the activity, a detailed budget and schedule for implementation.
3. **New Demonstrations:** New demonstrations are eligible for funding by the WAC Forestry Program. All demonstrations must seek to communicate knowledge concerning forest stewardship and/or water quality to one of the Model Forest target audiences. New demonstrations such as agro-forestry projects, silvicultural prescriptions, Best Management Practices, and general environmental education topics are eligible for funding. New demonstrations whose cost exceeds \$500 require pre-approval from the WAC Forestry Program Committee. Requests in excess of \$500 must be submitted in writing to the Model Forest working group at least 6 months prior to desired implementation. The request must include a summary of the activity, a detailed budget and schedule for implementation.
4. **Outreach Material:** Outreach material is eligible for funding by the WAC Forestry Program. Outreach material such as signs, brochures, advertising and web-based resources are eligible for funding. Requests in excess of \$1,000 must be submitted in writing to the Model Forest working group at least 6 months prior to desired implementation. The request must describe the project and include a detailed budget.
5. **Education Material:** Education material is eligible for funding by the WAC Forestry Program. Education materials such as GPS units, handouts, books, computers and computer software are eligible for funding. Requests in excess of \$500 must be submitted in writing to the Model Forest working group at least 6 months prior to desired implementation. The request must describe the project, include a detailed budget, identify educational outcomes and describe methods for evaluation.
6. **Model Forest Host Funding Guideline:** The coordinator from the relevant Model Forest Host will provide the following

documentation when seeking reimbursement from the WAC Forestry Program for funds used to implement an approved maintenance, new demonstration, outreach material or education material project: An invoice from the host organization documenting non-material expenditures as well as receipts documenting materials purchased to complete the project.



## **WAC Agricultural Conservation Easements**

# FOREST MANAGEMENT PLANS GUIDELINES

The Easement Committee establishes the following guidelines for Forest Management Plans on properties under contract and under easement:

1. When required by the conservation easement, a landowner must have a Forest Management Plan approved by WAC.
2. Forest Management Plans may include any and all of the following use areas : Agricultural Conservation Easement Areas (ACEA), Forestry Conservation Easement Areas ( FCEA), Resource Protection Areas (RPA), Acceptable Development Area (ADA).
3. While Forest Management Plans may make specific management recommendations for properties, and the Deed of Conservation Easement requires both a Forest Management Plan and a Forest Harvest Plan prior to a landowner commencing a commercial timber harvest, timber harvests conducted in accordance with a Forest Harvest Plan may not always follow the specific management recommendations of a Forest Management Plan.
4. The content of a Forest Management Plan accomplishes the following:
  - A. Provide easement landowners with the basic information regarding their property so they can make informed forest stewardship decisions.
  - B. Provide a tool for communicating stewardship expectations between the landowner, WAC and forestry professionals.
  - C. Provide the basic property attributes that are necessary for WAC to effectively steward its easements.
  - D. Ensures water quality is protected through sound and sustainable forest management and stewardship and balances water quality protection with the needs of the landowner to promote working landscapes.
5. The cost of developing a Forest Management Plan is the sole responsibility of the easement landowner. The easement landowner can apply for Forest Management Plan funding from the WAC Forestry Program to off-set the cost of plan development.
6. The review and approval of Forest Management Plans for WAC easement properties will be done by WAC Forestry Program staff in accordance with the New York City Department of Environmental Protection's Water Quality Guidelines for Timber Harvesting referred to in the WAC Deed of Conservation Easement clause pertaining to Forest Management or successor documents such as the WAC Watershed Forestry Program Handbook (the "Handbook") and its subsequent revisions. Any successor documents such as the WAC Forestry Handbook must be adopted by the WAC easement Committee (EC) via

formal motion. If the WAC Forestry Handbook is adopted as the successor document, a Forest Management Plan's content will follow specifications listed on Page 61 sections 1 through 23 of the Handbook, titled, "Watershed Forest Management Plan Specifications."

7. All Forest Management Plans for WAC easement properties must meet the minimum standards for Watershed Forest Management Plans set forth in the WAC Forestry Handbook. If a Forest Management Plan does not meet the minimum standards for Forest Management Plans as defined in the Handbook, Forestry Program will not approve the plan and the Easement Program Manager will send a letter to the landowner notifying them that their Forest Management Plan is not to program standards.
8. A copy of the completed Forest Management Plan will be filed in the Easement Program stewardship files of respective properties once approved by the Forestry staff and Easement Program Manager.

### **Forest Management Plan Procedures and Participation Requirements**

1. All Watershed Forest Management Plans must be completed by a Watershed Qualified Forester (See requirements above)
2. Priority will be given to those parcels located in proximity to reservoirs or in an identified region of interest if necessary
3. Landowners are required to submit to the WAC Forestry Program a signed and completed application that includes the tax parcel identification number(s), owner contact information and property address. Power of Attorney is accepted.
4. Prior to approval, WAC Forestry Program Foresters will verify that applicant properties lie within the New York City watershed. NYS DEC Foresters and Connecticut DEP Foresters will verify that the applicant properties do not have existing stewardship plans in place. Plans written by NYS DEC foresters (or, in special cases, WAC foresters) are not eligible for full plan funding.
5. Adjacent parcels under common ownership at the time of application will be funded as a single management plan. Parcels purchased after the completion of the initial plan will receive Full Plan funding or Upgrade funding upon the results of the NYS DEC stewardship check. If the additional acreage is less than 10 forested acres, the costshare received will be based on the per acre rates without the inclusion of a plan base rate. If there are more than 10 forested acres to be added, staff will approve costshare per acre rates including a plan base rate.
6. WAC Forestry Program staff will approve on a monthly basis individual acreages and funding amounts based on the cost-sharing rates and eligibility requirements listed above. Approvals will be presented to the WAC Forestry Program

Committee in report form.

7. Foresters must submit a plan to WAC within twelve months from the date of application approval. Foresters have 90 days to submit any changes required by the management plan review process. Individual deadlines may be extended only upon prior request from the landowner or consulting forester and prior written approval from the WAC.
8. Upon plan approval, WAC will disperse funding to the forester based on a submitted invoice. Actual cost-sharing payments will not exceed the approved funding amount unless the forester has documented in the plan that the actual forested or riparian acreage exceeds the original estimate.
9. WAC Forestry Program staff can adjust approved funding amounts to reflect the eligibility requirements listed above, and they will report any funding deviations greater than \$500.00 to the WAC Forestry Program Committee during scheduled meetings.
10. When appropriate, WAC staff will write Watershed Forest Management Plans that offer unique outreach opportunities in the event a landowner cannot secure the services of a Watershed Qualified Forester. Plans developed by WAC staff are not eligible for WAC funding.
11. All plans are required to meet Watershed Forestry Plan Specifications (listed below) and are subject to the technical review and documented approval of a WAC Forester and the NYS DEC Watershed Forester in either Region 3 (Dutchess, Putnam, Sullivan, Ulster, Westchester) or Region 4 (Delaware, Greene, Schoharie).
12. 5-Year Surveys will be conducted by WAC Forestry Program Staff. Landowners will be mailed a copy of the 5-Year Survey for completion. Non-respondents will receive a second mailing a few weeks later. Respondents will be contacted by phone to schedule an on-site visit with a WAC Watershed Forester if they desire. If an on-site visit is not possible follow-up questions will be conducted over the phone. Results are compiled for inclusion in an annual report that is used to improve program effectiveness.

## Watershed Forest Management Plan Specifications

1. Owner's name, mailing address and telephone number (include permanent and property location addresses as appropriate).
2. Describe property locations, including the County and Town, and distance from nearest road intersection. Provide a location map plotted on a USGS or county highway map. Briefly describe the current condition of the property boundaries and any present and future boundary line maintenance that should be followed
3. Total acres and managed acres covered in this plan. Managed acres include all woodlands with stand analysis, forested riparian areas, and any open or brushy areas where riparian practices are recommended (tree planting, fencing, etc.)
4. Completed WAC Summary Sheet.
5. Landowner's goal statement: include specific goals and objectives including water quality protection measures.
6. Foresters name, address, telephone number and fax.
7. Each plan will have a narrative description including property-wide and stand specific information. This will include site specific discussion of the resource interrelationships of items H through S found below.
8. A description of forest types that include the following information: Acres, Species Composition (% of top 4 species), Density (trees/acre for seedling/sapling stands or basal area for pole and saw timber stands), Sampling on stand size (Less than 10 acres: 3 points, 10 to 20 acres: 5 points, 20+ acres: 5 points + point for each additional 15 acres up to a maximum of 15 points), Size Class, Site Class
9. Work Schedule: Specific management recommendations (i.e. TSI, Thinnings, Shelterwood) by stand over the next 15 years. Discuss unique market potential such as ginseng, maple syrup, mushrooms, etc. Include this information in a time line-based work schedule.
10. Soil Information: Soil types found on the property and a discussion of their erosion potential and suitability for access system development. Include a soil type map with property boundaries outlined.
11. Riparian Areas\*: Riparian areas will be identified and management recommendations will be provided for all DEC classified streams and/or streams that appear on a USGS topographic map. The Watershed Forestry Program encourages foresters to identify additional Riparian Areas for intermittent streams and seeps as they see fit.
  - A. Riparian Areas should be identified on a USGS contour or stand type map. Management objectives for Riparian

Areas should be developed cooperatively with the property owner. Management objectives should appear in the plan narrative for each riparian area. These objectives can range from wildlife management, afforestation, aesthetics, invasive species control and timber management to no cut areas. Management objectives should address issues with a direct impact on water quality and Riparian Area Management such as tree planting in reverting farm fields adjacent to streams, the control of invasive species or potential erosion problems within the riparian area.

- B. Foresters must identify in the plan narrative specific management recommendations that can be taken to achieve the stated goals. These specific recommendations range from tree planting, water bar installation, road closeout and wildlife mast tree release to timber stand improvement. Management recommendations must be based on site specific information. When a Riparian Area is part of a larger stand the forester does not need to collect inventory specific to the Riparian Area itself. Since the Riparian Area demonstrates the characteristics of the larger stand the stand level inventory information can be used as the basis for management recommendations. If the Riparian Area differs significantly in age, size class or species composition it should be treated as a separate stand and include the information identified in section ‘h’ of the Watershed Forest Management Plan Specifications. When riparian management includes non-forested (agricultural and non-agricultural) open areas, management objectives should include afforestation with species options and planting criteria described. Include options for potential stand establishment or other riparian techniques through programs available from WAC, Conservation Reserve Enhancement Program (CREP) or other agencies (i.e. fencing, tree planting, etc.). NOTE: Non-forested areas can count toward planned acres if they fall within a riparian area.
- C. The minimum width for Riparian Areas is either 2 times the average height of the trees adjacent to the water body or the minimum distance, based on slope, as identified on page 65 of the NY State BMP Field Guide, whichever is greater. The Riparian Area begins at bank full condition and extends to the distance identified above. Foresters are encouraged to include as many acres in the Riparian Area as they feel is warranted using the techniques outlined in the book *“Riparian Management for the Eastern Continental United States”* which they received during their initial Riparian Delineation Training
- D. NYS Timber Harvest Guidelines and additional forestry Best Management Practices (BMPs) pertaining to forest function, water quality protection, habitat, recreation or aesthetic objectives should be identified.
- E. *The Riparian requirements listed above represent the Riparian Planning Program specifications that must be integrated into all Watershed Forest Management Plans, where applicable.*

12. Access System: Potential and/or existing roads (main skid or haul roads, landings, quarries, recreational trails) laid out on an enlarged USGS contour map to grade and stand type map. Discuss problem areas due to soil type and suggested solutions as they relate to existing/proposed roads and landing sites. Stream crossings identified in plan and on enlarged USGS contour map and stand type map and the best method suggested (i.e., temporary bridge, culvert, ford). Design of erosion control measures (BMPs) on roads during construction and after harvesting included in the plan. Log landings identified along with erosion control methods necessary for their construction and closure after harvesting. Reference made to the NYS Forestry BMP Field Guide.
13. Wildlife habitat: A representative list of the main species likely to be present, and specific habitat suggestions for wildlife populations consistent with the landowner's goal(s). Encourage amendment, as necessary for eligibility for other federal cost share programs. Suggest other groups/organizations to contact for more information (i.e., Trout Unlimited, Audubon Society, etc.)
14. Fisheries habitat: A representative list of species likely to be present, and specific habitat suggestions for fish populations consistent with the landowner's goal(s).
15. Rare, threatened or endangered species: Note presence and any management implications that should be considered or mandated by law.
16. Recreation and Aesthetics: Discussion of the current visibility of the property from residence and roads. What a timber sale will look like if one is planned. Include methods to reduce visual impact of harvests (i.e., buffers, silvicultural activities, top lopping, timing, etc.). Discuss current and desired recreational activities on the property (i.e. hunting, skiing, bird watching, etc).
17. Forest Health, Invasive Species, and Fire Protection: Description of past health issues on the property including past outbreaks of tree defoliators and estimated vulnerability for future defoliation. Problems with other animals, insects and diseases along with silvicultural recommendations to minimize animal, insect and disease concerns. Fire protection, including any previous evidence of a wildfire on the property, and suggestions to minimize the threat.
18. Management objectives prescribed to meet the landowner's goals: Include a listing of all known cost-share practices and programs available to assist landowners with the stewardship of their forest.
19. Forest Type Map: Title section including property owner, location (town, county, state), map, author's name and date of preparation. Property boundaries, physical features (buildings, riparian areas, streams, wetlands, trails, skid/haul roads, landings, ponds, quarries, etc.), scale, north arrow, stand boundaries, numbers and acres. Existing and potential stream

crossings should be identified. Maps should be drawn to an appropriate scale that clearly shows all elements represented. Recommended scales should be 1"= 200' to 660' for properties with less than 300 acres and 1"=660' to 1320' for properties over 300 acres

20. Signature clause: All completed watershed forest management plans must be signed by all landowners, legal designees or powers of attorney in order for funding to be dispersed to the Watershed Qualified Consulting Foresters. Signatures must accompany the following phrase: "As owner, I (we) have reviewed this management plan with my (our) forester and I (we) understand the contents and agree that it reflects my (our) goals and intention for the management of this property."
21. Table of Contents: Reference to page headings, maps, addendum, charts, work schedules, etc.
22. Definition of terms: All forestry terms and abbreviations used in the plan need to be defined in a separate section of the plan.
23. Standards and Appearance: The final draft of the plan must be coherent, easy to understand, and in all ways applicable to the property for which it was written. After any necessary amendments have been made, the plan must be a single, all-inclusive document of a professional standard.

# FOREST HARVEST PLAN GUIDELINES

The Easement Committee establishes the following guidelines for forest harvests on easement properties and properties in contract:

- 1. Where required in a conservation easement and the purchase and sales contract, forest harvests will only be conducted on properties that:**
  - A. Have a Forest Management Plan (FMP) that has been approved by WAC within the past ten (10 ) years consistent with the Forest Management Plans Guidelines (dated April 16, 2009)
  - B. Have a WAC Forest Harvest Plan (FHP) that has been approved by the Easement Committee.
- 2. The FHP is a plan that is intended to:**
  - A. summarize the information and activities regarding specific forest harvests,
  - B. ensure harvest activities, including optional silvicultural practices and required best management practices implementation are consistent with water quality protection,
  - C. provide a basis for reviewing and approving the plan, and
  - D. outline the requirements to which the landowner must adhere.
- 3. All FHPs will contain the following required information:**
  - A. Landowner information:
    - i. Date of plan and landowner name, mailing address and other contact information and WAC property ID.
  - B. Property information:
    - i. Verification and date of FMP completion. If the landowner does not have a WAC approved FMP, the landowner must first obtain a FMP as per the Easement Committee FMP Guidelines (April 16, 2009).
    - ii. Name and contact information of forester or person completing FHP.
    - iii. Name and contact information of logger or person(s) conducting the harvest activities.
    - iv. Term of the contract if applicable, proposed beginning and end dates of project.
    - v. Objectives for the harvest.
  - C. Job size and scheduling:
    - i. Estimated removal volume in Board Feet and/or cords, and/or number of trees.

- ii. Harvest area in acres.
  - iii. Estimated time when project will be marked.
  - iv. Estimated time period when roads, skid trails and landings will be built.
- D. Water Resources
- i. Describe any special watercourse/wetland precautions to be taken.
  - ii. Include copies of all required permits (Federal, State, Local) such as DEC stream crossing or USACOE wetland permits.
  - iii. Describe and identify Best Management Practices that will be employed for the protection of water resources and maintained in good working order as described in the NYCDEC BMP Guidelines.
  - iv. For each stream/wetland crossing, indicate:
    - a. Drainage type (stream, spring, seep)
    - b. Duration of flow (perennial, intermittent)
    - c. Existing or proposed crossing, size and type (temporary for permanent bridge, culvert or other)
    - d. Drainage bottom (rock, gravel, mud, soil mixture, other)
    - e. Stream bank type (rock, gravel, mud, soil mixture, other)
    - f. Bank height (feet)
  - v. For each riparian buffer area, indicate:
    - a. Buffer type (watercourse, stream side, wetland, spring, seep, lake, pond, other) for each area
    - b. Slope
    - c. Width of buffer
    - d. Initial/residual basal area
- E. Access System:
- i. List the estimated length, in feet, of all existing and proposed primary skid trails.
    - a. Estimate the total surface area in roads and landings in square feet and calculate the percentage of road/landing area compared to the harvest area.
  - ii. Describe how all existing and proposed primary skid trails must be flagged in the field before the FHP is considered complete. The flagging color will be identified in the FHP.
  - iii. Proposed Best Management Practices for stabilizing the access system during the active timber harvest. These BMP's can include but are not limited to corduroy for crossing unstable soils, gravel, geo-textile

fabric, water bars and culverts.

- iv. Proposed Best Management Practices for the post-harvest stabilization of the access system. These can include but are not limited to trail grading, water bar and broad based dip installation.
  - v. Proposed Best Management Practices for the post-harvest stabilization of the stream crossing approaches. These BMP's can include but are not limited to water bar installation, gravel, geo-textile fabric and corduroy.
- F. FHP Map requirements:
- i. Property boundaries and harvest area
  - ii. Forest stands in harvest area
  - iii. Logging units within or across stands
  - iv. Water courses (perennial/intermittent streams, lakes/ponds, rivers, springs and seeps)
  - v. Wetlands
  - vi. Stream and wetlands crossings,
  - vii. Riparian buffers areas,
  - viii. Topography (at least 20 foot contours),
  - ix. Existing and proposed truck roads, skid trails and landings
  - x. Map scale should not be smaller than 1 inch = 330 feet for properties smaller than 300 acres and 1 inch = 660 feet for properties more than 300 acres.
  - xi. USGS quadrangle (7.5 minute series) used with name

#### **4. The Following is Optional for all FHP's:**

All FHPs may include some or all of the following silvicultural information if provided by the Forester and/or logger:

- A. Prescriptions for individual stands, each stand will be indicated on the FHP map:
  - i. Goals/Objectives
  - ii. Methods used to promote regeneration
  - iii. Riparian buffer area management use.
  - iv. Other factors to consider
- B. Stand treatment for each stand
  - i. Type of cut
  - ii. How cut trees are designated

- iii. Residual AGS basal Area/acre
  - iv. If stand is adjacent to property boundary, how boundary is marked.
  - v. Other information such as proposed chemicals treatments, etc.
- C. Stand diagnosis for each stand:
- i. Forest type/description
  - ii. Acres
  - iii. Timber size
  - iv. Initial basal area/acres
  - v. Soil survey soil type(s)
  - vi. Source of regeneration, factors limiting regeneration, quality of existing regeneration
  - vii. Endangered or threatened species
  - viii. Other factors to note

**5. All FHPs submitted to WAC will be submitted on a Forest Harvest Plan Form.**

**6. Amending a FHP: All changes to the FHP after approval by WAC Easement Committee must be approved by the WAC Watershed Forester and Easement Stewardship Specialist prior to the landowner undertaking any action inconsistent with the approved FHP.**



# USEFUL REFERENCES

## Program Rates Summary

BMP Program		
Practice	Regular Rate	TLC Rate
Road Layout	\$0.12	\$0.12
Re-grading	\$0.08	\$0.10
Relocation	\$0.30	\$0.30
Post Harvest Stabilization	\$185.47	\$278.23
Corduroy	\$11.60	\$17.39
Water Bars	\$28.98	\$40.57
Broad Based Dips	\$57.97	\$81.14
Geotextile Fabric	\$1.15	\$1.74
WOH Gravel	\$11.60	\$17.39
EOH Gravel	\$23.20	-
Culverts (10-15")	\$13.91	\$20.87
Culverts (18")	\$18.54	\$27.82
Culverts (24")	\$24.35	\$37.10
Culverts (36")	\$61.90	\$92.86
Culverts (48")	\$75.41	\$112.55
Silt Fencing	\$0.30	\$0.42
Hay Bales	\$1.15	\$2.32
Max BMP Project Funding	\$5,796.38	\$7,315.82

BMP - Stream Crossing Program		
Practice	Regular Rate	TLC Rate
Implementing Plan	\$231.86	\$289.83
Corduroy	\$231.86	\$324.59
Water Bars	\$57.97	\$81.14
Post-Harvest Stabilization	\$115.93	\$162.31
Portable Bridge Cost Share	\$1,159.28	\$1,738.91
Portable Bridge Rental	\$1,304.19	\$2,318.54
Stream Crossing Max	\$3,477.83	\$4,389.49

480a Incentive Programs	
Practice	Regular Rate
Enrollment (Per acre)	\$477.41 + 5.84
Update (Per acre)	\$318.27 + .54

<b>Management Assistance Program (MAP)</b>	
<b>Practice</b>	<b>Regular Rate</b>
Hardwood Seedlings (ac)	\$289.83
Softwood Seedling (ac)	\$289.83
Tree Shelters (ea)	\$4.64
Fencing (ft)	\$2.32
Tree Designation (ac)	\$23.20
Cull Tree Removal (ac)	\$52.17
Light Thinning (ac)	\$69.56
Medium Thinning (ac)	\$104.33
Heavy Thinning (ac)	\$127.52
Riparian Improvement (ac)	\$347.78
Wildlife Crop Tree & Fruit tree (per tree)	\$23.20
Wildlife seeding (ac)	\$173.89
Seep protection & enhancement (ac)	\$281.39
Snag & cavity tree development (per tree)	\$28.14
Grassland (ac)	\$56.28
Shrubland (ac)	\$101.29
Sapling (ac)	\$450.20
Invasive Plant Control (ac)	\$231.86
Invasive Vine Control (ac)	\$57.97
MAP Round Max	\$2,898.19
MAP Yearly Max	\$5,796.38

## Glossary Of Terms

**480a:** Section 480a of the New York State Real Property Tax Law is open to landowners with >50 acres of contiguous forestland. Enrolling in '480a' requires landowners to abide by timber harvesting schedules in order to receive significant property tax reductions. To learn more about 480a, contact your regional NYS DEC forester.

**Adjacent Parcels:** Any parcels under a common ownership that share boundaries at the time of plan application.

**BMP:** Best Management Practice. A forestry BMP is a tool used to efficiently harvest timber and reduce non-point source pollution. A culvert is an example of a forestry BMP.

**MAP:** The Management Assistance Program for forestland owners in the New York City Watershed holding WAC Forest Management Plans. The MAP is a program run by WAC that funds the implementation of select plan prescriptions on a competitive basis based on semi-annual applications.

**New York City Watershed:** The eight county upstate New York and western Connecticut mountainous region that serves as catchment area for the reservoir network that supplies 9+ million metropolitan New Yorkers with water. New York counties include: Delaware, Dutchess, Greene, Putnam, Schoharie, Sullivan, Ulster and Westchester.

**NYS DEC:** New York State Department of Environmental Conservation, a state-governed agency. Watershed Foresters with the DEC work closely with WAC to review Forest Management Plans and provide outreach to forestland owners. DEC Region 4 includes Delaware, Greene, Schoharie Counties within the NYC Watershed. DEC Region 3 includes Sullivan, Ulster, Dutchess, Putnam and Westchester Counties within the NYC Watershed.

**NYC DEP:** New York City Department of Environmental Protection. The DEP is one of the primary funding sources for the WAC. Natural resource professionals and foresters help WAC to realize its mission and provide outreach and educational assistance to regional landowners.

**SIP:** Stewardship Incentive Program. A federal program targeting forestland owners. SIP is no longer available.

**TLC:** Trained Logger Certified. A certification granted to timber harvesters who have completed the appropriate course work by New York State Logger Training Incorporated.

**Trained Logger Certified:** An individual who holds Trained Logger Certification from the New York Logger Training, Inc. (coursework includes chainsaw operation, first aid and CPR, and forest ecology & silviculture).

**WAC:** Watershed Agricultural Council. A 501.c.3 not-for-profit organization with offices in Walton, NY and Yorktown Heights, NY. WAC's mission involves working with farmers, forestland owners, and natural resources professionals to reduce non-point source pollution through voluntary incentive programs and to ensure that agriculture and forestry remain viable economic commodities in the New York City Watershed.

**Watershed Forestry Committee:** A group consisting of Watershed Agricultural Council Directors, philanthropists, natural resources professionals, timber harvesters, foresters, wood products industry executives, government agency partners and other experts. The Committee oversees the WAC Forestry Program.

**WFP:** Watershed Forestry Program. An educational, outreach, economic development, and voluntary incentive program that is part of the Watershed Agricultural Council. The WFP receives its funding from the NYC DEP and the USDA Forest Service.

**Watershed Qualified Forester:** A professional forester with a B.S. or associate's degree in forestry who has completed a WFP - led sediment control workshop, riparian area delineation workshop and additional educational courses deemed necessary by Watershed Forestry Program Staff

## Watershed Forestry Program Contact Information

### West of Hudson Office

Watershed Agricultural Program  
33195 State Highway 10  
Walton, NY 13856  
Phone (607) 865-7790  
Fax: (607) 865-4932

**WAC Executive Director**, Craig Cashman

**Forestry Program Manager**, Tom Pavlesich  
tpavlesich@nycwatershed.org

### **Watershed Forester II**

**Watershed Forester I**, Karl VonBerg  
kvonberg@nycwatershed.org

### **Research and Evaluation Forester**

**Outreach Specialist**, Heather Hilson  
hhilson@nycwatershed.org

**Executive Assistant**, Nikole Hafele  
nhafele@nycwatershed.org

### East of Hudson Office

Watershed Agricultural Program  
1275 Hanover Street  
Yorktown Heights, NY 10598  
Phone (914) 962-6355  
Fax: (914) 962-5436

**Watershed Forester I**, Brendan Murphy  
bmurphy@nycwatershed.org

**Watershed Educator**, Tyler Van Fleet  
tvanfleet@nycwatershed.org

### **NYS DEC CONTACT INFORMATION**

DEC Region 4 Watershed Forester (607) 652-3624  
DEC Region 3 Watershed Forester (845) 256-3075

## **Related Web Sites**

### **Watershed Agricultural Council**

[www.nycwatershed.org](http://www.nycwatershed.org)

### **New York City Department of Environmental Protection**

[www.nyc.gov/dep](http://www.nyc.gov/dep)

### **New York State Department of Environmental Conservation**

[www.dec.ny.gov](http://www.dec.ny.gov)

### **USDA Forest Service**

[www.na.fs.fed.us](http://www.na.fs.fed.us)

### **Catskill Forest Association**

[www.catskillforest.org](http://www.catskillforest.org)

### **The Catskill Center for Conservation and Development**

[www.catskillcenter.org](http://www.catskillcenter.org)

### **Frost Valley YMCA**

[www.frostvalley.org](http://www.frostvalley.org)

### **Empire State Forest Products Association**

[www.esfpa.org](http://www.esfpa.org)

### **Cornell Cooperative Extension**

[www.cce.cornell.edu](http://www.cce.cornell.edu)

### **New York Logger Training**

[www.newyorkloggertraining.org](http://www.newyorkloggertraining.org)

### **SUNY College of Environmental Science and Forestry**

[www.esf.edu](http://www.esf.edu)

### **Trained Logger Certification**

<http://www.trainedloggercertification.com>

### **Watershed Model Forest Program Web Page**

[http://www.nycwatershed.org/for\\_rdintro.html](http://www.nycwatershed.org/for_rdintro.html)

### **US Geological Survey**

<http://www.usgs.gov/>

### **New York Forest Owners Association**

[www.nyfoa.org](http://www.nyfoa.org)

## NYC Watershed Region Maps



