STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

**ENVIRONMENTAL ASSESSMENT CHECKLIST**

**Date:** March 6, 2019

**Municipality:** Voluntown and Griswold

**Staff Contact:** Emery Gluck

**Project Name:** Pachaug State Forest Stone Hill 8, 9, and 12 Prescribed Burns

**This assessment is being conducted in conformance with the generic Environmental Classification Document for Connecticut State Agencies to determine Connecticut Environmental Policy Act (CEPA) obligations.**

**Project Description:** The proposed project is multiple prescribed burns on a total 346 acres over 3 or more years. Repeated droughts, Gypsy moth and Chestnut borer infestation have killed over 90% of the oaks. The primary goal is to reduce public and firefighter exposure to the hazards created by falling trees and potentially intense wildfires. Another goal is to promote the regeneration of an oak forest with a pitch pine component. Oak forests are not sustaining themselves under current natural conditions. They were historically sustained after Native American fires, agricultural land abandonment, and clearcuts. The recent lack of these activities have allowed less ecologically valuable and shade-tolerant birch, beech and maple to become entrenched in oak forests. It is anticipated, given the current trajectory, that oak forests will eventually be displaced by other hardwoods in absence of forest management that often includes prescribed burns. The slow displacement of oak forests (which are extremely valuable to wildlife) throughout the east has been called an impending ecological crisis.

The burns will consume primarily leaf litter, logging slash, grasses, huckleberry and some standing dead trees. The burn should top-kill or weaken understory shrubs and birch, beech, and maple saplings while creating a good seedbed for acorn germination and shade sensitive oak seedling development. The larger oaks have thick bark which should minimize injury from low-intensity fires.

It is anticipated that 37 acres will be burned in 2019 and the remaining acreage in 2020 and later. Repeat burns may be scheduled if acorn crops do not develop shortly after the burns. The proposed burn window is February to May 15th and Labor Day to November 30.

**Regulations of Connecticut State Agencies (RCSA) Section 22a-1a-3 Determination of Environmental Significance (Direct/Indirect):**

1. *Impact on air and water quality or on ambient noise levels*
   1. *Air Quality –* The entire State of Connecticut, including the project area, is currently in non-attainment for 8-hour ozone. The project area, along with the rest of the State of Connecticut, is in attainment for all other criteria air pollutants: particulate matter (<10 micrometers in diameter-PM10or <  2.5 micrometers in diameter-PM2.5); sulfur dioxide (SO2); nitrogen dioxide (NO2); carbon monoxide (CO); and lead (Pb). The project is an historic land management activity that will substantially but temporarily increase air pollutants in the project area and in the immediate downwind area. The relatively short duration of the burn along with a good dispersion rate should facilitate a quick return to the ambient air quality.
   2. *Water Quality –* “In general, it appears that prescribed fire or other fuels management approaches have little impact on water quality in eastern North America. When soils are deep and the fire severity is low, few water quality changes have been observed and those that have been reported are generally short-lived (<1 year).” Kolka, R.F. Effects of Fire and Fuels Management on Water Quality of Eastern North America. USDA Forest Service Northern Research Station, p 14.
   3. *Ambient Noise Levels –* No negative impacts are anticipated.
2. *Impact on a public water supply system or serious effects on groundwater, flooding, erosion, or sedimentation*
   1. *Water Supply –* The project is within the headwaters of the watershed of Misery Brook which flows into Pachaug River at Beachdale Pond. No known public water supplies are fed directly by Mount Misery Brook. The burn area consists of flat and modestly sloped uplands with no perennial streams. The burn area is a small proportion of the total watershed. No negative impacts are anticipated on water quality.
   2. *Groundwater –* No significant negative impacts are anticipated.
   3. *Flooding –* Though most of the leaf layer will be consumed, a significant portion of the duff layer (decomposed leaves and other organics) is expected to remain intact except where there are concentrations of fuels. No significant decrease in the forest floor’s infiltration rate of rainfall should occur. New growth is expected to germinate or re-sprout within a month or two after the burn. In the East, it has been generally found that low-intensity fire leads to little or no additional increases in flows. No negative impacts are anticipated.
   4. *Erosion or Sedimentation –* Trees and shrubs roots should remain intact and assist in holding the soil, at least until new vegetation gets established. Hardwoods have co-existed with over 6000 years of Native American fires partly by their ability to sprout prolifically after the tree trunks are killed. Infiltration rates of the forest floor should not be significantly altered. In the East, it has been found that prescribed fire does not lead to significant increases in surface runoff or higher sediment transport. No evidence of erosion was noticed from 118 prescribed burns on DEEP land covering 1500 acres since 1991. Natural vegetation occurs quickly after spring burns (see pictures below courtesy of Dr. Jeff Ward, CT Agricultural Experiment Station). No negative impacts are anticipated.

April 2004 prescribed burn within Deep Hollow Watershed April 2004 prescribed burn within Deep Hollow Watershed picture taken June 2005

May 5, 2000 prescribed burn Deep River, CT photo taken 5-30-2000 Same May 5, 2000 prescribed burn photo taken August 2000.

1. *Effect on natural land resources and formations, including coastal and inland wetlands, and the maintenance of in-stream flows* – No negative impacts are anticipated.
2. *Disruption or alteration of an historic, archeological, cultural, or recreational building, object, district, site, or its surroundings –* The remains of two colliers’ hut chimneys, charcoal mounds, and stone piles are the only known historic remnants found to date on the site. No negative impacts are anticipated to these assets.
3. *Effect on natural communities and upon critical species of animal or plant and their habitats; interference with the movement of any resident or migratory fish or wildlife species –*

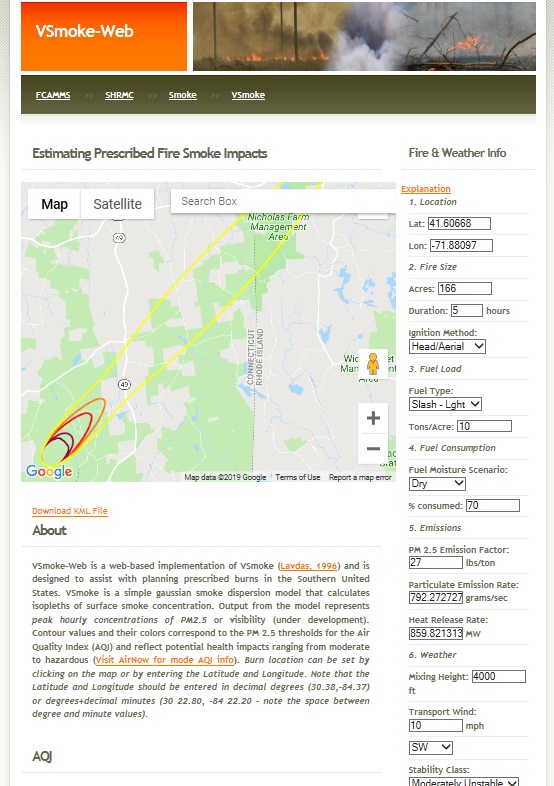
A response from the DEEP Natural Diversity Database (NDDB) made suggestions to avoid impacts to State-listed species populations. Those suggestions will be followed.

1. *Use of pesticides, toxic or hazardous materials or any other substance in such quantities as to create extensive detrimental environmental impact –* The use of Class A foam will be used judicially if used at all. It will not be used with within 100’ of a stream. Drip torch fuel that consists of a diesel and gas mixture fuel will be used for ignition. The fuel will not be stored or mixed within 50’ of a stream. The fire will consume the drip torch fuel used. No negative impact is anticipated.
2. *Substantial aesthetic or visual effects –* The blackened ground will fade in short time and the burn will stimulate germination and sprouting of forbes, grasses, and woody vegetation. No substantial negative impact will occur.
3. *Consistency with the written and/or mapped policies of the Statewide Plan of Conservation and Development and such other plans and policies developed or coordinated by the Office of Policy and Management or other agency –* Based on areas identified on the 2018-2023 Draft LGM (Location Guide Map) Interactive Web App for the 2018-2023 State Conservation and Development Policies Plan, the project is located within a Protected Area.

The project is largely consistent with the policies of the Recommended Draft 2018-2023 State Conservation and Development Plan. The plan states under GROWTH MANAGEMENT PRINCIPLE #5 Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety, State Agencies Policies: 5.10 Reduce carbon dioxide emissions in this state consistent with the recommendations of the Connecticut Climate Change Preparedness Plan.

Research “results showed that after gypsy moth defoliation, standing dead trees as well as coarse woody debris increased. This led to an increase in decomposition and the release of more CO2 (part of ecosystem respiration, or Re). This increase in woody debris also decreased the forest’s ability to absorb carbon as a system over time (net ecosystem production, or NEP… This occurred even though thetrees and shrubs that recovered or started from seed were photosynthesizing at similar rates to pre-gypsy moth levels.” Citation from North Atlantic Fire Science Exchange Research brief, December 2018 Newsletter. [Insect damage v. Prescribe Fire: Comparing long-term Carbon Impacts](https://us9.campaign-archive.com/?u=891fd049b58040013b11c0032&id=49f2ef53a5). The research implies that much of the release of CO2 from the burns would be released anyway from the decomposition (respiration) of the dead material. A temporary relatively insignificant impact is likely.

1. *Disruption or division of an established community or inconsistency with adopted municipal and regional plans –* No negative impact will occur.
2. *Displacement or addition of substantial numbers of people –* No substantial amount of people will be displaced.
3. *Substantial increase in the congestion (traffic, recreational, other) –* Lawrence Road (entirely in Pachaug Forest) will be closed for public safety during the burn and will not affect traffic outside the forest. No negative impact will occur.
4. *A substantial increase in the type or rate of energy use as a direct or indirect result of this action –* The burn will release a substantial amount of energy in the form of heat but there will be no significant increase in use of fossil fuels.
5. *The creation of a hazard to human health or safety –* The trails in or adjoining the burn will be closed the day of the burn. If the wind is out of the southwest and the smoke does not have the fastest lift, smoke-sensitive people residing closest to the burn may want to stay indoors or be away for a few hours. Letters will be sent closest residents informing of the burn with an offer to notify them the day before the burn if they send an email request.

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1. *Any other substantial impact on natural, cultural, recreational or scenic resources –* No negative impact is anticipated.

**The Following Comments Were Received During the Scoping Process:**

Friends of Pachaug Forest

36 Tatro Road

Griswold, Ct 06351

December 28, 2018

Kevin Grady, Protection Forester

DEEP, Bureau of Natural Resources

Goodwin State Forest, 23 Potter Road, Hampton, CT 06247

Dear Mr. Grady,

Friends of Pachaug Forest Inc. is pleased that Connecticut DEEP is taking progressive forest management actions in the areas of the forest that have been heavily impacted by the invasions of gypsy moths over the past few years.

Friends of Pachaug Forest Inc. is a non-profit 501 (c) (3) that was established in February 2018. We now have membership exceeding 130 members including members from both the US and Canada and multiple states. We are dedicated to the conservation of, education about, recreational use of and volunteerism to Pachaug State Forest.

Today is the date requests for Scoping meetings about your planned prescribed fires in the Forest are due to you.

This request is not, per se, a request for a Scoping meeting. Friends of Pachaug Forest Inc. would prefer to simply have a presentation about this project by your staff, followed by a question and answer period.

We feel there is need for you to explain to our membership the rationale and objectives for the prescribed burns, the locations where they are intended to be done, the timing and methodology of doing the burns and the expected outcomes including potential positive and negative impacts. We are especially interested in how DEEP expects these prescribed burns to impact plant succession and wildlife occupation in the forest areas that have been disturbed by both gypsy moth and salvage logging activities. Most of our members are unfamiliar with anything about prescribed burning, so we look forward for the opportunity for them to learn about it.

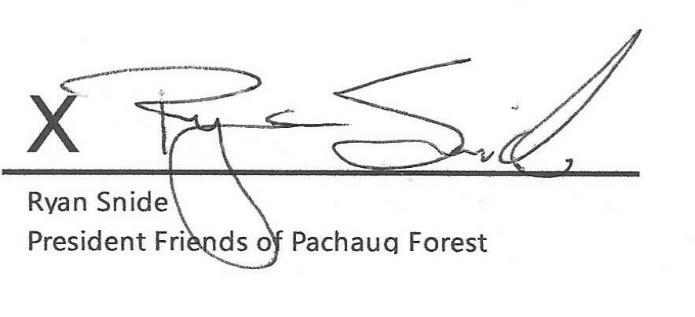
While we recognize the above items we want you to present are generally covered by the host agency during a Scoping meeting we do not feel that formal level of meeting is necessary. We believe any questions we have about this project and its potential impacts can be asked and answered during a presentation meeting, thereby reducing follow up work burden that would be required of your staff members following an official Scoping meeting. If any of our questions are left unanswered at the end of the meeting we are certain your staff can address them and notify us prior to burn implementation.

Feel free to work directly with Vice President Bob Panko to arrange dates, number of attendees and potential locations for this presentation. We would like to keep this as simple as possible for you.

If indeed for CEPA compliance purposes CT. DEEP deems it necessary to schedule this gathering as a formal Scoping meeting feel free to do so. We just don’t feel it requires that level of formality.

We just want you know that we want to have a presentation about the burn projects at which your staff can answer our questions.

Friends of Pachaug Forest Inc. is a volunteer organization that has assisted the Forest in on-site work projects. Please let us know if there are any ways our volunteers can assist in implementation of this project such as helping direct traffic, photo documentation, providing hydration stations, etc.





**Staff response to the above comment:**

In response to this request, a public informational meeting was held on February 11, 2019 at 6:30 pm at the Pachaug Town Hall. Griswold and Voluntown selectpersons were given notice of the meeting and asked to post the notice on their websites. The meeting announcement was posted on DEEP website. The Friends of Pachaug circulated the meeting notice to their members. At the meeting, it was announced that the Public comment period was extended to Feburary 19, 2019. DEEP staff answered all questions from the public and read the below answers as part of the scoping requirements.

**A sponsoring agency shall provide the following at a public scoping meeting:**

1. A description of the proposed action;

* DEEP Forestry has proposed a series of prescribed burns on Pachaug State Forest carried out by DEEP personnel.

1. a description of the purpose and need of the proposed action;

* The purpose of the prescribed burns is to reduce the wildfire risk in areas affected by gypsy moth defoliation and oak mortality, improve public and firefighter safety through hazard tree removal, benefit oak and pine regeneration, and increase young forest habitat.

1. a list of the criteria for a site for the proposed action;
   * extent of gypsy moth mortality
   * forest fuel availability
   * understory plant composition (huckleberry)
   * public accessibility (blue trail)
   * number of hazard trees per acre, per road mile
2. a list of potential sites for the proposed action;
   * Prescribed fire is a forest management tool which has the potential to be used for resource benefit anywhere within the State Forest
3. the resources of any proposed site for the proposed action;
   * upland hardwood forest – previously oak dominated
   * moist red maple dominated swales with sweet pepperbush understory
   * minor white pine pole component
4. the environmental limitations of such sites;
   * soils – site index
   * excessively dry
   * shallow to bedrock
   * physical site limitations
5. potential alternatives to the proposed action;
   * mastication (cost per acre, disturbance)
   * chainsaw felling/lopping (cost per acre, safety)
   * herbicide application (fern, sweet pepperbush, stilt grass, cultural barrier)

(H) any information the sponsoring agency deems necessary – presented at the meeting

**Conclusion:**

After examining potential environmental impacts and reviewing the communications received from the Friends of Pachaug Forest, DEEP Forestry Staff recommends to the Director of the Division of Forestry that an Environmental Impact Evaluation (EIE) is not warranted.