



Green Mountain National Forest

Town Meeting Report

The employees of the Green Mountain National Forest (GMNF) depend heavily on support from many municipalities, volunteers, partners and contractors. The Forest would like to take this time to thank you and your community for the support and interest that you have shown in helping with the management of the approximately 400,000 acre GMNF. Receiving several million outdoor recreation enthusiast visits annually, these visitors seek enjoyment in a natural setting while providing critical benefit to the local economies. The GMNF is proud to be a part of Vermont and your town. It is truly one of Vermont's treasures and the largest contiguous public land area in the state. Forest staff work hard to achieve quality public land management under a sustainable multiple-use management concept to meet the diverse needs of the people -- people in your town as well as all of the visitors who come to Vermont every year. Below is a brief summary of what happened in your National Forest throughout the past year:

Land Acquisition

There were no additional acres acquired in the year of 2019. However, the program remains very active in that we are currently working on a large acquisition located in the towns of Chittenden, Killington and Mendon and a smaller parcel in Dorset. We have further opportunities in the towns of Lincoln, Warren, Ripton and Wallingford. We have been supported by each of the town select boards for these parcels. The addition of these public lands would not be possible without the assistance of The Trust for Public Land, The Conservation Fund, and the support of our local communities.

Heritage Program

Ongoing partner projects included artifact analysis conducted by the University of Vermont (UVM) Consulting Archaeology Program, the Vermont Archaeological Society (VAS), and the Forest. This

multi-year collaboration again involved the analysis of thousands of artifacts collected at the Homerstone Quartzite Quarry Project near Little Rock Pond.

Other highlights include:

- Heritage Program staff worked with local land owners to discuss and visit heritage sites within the Early Successional Habitat Creation (ESHC) project area. The purpose of these conversations and field trips was the explanation of how archaeological sites are recorded and then protected from activities that are proposed as part of the ESHC Project.
- Retired Forest Service personnel and volunteers visited a number of cemeteries within the Forest Proclamation Boundary to maintain and preserve them.
- The Forest Archeologist has been working with line officers and Vermont Division for Historic Preservation staff to develop a Programmatic Agreement (PA) that would create alternative procedures for addressing the workload involved with Section 106 of the National Historic Preservation Act. It is hoped that the PA will soon be implemented as a result of these efforts.

Road, Dam, & Facility Construction & Maintenance

In cooperation with federal, state and local governments, private contractors, and non-profit organizations, the GMNF Engineering staff repaired and maintained many roads, bridges and other facilities throughout the Forest. Some highlights are as follows:

Forest Facility Improvements & Maintenance: The Forest completed the addition and renovations to the Rochester Ranger District Workshop and on-going routine maintenance and repairs of other administrative buildings and infrastructure across the Forest. We also completed annual condition and safety inspections of all administrative facilities as well as out-year planning, design, and preparation for facility improvements.

Forest Road Cooperative Aid to Towns: Completed important road improvement and maintenance projects in the Towns of Goshen, Granville and Rochester. The Forest also continues to cooperate with the Town of Brandon and the Federal Highway Administration (FHWA) to complete the reconstruction of the Churchill Road Bridge that provides access to the Mossalamoo National Recreation Area. Funds were acquired for the project through a Federal Lands Access Program (FLAP) grant from FHWA. The Forest was able to provide construction inspection services that aided in the Town's share of the project funding.



Forest Road Improvement Projects: Improved 5.87 miles of National Forest System roads in the Towns of Chittenden, Goshen, Granville, Hancock, Manchester, Mount Tabor, Peru, Readsboro, Ripton, Rochester, Somerset, Stamford, Stratton and Woodford. This work included the replacement of culverts, stabilization of embankments, repairing storm damage, and resurfacing of roads.

Forest Road Maintenance: Maintained 97.43 miles of National Forest System roads in the Towns of Ripton, Rochester, Chittenden, Goshen, Hancock, Mount Tabor, Peru, Readsboro, Somerset, Stamford, Sunderland, Wallingford, Winhall and Woodford. This work included grading, culvert cleaning, mowing and brushing.

Road-Stream Crossing Improvements: Completed an Aquatic Organism Passage (AOP) project in the Town of Goshen on Forest Road 24B, Voter Brook Overlook. This project not only restores aquatic organism passage but also improves the flood resiliency of the road.

Recreation Programs

The following accomplishments highlight 2019 Recreation and Trail Program successes in acknowledgement of the outstanding collaborative effort exhibited between Forest Service employees, partner organizations, volunteers, State and local government representatives, and local businesses. The Forest Service relies on a community of collaboration and wishes to thank all of our partners, such as: Vermont Association of Snow Travelers (VAST), Vermont All-terrain Vehicle Sportsman's Association (VASA), Vermont Forests, Parks and Recreation, Vermont Youth Conservation Corps (VYCC), Rochester / Randolph Area Sports Trail Alliance (RASTA), Vermont Mountain Bike Association (VMBA), Green Mountain Club (GMC), Appalachian Trail Conservancy, Town of Killington and the Killington Mountain Bike Club, Vermont Huts Association, Addison County Bike Club, Catamount Trail Association (CTA), Counseling Service of Addison County, Middlebury High School Diversified Occupations Program, Moosalamoo Association (MA), Blueberry Hill Outdoor Center (BHOC) Vermont Trail Trotters (VTT), Vermont Horse Council, and many more – including our dedicated campground hosts.

With the help of the many hard-working volunteers and organizations we are able to provide a quality recreation experience in alignment with a strong environmental stewardship ethic. The following highlights capture large program accomplishments but represent only a portion of the annual work that is completed to develop, improve and maintain recreational opportunities on the GMNF:

Local Efforts:

Forest Service staff partnered with BHOC, CTA, GMC, MA, VAST, RASTA, VYCC, VMBA, and local contractors to repair trails and replace / upgrade 17 trail bridges in Barnard, Chittenden, Goshen, Killington, Mendon, Middlebury, Pittsfield, Ripton, Rochester, Stockbridge, and Warren.

Goshen, Leicester, Ripton, Salisbury: Numerous partners, agencies and organizations joined forces to discuss management of the Moosalamoo National Recreation Area. Strategic planning continues -- if you are also interested in helping, please contact the Rochester Ranger District.

Bethel: Bethel students learned about federal careers and public land management from Forest Service staff.

Chittenden: Completed trail improvements near Chittenden Reservoir with the support of the Chittenden Dammers and Mountain Top Inn & Resort.

Goshen: Collaborated with BHOC and MA to relocate a trail bridge.

Killington: Collaborated with the Town of Killington, Killington Mountain Bike Club and local contractors to construct Phase III of the Sherburne Trails, connected to Gifford Woods State Park. Local contractors worked to improve the Sherburne Trails parking lot. Smokey Bear visited campers at Killington Sumer Camp to teach about Vermont animals.

Killington and Rochester: Construction completed adding Marsh Brook Connector, Old Gent's, Creamery Run, and Pesky Cairn to mountain bike trail networks as part of the future Velomont, funded through State of Vermont Recreational Trail Program grants.

Killington, Stockbridge: Bear boxes were installed for food storage at high-use shelters along the Appalachian and Long Trails.

Leicester: Installed 11 new interpretive panels on the loop trail around Silver Lake.

Norwich: Continuing work with community organizations and partners to identify long-term trail connections within the Appalachian Trail corridor.

Ripton: Robert Frost renovations are underway with a new kiosk and boardwalk nearly complete to welcome visitors of all abilities.

Rochester: Collaborated with RASTA and local contractors to construct additional Rochester Valley Trails adjacent to the Ranger District office with connectivity provided by the generosity of local land owners. Site improvements at Bingo Brook Campground continue with a new entrance, kiosk and parking lot underway. Students from the Lexington School for the Deaf learned about our community while working on the National Forest and staying at Liberty Hill Farm.

Stockbridge: Woodsy Owl and Smokey Bear visited students at various events to teach about wildlife biology and Leave No Trace principles.

Wallingford: General Electric (GE) of Rutland assisted with the maintenance and pre-season clean-up at White Rocks Picnic Area for the 28th consecutive year! In partnership with GMC, a caretaker hosted visitors and maintained the Little Rock Pond Shelter and tenting area and maintained surrounding trails.

Mount Tabor: A new snowmobile bridge on the Ten Kilns trail at the fourth bridge site was installed over the past winter. Significant tread repair work was accomplished on Corridor 7 snowmobile trail north of Forest Road 10 and south of Forest Road 30 near Lake Brook. This repair work was in response to the severe rain event in April which caused wide-spread flood damage. A total of 4 miles of trail was restored within the Mount Tabor town boundary.

Weston: The local snowmobile club, Derry Sled Dogs, worked to restore the corridor of a section of trail within the White Rocks National Recreation Area so that regular winter maintenance could be accomplished safely. Approximately 4 miles of trail was restored.

Peru: In partnership with GMC, a caretaker hosted visitors and maintained the Griffith Lake Tenting Area and Peru Peak Shelter and maintained surrounding trails. Beach maintenance and trail repair work was completed at Hapgood Pond Recreation Area. Additionally, the Forest Service hosted a service group from Burr and Burton Academy in October. This group of students assisted with site maintenance within the campground.

Dorset: In partnership with Northshire Area Trail Systems (NATS), a VMBA chapter, initial construction of the 4 mile Dorset Hollow trail has been completed. This trail provides additional recreation opportunities in the Dorset area and is one of the first trails designed for mountain bike use (as well as other non-motorized uses) on the Manchester District.

Manchester: Smokey Bear showed up once again at the 3rd annual Vermont Trails Fest organized by the Manchester Appalachian Trail Community group. The group also organized an Appalachian Trail Local

History talk with retired Forest Service archeologist Dave Lacy. The talk was given at the Manchester Public Library in August.

Winhall: GMC volunteers replaced a pit privy with a more sustainable composting privy at Douglas Shelter.

Sunderland: A Wilderness Volunteers group spent a week maintaining a remote section of the Lye Brook trail near Bourn Pond in the Lye Brook Wilderness. The volunteer crew had participants from all over the continental United States.

Stratton: According to GMC's long-time caretakers at the Stratton tower, nearly 10,000 people visited or passed through this site from late May – Columbus Day. GMC crews spent several weeks working on a project that will improve the sustainability of recreation opportunities at Stratton Pond while protecting natural resources. A caretaker hosted over 1,000 overnight visitors at Stratton Pond Shelter and tenting area this past summer. This caretaker also maintained the privies and surrounding trails in the area. At Grout Pond Recreation Area, volunteers from CTA and Dutch Hill Alliance of Skiers and Hikers (DHASH) maintained trails for use by both hikers and skiers.

Woodford: Bennington Trail Cruisers (BTC), a VASA club, completed their second season of work on the Stage Coach Trail and Forest Trail 391 / Corridor 9. Work included drainage repairs and surfacing the trail to provide a positive experience for multiple user types. The Green Mountain Club's Volunteer Long Trail Patrol, in partnership with the Appalachian Trail Conservancy, and the National Park Service, worked on trail tread repair and maintenance on a stretch of the Long Trail / Appalachian Trail just south of Congdon Shelter. This work was completed over a six week period.

Readsboro: DHASH worked to open more areas of former Dutch Hill Ski Area to backcountry skiing and boarding. The group is currently working on implementing a sign plan.

Stamford: A local snowmobile club has worked to open the newly designated snowmobile trail connecting Vermont trails to Massachusetts trails. This work included constructing a ½ mile trail relocation around a wetland that connects to Wiley Mountain Road.

Wilderness:

The GMNF continued to implement the National Wilderness Stewardship Performance measures, including developing and implementing a Wilderness Interpretive Plan. A 2019 stewardship grant enabled the Forest Service to partner with the Society of Wilderness Stewardship to monitor and manage ecosystem processes with an emphasis on non-native invasive species and hydrology. Additionally, the Forest Service hired a Wilderness Technician to educate visitors about Leave No Trace principles while conducting monitoring efforts and data collection in wilderness areas.

Special Uses:

The GMNF administered 111 Land Special Use Permits to standard along with 12 proposals and applications processed to a decision. 36 Recreation Special Use Permits were administered to standard, with 16 proposals and applications being processed to a decision.

Botany Program

Botanical inventory for rare plants and non-native invasive plants was completed as part of the following projects:

- Telephone Gap Integrated Resource Project: all or part of ten roads (26.5 miles, invasive plants only) and approximately 622 acres in the towns of Chittenden, Goshen, Mendon, and Pittsfield.
- Somerset Integrated Resource Project: 295 acres in the towns of Stratton, Somerset, Wilmington, Searsburg, and Woodford.
- Early Successional Habitat Creation project: 289 acres (27 timber units) acres as part of the Bully Brook Sale in Wallingford and Weston Priory sale in Weston, and 81.3 acres (45 timber units and 4 adjacent wetlands) as part of the Old Job sale in Mount Tabor.
- Sites for 15 small projects in Bennington, Manchester, Peru, Readsboro, Ripton, Rochester, Mount Tabor, Stratton, Weston, and Winhall.



As a result of all these inventories, and some monitoring trips, 16 new populations of rare plants were found of the following species: hairy woodmint (*Blephilia hirsuta*), hay sedge (*Carex argyrantha*), marsh willow-herb (*Epilobium palustre*), meadow horsetail (*Equisetum pratense*), butternut (*Juglans cinerea*), Huron orchid (*Platanthera huronensis*) and roundleaf and large roundleaf orchids (*Platanthera orbiculata* and *P. macrophylla*).

Large roundleaf orchid photographed (above right) by Meghan Krietsh, visiting on an archeological detail.

Staff and volunteers also monitored 85 populations of already known rare plants Forest-wide, including some populations just off National Forest lands. As a result of this monitoring, rare plant habitats were maintained at three sites in Leicester, Lincoln, and Manchester.

In support of the Upper White River Cooperative Weed Management Association, of which the GMNF is a founding member, staff, with the help of Vermont Youth Conservation Corps, accomplished the following non-native invasive plants activities:

- Granville: Collected data on a new infestation of wild chervil at Rob Ford Meadows, and hand-pulled 26.3 acres of wild chervil on Forest Roads 50, 55, and 101.
- Hancock: Hand-pulled 5.8 acres of wild chervil at Texas Falls and Boyden Brook.
- Rochester: Recorded new infestations of Japanese barberry north of Bailey Road, and Japanese barberry and wall lettuce on Maple Hill; wall lettuce is a new species we are tracking. With the additional help of Sierra Club volunteers, staff also hand-pulled a small infestation of wall lettuce, plus infestations of wild chervil at the Rochester Ranger Station and near the entrance to Chittenden Brook Road, and flame-weeded Japanese barberry on Maple Hill.
- Pittsfield: Hand-pulled about an acre of wild chervil on the Spikehorn Trail, and some small infestations of wild chervil in Mayo Meadow, a short distance outside of the CWMA boundary.
- In June, provided wild chervil management direction to landowners, towns, and road crews via Front Porch Forum.

In addition to infestations controlled within the Upper White River Cooperative Weed Management Association boundary, many other small infestations were controlled by staff, contractors, volunteers, and partner organizations, including Vermont Youth Conservation Corps, Green Mountain Club, and Appalachian Trail Conservancy. While these infestations represent only a fraction of known infestations and many more are unmapped, they were chosen because they are in strategic locations or because they are relatively more feasible to control than others. A total of over 96.9 acres of the following species were controlled in these towns:

- Goshen: 6.1 acres of wild chervil along Forest Road 67.
- Manchester: 4.2 acres of woody invasive plants at the District Office and Richville Road riparian area, and 0.1 acres of wild chervil at the District Office.
- Pomfret: 18.2 acres of woody invasive plants, 0.3 acres of goutweed, and 3.1 acres of spotted knapweed at five maintained openings along the Appalachian Trail.
- Ripton: 58.9 acres of wild chervil and 0.1 acres of wild parsnip along various Forest roads and the Robert Frost trails.
- Salisbury: 2.4 acres of wild chervil along the road to Silver Lake.
- Shrewsbury: 1.8 of woody invasive plants in a maintained opening along the Appalachian Trail.
- Sunderland: 2.0 acres of purple loosestrife along the Kelly Stand Road.
- Wallingford: 0.1 acres of goutweed at a remote vehicle turn-around site.
- Warren: 0.3 acres of Japanese knotweed in a parking lot.
- Woodstock: 2.8 woody invasive plants and 3.5 acres wild chervil along the Appalachian Trail.

As a result of a grant received by the Batten Kill Cooperative Invasive Species Management Association, of which GMNF is a founding member, a coordinator was again hired through the AmeriCorps to plan and implement a variety of inventory, control and outreach / education events in 2019. This coordinator also assisted with the woody invasive plant control at Richville Road in Manchester. The CISMA incorporates parts of Rupert, Sandgate, Arlington, Shaftsbury, Dorset, Manchester, Sunderland, Glastenbury, Peru, Stratton, and Winhall.

Educational experiences were provided to Vermont Youth Conservation Corps and Sierra Club volunteers in return for their volunteer invasive plant control efforts. A snowshoe trip to look at winter plant and animal life was offered in Ripton. Plant walks were conducted for approximately 50 students as part of Vergennes Union High School's International Climate Action Day. A wildflower walk was provided for Native Plant Trust Plant Conservation Volunteers to Burnt Mountain in Salisbury.

Forest Vegetation Management

Below is a list of accomplishments for calendar year 2019.

- Three timber sales were sold in Chittenden, Goshen, Stamford and Rochester totaling approximately 10.1 million board feet of sawtimber and pulpwood.

- Timber sales were prepared in Chittenden, Hancock, Mount Tabor, Pownal, Readsboro, Stamford, Rochester and Wallingford. These sales are associated with the Early Successional Habitat Project, the South of Route 9 Integrated Resource Project, and the Robinson Integrated Resource Project.
- The Forest awarded contracts to remove damaged or diseased trees to prepare sites for reforestation on 255 acres in the towns of Granville, Hancock, and Peru,
- The Forest awarded contracts for timber stand improvement and crop tree release work on 97 acres of young forest in the towns of Chittenden, Granville, Ripton and Winhall.
- The Forest planted over 31,000 oak, spruce and pine seedlings in Pownal and Granville.
- Our staff cooperated with the Vermont Department of Forests, Parks, and Recreation and Middlebury College in the maintenance of Butternut Seed Orchards in Brandon and Middlebury. Seedlings were cultured from disease resistant trees found on State, private, and National Forest locations and were cross pollinated to further research and efforts to develop disease resistance.
- The Forest provided maple tapping opportunities to six permit and contract holders for almost 9,000 taps in the towns of Lincoln, Stockbridge, Pomfret, Wilmington and Mount Tabor.
- Staff sold two timber sales as part of the Robinson Integrated Resource Project. This project will include restoration activities and timber harvest on nearly 10,000 acres in Rochester, Hancock, Goshen, Pittsfield and Chittenden.
- Staff began preparing timber sales for the Early Successional Habitat Creation Project. This project would include habitat creation and timber harvest on approximately 1,000 acres per year over the course of 15 years for an estimated 15,000 acres in total across Arlington, Dover, Glastenbury, Jamaica, Landgrove, Manchester, Mount Holly, Mount Tabor, Peru, Pownal, Readsboro, Searsburg, Shaftsbury, Stamford, Stratton, Sunderland, Wallingford, Wardsboro, Weston, Wilmington, and Woodford.
- Staff developed proposed vegetation management activities for the Somerset Integrated Resource Project in Dover, Glastenbury, Stratton, Somerset, Searsburg, Wilmington, and Woodford.
- Staff collected forest inventory data and conducted landscape assessment in support of vegetation management for the Telephone Gap project in Chittenden and Pittsfield.
- Permits were sold for approximately 333 cords of firewood, 400 (estimated) Christmas trees, 840 pounds of wild apples, 2 tons of boughs, 400 pounds of spruce tips, and 200 pounds of wild mushrooms.
- Staff continued work in restoring native trees (including butternut, American chestnut and beech) with research partners. GMNF employees located “challenged” beech trees that appeared to be resistant to beech scale insect in order to test their resistance.

Environmental Planning

In calendar year 2019, Forest staff completed 31 site-specific National Environmental Policy Act (NEPA) decisions and analysis documents for multiple resource projects designed to implement the Green Mountain National Forest Land and Resource Management Plan (Forest Plan). A major highlight to note includes the final decision for the Early Successional Habitat Creation Project located in multiple towns throughout the Manchester Ranger District including Arlington, Dover, Glastenbury, Jamaica, Landgrove, Manchester, Mount Holly, Mount Tabor, Peru, Pownal, Readsboro, Searsburg, Shaftsbury, Stamford, Stratton, Sunderland, Wallingford, Wardsboro, Weston, Wilmington, and Woodford. This project was initiated in early 2018, and the decision reflects collaborative efforts with towns, agencies, organizations and individuals to increase available early successional habitat important to perching birds and other wildlife species across a large landscape area.

In March, the Somerset Integrated Resource Project located primarily in the towns of Dover, Glastenbury, Stratton, Somerset, Searsburg, Wilmington, and Woodford was formally proposed for public comment. The Somerset project proposed action was the culmination of over two years of field inventory and public involvement conducted by Forest Service staff. Included in the proposal are activities to improve wildlife and fish habitat, restore soil and water conditions, increase recreation and scenery viewing opportunities, and improve the trail and road network. The proposal also includes the harvesting of timber to provide wood products to the local and regional economy, enhance forest health and diversity, and create more diverse plant and wildlife habitat. The project environmental assessment is scheduled for an additional public comment period in early 2020 with a final decision expected by summer.

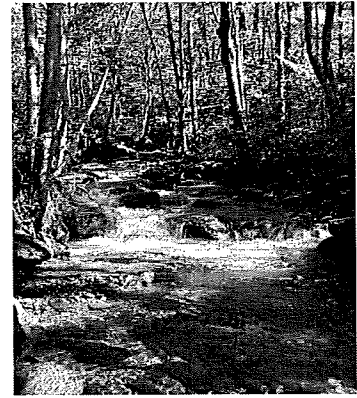
Other highlights include the Appalachian Trail / Long Trail -- Stratton Pond Relocation, and the Stratton Pond Recreation Area Realignment projects both located in the town of Stratton where trail relocations and campground improvements address ongoing water and soil resource concerns. Of special note on the northern part of the Forest, existing culverts along roads were approved for replacement with structures allowing free aquatic passage across Forest Road 24B (Moosalamoo Spur) in the town of Goshen, and across the Lincoln Gap Road in the town of Lincoln. There were also multiple special use permits issued for private land access (towns of Rochester, Lincoln, and Winhall), powerline right of way (town of Ripton), communication tower site expansion (town of Warren), and various recreation events across the Forest.

Fisheries Improvement

Forest staff monitored fish populations throughout the GMNF in 2019. This monitoring is part of a long term data collection effort to understand fish populations on the forest. Additional sites were sampled to support the Vermont Department of Environmental Conservation. Streams in the following towns were sampled during 2019 field season: Rochester, Lincoln, Chittenden, Pittsfield, Pittsford, Hancock, Ripton, Granville, Landgrove, Weston, Peru, Pawlet, West Pawlet, Woodford, Searsburg, Sunderland, and Dorset.

The Forest Service and partners completed three Aquatic Organism Passage (AOP) projects in 2019. Projects were completed on Hank's Brook, Voter Brook, and Mad Tom Brook in the towns of Warren, Goshen, and Peru respectively. These projects help restore connectivity to important trout habitat and provide infrastructure resilience to flooding. Project partners included the town of Warren, Trout Unlimited, Friends of the Mad River, U.S. Fish and Wildlife Service, the White River Partnership, and the State of Vermont.

In the town of Rochester the GMNF hosted the third annual Freshwater Snorkeling Program. Over a two week period in September, 350 students spent a full day learning about the importance of fresh water resources and aquatic ecosystems. Schools from Rochester, Rutland, Stockbridge, Bethel, Tunbridge, South Royalton, Chelsea, Randolph, Braintree, Killington and Pomfret (Prosper Valley) participated. The White River Partnership has joined this effort and we look forward to providing this educational opportunity for the foreseeable future. We are also looking for other watershed partners to expand this program.



The GMNF, in cooperation with Vermont Department of Fish and Wildlife, continued the aerial stocking of native brook trout to high elevation ponds at Griffith Lake and Big Mud Pond in Danby, Stratton Pond in Stratton, Little Rock Pond in Wallingford, and Branch, Bourn and Beebe Ponds in Sunderland. Stocking these high elevation ponds supports a native brook trout fishery and could help create viable populations in these remote ponds. Additionally, Stocking at Hapgood benefitted an annual fishing derby in Peru hosted by the Manchester Ranger District. A fishing derby was also held at King's Pond in Rochester in partnership with the Route 100 Lion's Club.

Riparian planting occurred at multiple sites within the White River watershed to help restore aquatic habitat. The GMNF assisted the White River Partnership, Vermont Youth Conservation Corp, and The Nature Conservancy at sites in Granville, Bethel, and Rochester. A portion of these plantings included Dutch elm disease resistant American elm.

Stream restoration activities occurred throughout the forest enhancing aquatic habitat along 5.5 miles of forested streams by reintroducing large wood material. Adding large wood material improves habitat conditions for aquatic organisms and restores stream processes. These activities took place on the Little Mad Tom Brook in Peru and Chittenden Brook in Rochester. Trout Unlimited has been a terrific partner in making this work happen on the Forest. In Rochester, the final phase of the West Branch restoration project was completed by restoring 1000 feet of stream channel. The West Branch project has been a multi-year effort to rehabilitate a site damaged during tropical storm Irene.

Wildlife Habitat Improvement

Wildlife habitat was improved and maintained through the creation and maintenance of early successional habitat important to many species. Approximately 200 acres of permanent upland openings were maintained by prescribed fire, mowing, or mastication in the towns of East Dorset, Goshen, Granville, Hancock, Hartford, Lincoln, Manchester, Mount Holly, Mount Tabor, Pittsfield, Pomfret, Ripton, Rochester, Warren, Stockbridge, Salisbury, South Wardsboro, Stratton, Woodford, and Winhall. Nearly 70 acres of new permanent upland openings were created as part of timber harvests in Granville and Peru. In addition, apple trees, which provide high-value wildlife food, were "released" by cutting competing vegetation in old orchards in Rochester, Dorset, Pittsfield, Mount Holly, Mount Tabor, Peru, Readsboro, Somerset, Stratton, Weston, and Winhall.

Wildlife biologists and technicians continued work with the Vermont Department of Fish and Wildlife to monitor the populations and habitat requirements of bats since the advent of white-nose syndrome. Additionally, Forest Service staff are working with State of Vermont biologists and researchers from Virginia Tech on an experiment to understand resistance to white-nose syndrome in little brown bats in the town of Stockbridge. Potential timber sale units within the boundaries of the Somerset Integrated Resource Project (towns of Somerset and Stratton) were monitored to determine the species composition

of the bats on the landscape. Forest Service staff also assisted the Vermont Department of Fish and Wildlife with Indiana bat monitoring in Bridport and Addison.

Peregrine falcon nest sites on the GMNF in Rochester, Salisbury, Stockbridge, and Wallingford continue to be monitored, and closures to protect sensitive nesting habitat continue seasonally from March 15th to August 1st each year at all sites except Wallingford. The peregrine falcon was removed from the federal list of endangered and threatened species in 1999 and the Vermont State list of endangered species in the spring of 2005; however, the species remains on the Regional Forester Sensitive Species list.

In a partnership with Forest Service State & Private Forestry, pollinator habitat was assessed in permanent upland openings located in Granville, Hancock, Pittsfield, Rochester, Danby, Mount Tabor, Winhall, Mount Holly, Wallingford, and South Wardsboro. Our objective was to understand the distribution of milkweed in forest openings and milkweed's response to management activities and treatments within and near the Forest.

GMNF staff continued to work closely with the Vermont Department of Fish and Wildlife on a black bear study in the vicinity of the Deerfield Wind Project site. The goal of this long-term effort is to determine how the project may impact black bears and their use of the habitat surrounding the project site. Bears were captured, radio-collared, and tracked in the towns of Readsboro, Stamford, and Woodford.

Along with the Vermont Department of Fish and Wildlife and Central Connecticut State University, the GMNF staff assisted in deploying camera traps at several sites within the Manchester Ranger District to determine the presence and habitat utilization of the American marten, which was reintroduced to the Forest in the early 1990s after it was believed extirpated. Camera traps were used within the towns of Arlington, Bennington, Dorset, Glastenbury, Manchester, Mount Tabor, Readsboro, Somerset, Stratton, Sunderland, Weston, Winhall, and Woodford. This is an ongoing study on the Forest.

In another partnership with the Vermont Department of Fish and Wildlife, GMNF staff continued a program to monitor for the possible presence of the federally-threatened Canada lynx through the use of camera traps. This program began in response to two confirmed lynx sightings in 2016 near GMNF lands. The goal was to determine if a breeding population occurs on the GMNF while also collecting valuable data on other carnivores. Camera traps were monitored across the GMNF in the towns of Chittenden, Hancock, Glastenbury, Granville, Killington, Leicester, Lincoln, Manchester, Mount Holly, Mount Tabor, Peru, Readsboro, Ripton, Searsburg, Somerset, Stamford, Stratton, Sunderland, Wallingford, Wardsboro, Warren, Weston, Wilmington, Winhall, and Woodford. Despite the camera trapping effort, monitoring has not provided evidence of a breeding population in the Forest.

Soil / Water Monitoring

Best Management Practice (BMP's) monitoring took place throughout the Forest in 2019. The National BMP Program integrates water resources protection into management activities across the landscape. The program is intended to demonstrate compliance with the Clean Water Act, which is required by the Environmental Protection Agency (EPA) and administered by the states, through rules and regulations, including Vermont's Acceptable Management Practices (AMPs) for logging jobs, and Vermont water quality standards. Forest Soil Disturbance Monitoring was conducted on 10 timber sale units throughout the Forest to estimate forest management effects on soil and water resources.

Long-term Ecosystem Monitoring

Between 2008 and 2011, twenty Long-term Ecosystem Monitoring Plots (LEMPs) were established on the GMNF in order to measure change in key ecosystem parameters over the next fifty years. The GMNF worked with partners to review and refine methods and identify opportunities for additional collaboration in gathering and processing monitoring data. Through an agreement with UVM's Rubenstein School of Environment and Natural Resources (RSENR) and the Forest Ecosystem Monitoring Cooperative (FEMC), five plots were sampled this year in Mount Tabor, Stamford, Woodford and Peru.

During 2015, a group of collaborators from the RSENR, the Vermont Department of Forests Parks and Recreation and the FEMC developed a state-wide network of forest health monitoring plots, building on past and existing forest health monitoring initiatives, including plots on the GMNF associated with the GMNF LEMP project, the Forest Service's Forest Inventory and Analysis Program, and the State's Hardwood Health Survey. This partnership led to the inclusion of a total of 12 plots on the GMNF as part of this network, in the towns of Bristol, Lincoln, Ripton, Salisbury, Leicester, Hancock, Rochester, Wallingford, Peru, Winhall, and Woodford. Monitoring at these locations will provide insight into long-term changes occurring in relatively undisturbed forest ecosystems in response to stressors such as atmospheric deposition, climate change, and invasive pests. These plots were monitored in 2017, 2018, and 2019.

Research Activities

The following is a list of research approved and conducted on the GMNF during 2019:

- Lauren Ash, Graduate Student at the University of Vermont conducted a survey for the presence of Ranaviruses and other amphibian disease in green frogs (*Lithobates clamitans*), wood frogs (*Lithobates sylvaticus*), spring peepers (*Pseudacris crucifer*), spotted salamanders (*Ambystoma maculatum*), and Eastern newts (*Notophthalmus viridescens*), in the vicinity of Abbey Pond in the towns of Bristol and Ripton.
- Dr. Paul Hapeman, Assistant Professor of Biology at Central Connecticut State University continued a research project studying the extent of occurrence of American marten (*Martes americana*) in southern Vermont and northwestern Massachusetts and key habitat features associated with their presence. Work on GMNF included the towns of Sunderland, Stratton, Glastonbury, and Somerset.
- Jordon Tourville and the Dovciak Lab from the University of Michigan completed understory vegetation surveys along pre-established sites within the GMNF in the towns of Lincoln, Mendon, and Shrewsbury. These completed surveys also involved establishing temperature monitoring sensors, seedling collection, and soil core collection. Future work will involve further soil sampling and retrieval of the temperature loggers.
- James Crall, Harvard University, conducted research on the thermal ecology of bumblebee (*Bombus impatiens*) nests.
- Dr. Kirsten Deane-Coe and undergraduate researcher Annie Colgan, Middlebury College, conducted research to evaluate moss species and soil conditions in the town of Lincoln.

Wildfire and Prescribed Fire Activities

Fire management personnel on the GMNF were very active this past season accomplishing twenty two prescribed fires while suppressing four GMNF wildfires. Prescribed fire treatment objectives were focused on hazardous fuel reduction in the forest, improving wildlife habitat and reinvigorating blueberry patches. The following are the prescribed burns that were carried out and the wildfires that were responded to this past year.

Prescribed Fire Table:

Town	Activity	Name	Acres
<u>Ripton</u>	Prescribed Fire	Goshen Blueberry	10
<u>Granville</u>	Prescribed Fire	Perry basin	25
<u>Granville</u>	Prescribed Fire	Rob Ford	10
<u>Pownal</u>	Prescribed Fire	Dome	370
<u>East Dorset</u>	Prescribed Fire	Bowen	10
<u>Stratton</u>	Prescribed Fire	Branch Pond	2
<u>Winhall</u>	Prescribed Fire	Country Road B	13
<u>Winhall</u>	Prescribed Fire	French Hollow	5
<u>Wallingford</u>	Prescribed Fire	Homerstone	75
<u>Peru</u>	Prescribed Fire	Pumphouse	25
<u>Wilmington</u>	Prescribed Fire	Wardsboro	60
<u>East Dorset</u>	Prescribed Fire	Mad Tom	60
<u>Woodford</u>	Prescribed Fire	Little Pond	10
<u>Manchester</u>	Prescribed Fire	Richville	15
<u>East Dorset</u>	Prescribed Fire	Sunnyside	240
		Total Acres	930

Wildfire Table:

Town	Activity	Name	Acres
<u>Mount Tabor</u>	Wildfire	Little Rock Pond	.10
<u>Mount Tabor</u>	Wildfire	FR71	.10
<u>Stratton</u>	Wildfire	Branch Pond South	.10
<u>Stratton</u>	Wildfire	Branch Pond North	.10

In addition to prescribed fire that was performed in Vermont, 25 individuals were involved with providing support directly or indirectly for wildfire season locally and throughout the nation. This support included assisting in the mobilization of resources or by directly responding to wildfires and all hazard incidents throughout the nation. The fire crew also supported three military bases in New Hampshire and Massachusetts for a total of 510 acres and the Finger Lakes National Forest in New York State for 300 acres. The majority of all the prescribed burns were performed in the wildland urban interface.

The fire management staff would like to thank the dedicated firefighters from the volunteer and local fire departments that responded to and assisted in the suppression of the wildfires that occurred this past year on the GMNF.

Public Outreach / Conservation Education

Employees of the GMNF were invited to attend the 2019 Addison County Fair and Field Days in Addison, where they were asked by passersby to answer many questions from the public about management efforts on the 400,000 acre National Forest. The fair continues to be a wonderful venue to discuss GMNF related issues with our partners and gather information from the public.

Each year, GMNF employees join partners in the Forestry Building at the Vermont State Fair in Rutland where exhibits from the Vermont Department of Forest, Parks & Recreation, the GMNF, Vermont Audubon Society and many other local entities are displayed. During 2019, Smokey Bear was again featured at the fair and greeted visitors. Smokey and his handler continue to enjoy fielding questions about forestry and fire safety topics from adults and children.

On Wednesday, June 5th, employees of the Green Mountain National Forest (GMNF) traveled to Loudon, NH to participate in the Dale Jr. Foundation Safe Kids 301, presented by Speedway Children's Charities and Safe Kids New Hampshire. The Forest Service had been invited to participate by the Children's Hospital at Dartmouth-Hitchcock (CHAD) another lead sponsor. This was one of many stops that Smokey Bear made in 2019 to celebrate his 75th Birthday. At the event, hundreds of local children learned about bicycle safety, visited the Forest Service skins and skulls interpretive display to learn more about wildlife and had an opportunity to ride their bikes around the NASCAR track.

On June 11th and 12th, Forest Service employees from the GMNF and the Boston Urban Connections Program teamed up with Seacrest Studios at the Boston Children's Hospital to hold the skins and skulls educational program and a 75th birthday celebration for Smokey. The skins and skulls program was made available to patients in person and televised internally for those that were unable to attend. Forest Service employees worked with children to identify several mammals found in and around forests, animal identification, what type of habitat each animal thrives in, what each animal likes to eat and things that might threaten each animal's survival. Animal skulls helped illustrate different teeth types and offered an opportunity to discuss sharp meat eating (carnivore) teeth compared to those that are designed more for eating plants / vegetation. Smokey Bear made an appearance as the 'Greeter of the Day' spreading his messages about fire safety and wildfire prevention. Smokey interacted with almost 1,000 kids, parents and hospital staff in Boston – receiving many birthday hugs and fist bumps as he posed for group photos.

On July 9th, Smokey again hit the road with Forest Service staff where he joined children and employees in Burlington at the University of Vermont Children's Hospital. After the skins and skulls program Smokey and staff were able to distribute some special 75th Birthday gifts to the kids who posed for pictures and offered affection in return.

Smokey Bear, along with U.S. Forest Service employees from Vermont, the Massachusetts Department of Conservation and Recreation (DCR) and the Northeastern Forest Fire Protection Compact, participated in the August 18th Red Sox 1:05 p.m. pregame celebration at Boston's Fenway Park. This was a wonderful opportunity for Smokey to connect with the public and to educate folks about wildfire prevention. It goes without saying that we are all very proud of the work that Smokey has done over the past 75 years – the best news is that he isn't showing any signs of slowing down. Since his birthday Aug. 9, 1944, Smokey Bear has been a recognized symbol of conservation and protection of America's forests. His message about wildfire prevention has helped to reduce the number of acres lost annually to wildfires, from about 22 million (1944) to an average of 6.7 million annually today. However, wildfire prevention remains one of the most critical issues affecting our country. Many Americans believe that lightning starts most wildfires. In fact, nine out of 10 wildfires nationwide are started by humans.


Again in 2019 the GMNF partnered with Shelburne Farms to support the Forest for Every Classroom, Climate Resiliency program which works to educate New England-based teachers about forest stewardship issues, provide tools to develop place-based service-learning curricula that meet current educational standards, and use local landscapes, resources and community to connect classroom learning to real world application. Over the course of the year-long program participants integrate hands-on natural and cultural explorations into curriculum to address concepts in ecology, sense of place, stewardship, and civics. Participants in turn implement their learning into their instruction during the school year, then share out and reflect on their experiences with their fellow peers. The program continues to be a huge success in helping educators transfer and translate sustainability concepts in to their curriculum, instruction, and life.

Another critical program that we are proud to support is the Vermont Envirothon. The Vermont Envirothon helps students focus on Vermont’s environmental issues related to forestry, wildlife, soils and water resources through real-world learning in a teamwork environment. We would like to thank the Vermont Association of Conservation Districts for coordinating this important program and the many agencies and natural resource and conservation partner organizations that work hard to make the Vermont Envirothon possible each year. The program provides an opportunity for hands-on field experiences and activities with professionals in the field and serves as a way for high school-aged students to actively learn more about the natural world around them while they work together. Students learn to incorporate science-based investigations in helping to explore environmental issues. The 24th Vermont Envirothon was held on May 22, 2019 at Vermont Technical College in Randolph, Vermont. Eight schools across the state explored the Envirothon curriculum this year. Ten teams were able to join for the culminating event. Score and award results were as follows:

- First Place Overall Total Score: Bellows Falls Union High School
- Second Place Overall Total Score: Stafford Technical Center Team #2
- Third Place Overall Total Score: Randolph Technical Career Center Team #2

Another key component of the Envirothon program in 2019 was the Training Day held on April 3 at Marsh Billings Rockefeller National Historical Park and Billings Farm and Museum in Woodstock. A total of 70 people participated in this event.

Again, thank you for your support of your National Forest. Together, we will continue to maintain and improve this valuable treasure for generations to come. Our offices are open Monday through Friday from 8:00 AM until 4:30 PM. You can also visit us and learn more about the GMNF at our website online: <https://www.fs.usda.gov/gmfl>. Like us on Facebook: <https://www.facebook.com/GreenMountainFingerLakesNF/>

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