**From:** Stanwood, Sabrina
**To:** DNCR: Nash Stream Plan
**Subject:** FW: Revised Draft of Nash Stream Forest Management Plan Sept 2017
**Date:** Friday, September 22, 2017 11:39:23 AM

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-----Original Message-----
From: Zboray, Andrew
Sent: Friday, September 22, 2017 11:15 AM
To: Stanwood, Sabrina; Machinist, Margaret; Gamache, Christopher; Magee, John; Timmins, Dianne; BoisvertOLD, TraceyOLD; Feighner, Edna; Oehler, James; Savage, Clinton; Staats, William; Stevens, Mark; Caron, Todd; Bowman, Peter; Accardi, John; 'Wigler, Gail H -FS'; Guinn, William
Cc: Simpkins, Brad
Subject: RE: Revised Draft of Nash Stream Forest Management Plan Sept 2017

Hi Sabrina,

The recreation chapter looks exceptional with revisions. I only found one thing on page 148, 11.2, Hiking- 1st sentence: "Hiking opportunities in the Nash Stream Forest include designated trails, challenging walks on multiple-use woods roads."

Consider:

"Hiking opportunities in the Nash Stream Forest include designated trails and challenging walks on multiple-use woods roads."
OR more representative

"Hiking opportunities in the Nash Stream Forest include designated trails, challenging walks on multiple-use woods roads, and off trail exploration (or some other word better than bushwhacking)."

Andrew D. Zboray- Assistant Regional Supervisor

NH State Parks- Great North Woods Management Area

c/o Moose Brook State Park

30 Jimtown Rd. Gorham, NH 03581

603-491-1327

Andrew.Zboray@dred.nh.gov

www.nhstateparks.org

## Stanwood, Sabrina

**From:** Stanwood, Sabrina
**Sent:** Friday, October 6, 2017 7:33 AM
**To:** DNCR: Nash Stream Plan
**Subject:** FW: Revised Draft of Nash Stream Forest Management Plan Sept 2017

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**From:** Magee, John
**Sent:** Friday, October 6, 2017 7:15 AM
**To:** Stanwood, Sabrina; Machinist, Margaret; Gamache, Christopher; Timmins, Dianne; BoisvertOLD, TraceyOLD; Feighner, Edna; Oehler, James; Savage, Clinton; Staats, William; Stevens, Mark; Zboray, Andrew; Caron, Todd; Bowman, Peter; Accardi, John; 'Wigler, Gail H -FS'; Guinn, William
**Cc:** Simpkins, Brad; Magee, John
**Subject:** Re: Revised Draft of Nash Stream Forest Management Plan Sept 2017

I have a few minor suggestions for revisions to the Fisheries Chapter.

On page 82, change "Currently, 3000 Brook Trout yearlings are stocked annually into Nash Stream. " to "Currently, 1,500 Brook Trout yearlings are stocked annually into Nash Stream."

On page 87, change "Fish surveys have been conducted in Nash Stream in 2005, 2006, 2007, 2009, 2013 and 2014, and in the tributaries in 2005-2014. " to "Fish surveys have been conducted in Nash Stream and the tributaries in multiple years between 2005 and 2017."

Thank you,

John

John Magee
M.S., Certified Fisheries Professional
Fish Habitat Biologist
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301
p 603-271-2744
f 603-271-5829

---

**From:** Stanwood, Sabrina
**Sent:** Friday, September 22, 2017 9:23 AM
**To:** Machinist, Margaret; Gamache, Christopher; Magee, John; Timmins, Dianne; BoisvertOLD, TraceyOLD; Feighner, Edna; Oehler, James; Savage, Clinton; Staats, William; Stevens, Mark; Zboray, Andrew; Caron, Todd; Bowman, Peter; Accardi, John; 'Wigler, Gail H -FS'; Guinn, William
**Cc:** Simpkins, Brad
**Subject:** Revised Draft of Nash Stream Forest Management Plan Sept 2017

Dear Nash Stream Tech Team;

The revised draft of the Nash Stream Forest Management Plan has been released for public comment. The public comment period ends close of business on **Monday, Oct. 23, 2017.**

The document is in pdf format and is large (15MB). Go to the following website and scroll down: http://www.nhdfl.org/new-hampshire-state-lands/state-owned-reservations/NashStream.aspx Click on **September 2017 Nash Stream Revised Draft Forest Management Plan** to download the document.

It would be helpful if you could review the entire document (or just your chapter(s)) and send us any feedback.
Thank you,
Sabrina

Below is the press release for your information.

Sabrina Stanwood
Administrator, Natural Heritage Bureau (NHB)
**Division of Forests & Lands**
**Department of Natural and Cultural Resources (DNCR)**
172 Pembroke Rd. Concord, NH 03301-5767
(office) 603-271-2217 x303 (fax) 603-271-6488
***Please note new email address*** **Sabrina.stanwood@nh.gov**

The New Hampshire Division of Forests and Lands is seeking public input on the second revision of the draft Nash Stream Forest Management Plan. The 30 day comment period will begin Friday, September 22, 2017. Written comments will be accepted until close of business on Monday, October 23, 2017 and can be sent via email to nashstreamplan@nh.gov, or mailed to:

> Director Brad Simpkins,
> Attention: Nash Stream Plan
> NH Division of Forests and Lands
> 172 Pembroke Rd
> Concord, NH 03301

A copy of the revised draft plan, as well as well as a response document addressing the comments received after the first public comment period, can be viewed by visiting www.nhdfl.org and clicking on the "Revised Draft Nash Stream Forest Management Plan" item under News and Information.

The New Hampshire Division of Forests and Lands is part of the Department of Natural and Cultural Resources. Its mission is to protect and promote the values provided by trees, forests and natural communities. For more information about the Division of Forests and Lands visit *www.nhdfl.org* or call 603-271-2214.

| | |
|---|---|
| **From:** | Stanwood, Sabrina |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | FW: Revised Draft of Nash Stream Forest Management Plan Sept 2017 |
| **Date:** | Friday, October 6, 2017 8:06:34 AM |

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**From:** Staats, William
**Sent:** Friday, October 6, 2017 8:06 AM
**To:** Magee, John; Stanwood, Sabrina; Machinist, Margaret; Gamache, Christopher; Timmins, Dianne; BoisvertOLD, TraceyOLD; Feighner, Edna; Oehler, James; Savage, Clinton; Stevens, Mark; Zboray, Andrew; Caron, Todd; Bowman, Peter; Accardi, John; 'Wigler, Gail H -FS'; Guinn, William
**Cc:** Simpkins, Brad
**Subject:** RE: Revised Draft of Nash Stream Forest Management Plan Sept 2017

Pg 56; Under 6.3 : add this sentence: Each fall wildlife biologists conduct a survey of mast ( nut) production in selected beech stands on Nash Stream Forest. Page 73: under objective 4-eliminate the word "Likewise"-just start the sentence with Cavity-sounds better to me.

---

**From:** Magee, John
**Sent:** Friday, October 6, 2017 7:15 AM
**To:** Stanwood, Sabrina; Machinist, Margaret; Gamache, Christopher; Timmins, Dianne; BoisvertOLD, TraceyOLD; Feighner, Edna; Oehler, James; Savage, Clinton; Staats, William; Stevens, Mark; Zboray, Andrew; Caron, Todd; Bowman, Peter; Accardi, John; 'Wigler, Gail H -FS'; Guinn, William
**Cc:** Simpkins, Brad; Magee, John
**Subject:** Re: Revised Draft of Nash Stream Forest Management Plan Sept 2017

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John Magee
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New Hampshire Fish and Game Department
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p 603-271-2744
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**Cc:** Simpkins, Brad
**Subject:** Revised Draft of Nash Stream Forest Management Plan Sept 2017

Dear Nash Stream Tech Team;

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down: http://www.nhdfl.org/new-hampshire-state-lands/state-owned-reservations/NashStream.aspx Click on **September 2017 Nash Stream Revised Draft Forest Management Plan** to download the document.
It would be helpful if you could review the entire document (or just your chapter(s)) and send us any feedback.
Thank you,
Sabrina
Below is the press release for your information.

Sabrina Stanwood
Administrator, Natural Heritage Bureau (NHB)
**Division of Forests & Lands**
**Department of Natural and Cultural Resources (DNCR)**
172 Pembroke Rd. Concord, NH 03301-5767
(office) 603-271-2217 x303 (fax) 603-271-6488
***Please note new email address* Sabrina.stanwood@nh.gov**

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Director Brad Simpkins,
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NH Division of Forests and Lands
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| | |
|---|---|
| **From:** | Jamie Sayen |
| **To:** | DNCR: Nash Stream Plan |
| **Cc:** | David Govatski |
| **Subject:** | Comments on September Re-Revision Draft |
| **Date:** | Monday, October 16, 2017 11:25:23 AM |
| **Attachments:** | Sayen - Comments NSF.doc<br>ATT00001.htm<br>Millsfield 2015.pdf<br>ATT00002.htm |

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Dear Brad,

Attached are my comments on the September Draft Re-Revision of the 1995 Nash Stream Forest Management Plan. I request that you send me all public comments submitted on the September Draft Re-Revision.

While I am pleased that this Draft begins to address Climate Change, the treatment in the September Draft is unacceptable. Failure to coordinate desired management with the grim realities of climate change (and the discouraging turn in climate change politics since January) is unacceptable.

I think it is time for DFL to sit down with informed citizens and independent climate change experts to address climate change and other serious problems with the Draft and the process that has now produced two unacceptable revisions of a once model plan. Inadequate public involvement in the three or four year process is a major part of the problem. Public confidence in DFL's management of NSF cannot be restored by this Draft nor by the process that devised it. An open, citizen-based, public process might also assist the DFL in securing adequate funding from the NH Legislature for inventory, monitoring, safety enforcement, and salaries for NSF managers.

I'm sure we all agree the 1995 Plan requires updating to reflect important changes in NSF and the entire region after nearly a quarter of a century. The paper mills that dominated the economy are gone, and the anthropogenic climate change crisis has intensified. The greatest economic value of the NSF today is in carbon sequestration and habitat protection for climate-stressed species, not in producing commodity wood chips for inefficient 75 MW biomass boilers. In time, as the forests mature, there will be ample high quality sawlogs, but the data provided in the Re-Revision confirms that we are still several decades away from this (unless we cut the small cohort of larger sawlogs prematurely).

We also need to re-capture its vision and spirit of that Plan that are missing from both Revisions. And, of course, we need to implement long overdue directives that for unexplained reasons have never been implemented. The failure to honor said directives for over two decades has seriously undermined public faith in the state management of NSF.

I do not enjoy criticizing the work of others, and I am eager to participate in a transparent, citizen-driven process to improve upon the great work of the 1990 Steering Committee. I hope my criticism is received as stern professional criticism of the product and not as an *ad hominem* attack on any individuals. However, until informed citizens, who are committed to the best interests of the entire Nash Stream Forest ecosystem, and qualified climate scientists, familiar with northern New England forests and the threats posed by climate change, are properly engaged in a transparent revision process, I fear we are in for further rounds of re-revision, or, worse, the imposition of an unacceptable revision of a model forest management

plan.

In addition, I am sure you are aware of the growing anger in Coos County regarding the liquidation forestry that is occurring on Yale Endowment lands, the Balsams, and elsewhere. As long as unregulated forestry continues, and as long as the public and rate payers are forced to subsidize inefficient biomass plants such as Burgess, the unrestrained burning of our young, over-cut forests will continue at an alarming rate. This is an ecological and climatological catastrophe. We need leadership from DFL, the state conservation community, and informed citizens to save our forests. As a reminder of the ongoing disaster I am attaching a satellite photo of "green certified" Yale Endowment's forest liquidation in the Millsfield Pond area. This is not an isolated "bad apple". By failing to act to stop this egregious liquidation of our forests, the State is, and will continue to be, viewed as condoning this destruction that additionally releases huge quantities of carbon.

I am always eager to speak and work with DFL and others to achieve the best Management Plan for the Nash Stream Forest, and to protect our gorgeous, but unprotected and abused, forests.

Sincerely,
Jamie Sayen

JAMIE SAYEN
111 BORDEAU ROAD
N. STRATFORD, NH 03590
603 636-2952
jrcs.triton@gmail.com

# COMMENTS ON THE SEPTEMBER 2017 DRAFT REVISION OF THE 1995 NASH STREAM FOREST MANAGEMENT PLAN

*Submitted by Jamie Sayen, October, 2017*

*The 1995 Nash Stream Forest Management Plan remains the governing document for management of the Nash Stream Forest and the governing document for the entire revision process.*

## ILLEGITIMATE REVISION & RE-REVISION PROCESS

The September 2017 Draft Revision of the 1995 Nash Stream Forest Management Plan makes several concessions to public comments on last winter's draft. This new Draft, however, fails several tests of acceptability. Before addressing the new Draft's failures, it is necessary to address the continued failure of the revision process.

The 1995 Plan was explicit in its directive for the revision process: "The Management Vision is considered a timeless document but nonetheless a dynamic one, subject to change should the management direction it provides be considered inappropriate…. The process of changing either the Vision or the Management Plan would be as involved as that which created them. It is anticipated that public comments and/or an advisory committee would be required to consider new information, including changing conditions and trends. *Monitoring should provide the necessary means to help identify and document the need for change in management practices.*" (1995 Plan, p. 135, hereafter: 1995: 135) (emphasis added) **This statement has been deleted from both 2017 Drafts.** Both 2017 Drafts acknowledge that the Monitoring necessary to identify and document the need for change has not been done and likely will never be properly conducted due to failure/refusal of the NH Legislature to fund at adequate levels the ongoing monitoring and inventory work directives of the 1995 Plan. The public must respond to this Catch-22 situation with the message: "No Monitoring Means No Management for Timber or Game Species."

• The 1990 Steering Committee was composed citizens holding a variety of viewpoints who labored intensively for a year to develop a model management plan for the State's "Crown Jewel." The Steering Committee received generally excellent technical support from the Tech Team, composed of foresters from DFL, biologists from NH F&G, and other agency employees with important expertise. The Tech Team did not

develop the vision, goals, and objectives of the 1990 Plan; that role was fulfilled by the citizens' Steering Committee.

• There was one occasion during 1990 when the Tech Team attempted to usurp the writing role. That fall it proposed replacing the nearly completed Steering Committee Vision Statement with a vision that was designed to eliminate or subvert most of the provisions that protected biodiversity, such as core natural areas and control areas. The Tech Team wanted to be able to conduct clearcuts in wilderness areas for "wildlife management" (to artificially elevate populations of common game species, such as white-tailed deer). The Steering Committee was outraged and refused to accept the "revisions."[1] The resulting 1990 Vision Statement and Management Plan were enlightened documents that had been developed in a thoroughly transparent manner after lengthy debate and discussion. It was, and remains, something to be proud of. Note: because it was not formally adopted and released until 1995, I shall refer to the "1995 Plan."

• The first item in the 1995 Management Vision read: "Protect the natural qualities and integrity of the land, natural communities, native species, and ecological processes. *Use and build upon, rather than work in opposition to, ecological principles and natural tendencies. Manage the land with as little interference as possible* with natural ecological functions." (Emphasis added) (1995:61)

• The DFL and NHF&G failed to establish hardwood and softwood control areas in the ensuing two decades, and largely ignored the monitoring and inventory data gathering directives of the 1995 Plan for two decades. The public can be excused for concluding that the Tech Team's failed 1990 effort to weaken the plan was subsequently carried out by ignoring the directives most critical for assuring the 1995 Plan's major goal: "The Management of Nash Stream Forest will be a model of environmentally sound public land stewardship." (1995:61)

• There has long been a tradition in the United States, enshrined in the US Constitution, that there will be civilian oversight over the military. This same principal was at work in the development of the 1990 Plan: Citizens are sovereign, and public servants serve the public. The 2017 Nash Stream Draft Revision Process turns that principle on its head.

• It was disturbing to read in "Appendix I: Department's Response to Comments Received Regarding the First Draft of the Nash Stream Management Plan" (page 227) the following statement: "The recent process was very much in-line with the original process," followed by the claim that the Nash Stream Citizens' Committee played the role of the 1990 Steering Committee. This is inaccurate because the NSCC did not write the Draft Revisions; it did not meet month after month as a committee, or month after month as sub-committees. At intervals, it offered comments on the Tech Team's re-writes of the 1990 Plan.

[1] Jamie Sayen, "Responsible Nash Stream Plan Threatened by NH Fish & Game 'Wildlife Management'", *Glacial Erratic*, Winter 1990, vol. 2, no. 4, p. 19.

• Unacceptable policy comes from illegitimate process. The failures of both 2017 Drafts can be directly traced to the lack of accountability to a diverse, citizen revision committee. It is inconceivable that the current Climate Change crisis would have been "overlooked". It is inconceivable that such a committee would have recklessly deleted so many essential statements from the 1995 Plan. It is inconceivable that a citizen revision committee would have proposed radical changes that weaken the 1995 Plan's central goal *without a shred of monitoring data to justify such changes.* It is shocking that the 2017 Drafts ignored (or cherry-picked) important recent scientific research on older forests, climate change, bioenergy, and carbon sequestration.

• The principle of civilian/citizen oversight is no mere quibble. At a time when our democratic institutions are being compromised by powerful elites at home and abroad (Russian meddling in the presidential election), it is essential that we defend them here on a local, state, regional, as well as a federal level. At the conclusion of these comments, I shall outline a legitimate, relatively quick, citizens' revision process ***(see pages 21-23).***

## CLIMATE CHANGE

Climate change requires a change in our thinking, especially in the management of public lands. Conventional resource commodity extraction policies must be discarded in favor of management philosophies and practices that minimize carbon emissions, maximize carbon sequestration, and protect the evolutionary viability of climate-stressed native species.

The good news is that the September 2017 Draft begins to address climate change after the public outcry against the earlier draft that had somehow "overlooked" the greatest climate and ecological crisis of our time. The bad news is that, despite some important data and a few important ideas, the Draft's treatment is largely a botched job. The tone is set in the "Response to Public Comments" section when, in what could be interpreted as a nod to climate change deniers, the DFL informs us: "One of the challenges regarding climate change is the science regarding the best way to deal with it does not always agree. However, there are some generalities on dealing with climate change that are more broadly accepted." (p. 227) *If the Drafters had delved more conscientiously into the science, they would have found some pretty persuasive material about ways to minimize carbon release and optimize carbon sequestration.* That's a bit more than "some generalities."

**Treatment of Climate Change in the September 2017 Draft**: The "Response" goes on to say: "…the impacts of climate change are broad and far-reaching, and can affect all other chapters of the plan, including forest management, infrastructure, insect and disease problems, etc. *Therefore it was decided that a stand-alone chapter pertaining to this specific topic would be the most suitable way of discussing the issue.*" (p. 227)

• Unfortunately, the stand-alone chapter appears near the end of the Draft, as if it were an afterthought, rather than the context within which the entire revision process should be approached. The Climate Change chapter should have come at the beginning of the Draft —right before or right after Section 2: "Management Vision." And each

subsequent chapter should have addressed pertinent climate change issues in depth. There is very little of these sorts of discussions, and the Draft endorses several practices that exacerbate carbon emissions, including: wildlife and timber management tools such as clearcuts and managing for common game species; and claims that "some" believe biomass energy generation is "carbon neutral." If climate change had been discussed in each section, obvious conflicts between conventional early successional forestry and wildlife management would have had to be squared with climate science's preference for maturing and old growth forests that optimize carbon sequestration.

• The most serious weakness of the Draft's treatment of climate change is its failure to draw upon important scientific research that is easily downloadable from the interweb. This causes the authors to rely on a theoretical model advanced by Bormann and Likens from 1979 that suggested that, after about 200 years, biomass accumulation either stabilizes or declines. Keeton, Whitman, et al. (p. 499) wrote: "Our results support the hypothesis that biomass has the potential to increase very late into stand development, showing only slight declines as dominant trees pass 300 years of age, and continued additions to 400 years and beyond. Our data showed no evidence of peaks in early old-growth (e.g., approximately 200 years of age), declines subsequently (i.e., a "transition" phase), or steady-state dynamics as predicted by Bormann and Likens (1979). Correlations between total aboveground biomass and dominant tree age were related not just to increases in the standing dead tree component but also to substantial biomass accrual in live trees."[2] **And yet, the Re-Revision calls for few, if any stands in the timber management zone that will grow older than 120-140 years.** This is a clear case of economics trumping ecology, even though the operative management plan in the NSF is to manage for ecological integrity.

• The September Draft does quote another paper co-authored by William Keeton, PhD and professor at University of Vermont, on page 142: "The practices used at Nash Stream to extend the period between harvests and retain biological legacies can both enhance the amount of carbon stored in forests (Nunery and Keeton 2010 [p. 1372])…"[3] The Drafters are correct, as for as they go. The 1995 Management Plan directed DFL to manage for long rotations and to retain biological legacies. However, Nunery and Keeton (2010) on page 1374 in the penultimate paragraph of their paper wrote: "We showed that even with consideration of C sequestered in harvested wood products, unmanaged northern hardwood forests will sequester 39 to 118% more C than any of the active management options evaluated. *This finding suggests that reserve-based approaches will have significant C storage value*" (emphasis added). DFL and NHF&G have ignored the directive to establish Control Areas for 22 years. A broadly representative citizens committee would hardly have failed to note the role that reserves and controls play in sequestering carbon, especially in a landscape (Coos County) where Yale Endowment,

[2] William S. Keeton, Andrew A. Whitman, Gregory C. McGee, and Christine L. Goodale, "Late Successional Biomass Development in Northern Hardwood-Conifer Forests of the Northeastern United States," *Forest Science*, 57(6) 2011, 489-505.

[3] Jared S. Nunery and William S. Keeton, "Forest Carbon Storage in the northeastern United States: Harvesting frequencies, post-harvest retention, and wood products," in *Forest Ecology and Management* (2010; 1363-1375).

the owners of the Balsams's Forests, and many other unregulated timber contractors are turning our forests brown with liquidation clearcutting and whole-tree harvesting.

**Analysis of Section 10: Climate Change in September 2017 Draft (pages 137-145):**

• **P. 137-138**: Good data on impacts of climate change on northern NH.

• **P. 138:** "It is likely that our species-based definitions of natural communities may change as individual plants react differently to increases in temperature and changes in the hydrological regimes." This is an important point. It raises serious questions about current classification systems based on natural communities and ecological reserve design strategies that seek to protect "representative examples of natural communities." What happens to those "representatives" when their individual species move in different directions at different rates out of the small, protected areas?

• **P. 139:** Re: Climate-stressed species migrations and unfragmented refugia: Good points that sugar maple migrations may be limited by access to "good quality soils," and that species with limited mobility may "experience accelerated declines or disappear locally…" The odds of climate-stressed species surviving are much greater in unfragmented landscapes that are so rare in the former industrial forests of Coos County. Millar et al. states: "Climate variability, both naturally-caused and anthropogenic, as well as modern land-use practices and stressors, create novel environmental conditions never before experienced by ecosystems. Under such conditions, historical ecology suggests that we manage for species persistence within large eco-regions. Such a goal relaxes expectations that current species ranges will remain constant, or that population abundances, distribution, species compositions and dominances should remain stable."

Millar emphasizes the importance of connected (unfragmented) landscapes: "The capacity to move (migrate) in response to changing climates has been key to adaptation and long-term survival of plants and animals in historical ecosystems. Plants migrate (shift ranges) by dying in unfavorable sites and colonizing favorable sites, including internal species' margins. The capacity to do this is aided by managing for connected landscapes, that is, landscapes that contain continuous habitat with few physical or biotic impediments to migration, and through which species can move readily…. Desired goals include reducing fragmentation and planning at large landscape scales to maximize habitat connectivity."[4] *The NSF, along with the White Mountain National Forest, can play a vital role in anchoring such a regional approach.*

• **P. 140:** Invasives are expanding ranges as the climate warms. Since they exploit roads and openings in forests, NSF should be closing roads and eschewing creating openings for early successional and common game species.

• **P. 140:** The Re-Revision asserts: "Management activities in Nash Stream are already helping to address climate change." The authors cite uneven-aged management, longer rotations and the Plan's ecological focus. These directives (stemming from the

[4] Constance I. Millar, Nathan L. Stephenson, and Scott L. Stephens, "Climate change and forests of the future: Managing in the face of uncertainty," *Ecological Applications*, 17(8), 2007, pp. 2145-2151.

1995 Plan, and considerably undercut by both the Winter 2017 and September 2017 Draft revisions) do help minimize carbon emissions. A forest management plan designed to minimize carbon-emissions will avoid using even-aged management, whole-tree harvesting, and grapple skidders; it will aim for restoring ecologically mature and old growth stands. The September 2017 Draft could aggressively promote these policies, but instead, it plans to interpret the 1995 Plan's bias against even-aged management more liberally; it balks at 1500-acre softwood control areas; it plans to manage roughly half of NSF by eliminating age classes above 120-140 years even though the canopy trees in those stands can live 300-400 years, sequestering carbon all the time.

• **P. 141: Figure 16,** showing Net Primary Productivity & Ecosystem Productivity, dates to 2004 and appears to reflect Bormann and Likens' obsolete theoretical guesses that forest stands cease to add biomass and sequester carbon after about age 200. (Charts on pages 104 and 113 also appear to be following the Bormann and Likens theory.)

•**P. 141:** "Young forests typically sequester atmospheric carbon into biomass at a faster rate than older forests. Although older forests often sequester carbon at a slower rate, these forests can do a better job of storing significant amounts of carbon over long periods of time." The NSF remains a "young" forest. By the logic of this quote, Nash Stream Forests should be allowed to continue to sequester at faster rates, not logged over again while still quite young, thereby releasing considerable carbon into the atmosphere immediately. Resequestering that released carbon will take decades. Keeton et al. wrote an editorial in 2012 in which they noted that "the critical time frame for addressing climate change" is "the next 50 years." Then followed this statement: "When we also consider the amount of biogenic carbon remaining in the atmosphere as a result of historical global conversion of forests, prairie, peatlands, and wetlands, *it becomes clear that all sources of additional carbon emisssions should be evaluated based upon their near-term contribution to the atmosphere and their potential for re-sequestration by new biological growth* (emphasis added)."[5] In other words, we should avoid all carbon emissions we can over the next half century. Given that the NSF is still a very young forest, a half century of carbon sequestering is the enlightened response to this global crisis, and is most in keeping with the vision of the still-operative 1995 Plan.

• **P. 141:** "Overall, the total ecosystem stores more carbon the older it is in temperate forests." This is very important, and the remainder of the NSF Management Plan needs to aim to achieve optimal carbon sequestration. Maximum carbon sequestration is calculated by measuring carbon stored minus carbon released by a given stand. Since all harvesting operations, even Low Impact Forestry, release some carbon, unmanaged stands core natural areas and control areas sequester the most carbon. Where management occurs, Low Impact Forestry releases the least carbon, whereas intensive management (especially, whole tree harvesting for bioenergy using grapple skidders) releases the most carbon.

[5] John S. Gunn, David J. Ganz, and William S. Keeton, "Biogenic vs. Geologic Carbon Emissions and Forest Biomass Energy Production," *GCB Bioenergy, 2012(4), p. 239-242.*

• Given that the Nash Stream Forest remains a very young forest that Bormann and Likens predict will continue to accumulate carbon for at least another century and a half (while Keeton, Whitman, et al. predict it will continue to sequester optimal amounts of carbon for another three or more centuries), *What is the rush to cut the NSF now?* I fully understand the political influence of the timber industry on NH forest policy, but, as the 1995 NSF Management Plan's Vision decrees, ecological integrity is the first goal. Economic and political interests must adapt to ecological realities and needs, not the other way around.

• I have also been informed by the DFL that timber harvest revenue is needed to pay salaries of DFL managers of the NSF. I sympathize with the DFL managers who are being betrayed by the penny-wise, pound-foolish attitudes of the NH Legislature. Conducting ill-advised, premature, carbon-releasing logging operations to counter the failure of politics undermines the ecosystem integrity of the NSF, weakens our ability to sequester carbon, and encourages the Legislature to make further cuts to the budget of DFL, thereby forcing it to further intensify logging on state lands. A citizen revision committee could—and should—take a stand against irresponsible legislative behavior. The Tech Team (serving as the revision committee) cannot be expected to stand up to the folks who determine the budget of DFL.

• **P. 142:** Figure 17 shows total ecosystem carbon sequestration increasing rapidly in 100-200 year old forest stands. It should be replaced with a chart that reflects the findings of Keeton, Whitman et al. and show carbon sequestration rates for ages 200-400. Keeton, Whitman et al. (p. 490) note that carbon sequestration models still use Bormann and Likens' outdated model to calculate a stand's potential for carbon sequestration, and this may result in an underestimation of the potential carbon storing capacity of older stands.

Keeton, Whitman et al. (p. 502) write in their concluding discussion: "… our results suggest that there is a significant potential to increase the total carbon storage in the Northeast's northern hardwood hardwood-conifer forests. Young to mature secondary hardwood forests in the northeastern United States today have aboveground biomass (live and dead) levels of ~107 Mg/ha on average. Thus, assuming a maximum potential aboveground biomass range for old growth of approximately 250-450 Mg/ha, … our results suggest a potential to increase in situ forest carbon storage by a factor of 2.3-4.2, depending on site-specific variability. This would sequester an additional 72-172 Mg/ha of carbon." In short, young forests, have a large carbon sequestration potential (in addition to what they have stored in the past 30-50 years). If we log them now, a significant amount of carbon will be released immediately, and will delay the realization of that sequestration potential. Delaying logging another 50 years will assure bigger sawlogs and maximum sequestration during this critical period as we struggle to lower our carbon footprint now, while there might still be time to save the iconic species of northern New England: loons, sugar maple, moose, spruce, fir.

• **P. 142:** The Re-Revision claims: "Active management is a critical component in assisting forests to adapt to climate change." If this means active commercial harvesting

or salvage logging, we need to see the peer-reviewed documentation of the validity of this statement. If the statement refers only to non-commercial, low-impact activities where essential, it needs to say so and provide examples. As the statement stands, it reads as an unsubstantiated timber industry allegation, and does not belong in an exemplary NSF Management Plan.

• **P. 142:** On the same page, the Draft states: "For example, two-aged or uneven aged silvicultural approaches such as irregular shelterwood or group and patch selection methods that allocate adequate growing space for mid-tolerant species recruitment while also maintaining a large proportion of a given stand in mature forest conditions can maintain important elements of complexity and carbon in managed systems." First of all, there aren't any particularly "mature" stands in the timber management zone. Secondly, throughout the evolution of the post-glacial NSF, natural disturbance events have allocated adequate growing space for mid-tolerant species recruitment while also maintaining a large proportion of a given stand in mature forest conditions; otherwise, mid-tolerant species would have vanished from the landscape. Natural disturbance continues to act on both managed and unmanaged stands. The quoted passage proposes to accelerate and add to natural disturbance regimes, while releasing some of the carbon already stored, thereby adding to the carbon emissions problem we are trying to reverse.

• **P. 142-143:** "Resistance" to climate change is unrealistic because forests are adaptive and dynamic, not static or stable. Forest management (from timber operations to biodiversity preservation) should aim to facilitate accommodation and adaptation rather than attempting to resist change.[6] (Puettmann; Millar) Puettmann writes: "… managing forests as complex adaptive systems shifts the emphasis of silvicultural manipulation away from direct aspects of productivity and toward resilience and the facilitation of the ecosystems' ability to adapt, i.e., respond to a wide variety of changes in conditions." He recommends forest management plans should be evaluated for "adaptability and resilience."

• **P. 143:** "Assisted migration" is expensive, not possible for most species, and, given the inadequate funding for essential monitoring and inventorying, a far lower priority. Instead, we should focus on minimizing fragmentation in the badly-fragmented forests of Coos County. We should direct scarce funds to monitoring, not assisted migration.

• **P. 144:** DFL "will continue to use longer harvest intervals, which can be implemented in a way to have adaptive benefits such as maintaining refugia for existing populations of vulnerable communities or populations." Ecologically vulnerable species such as Bicknell's Thrush? Or economically "vulnerable" species such as common game species? The Draft needs to be clear it refers to the former, not the latter, or the statement should be deleted.

[6] Constance I. Millar, Nathan L. Stephenson, and Scott L. Stephens, "Climate change and forests of the future: Managing in the face of uncertainty," *Ecological Applications*, 17(8), 2007, pp. 2145-2151. Klaus J. Puettmann, "Silvicultural challenges and options in the context of global climate change: 'Simple' fixes and opportunities for new management approaches," *Journal of Forestry*, September 2011, pp. 321-331.

• **P. 144:** Re: the Northern Institute of Applied Climate Science to conduct a vulnerability assessment on NSF: I checked its website, https://www.nrs.fs.fed.us/niacs/ and it appeared to promote biomass/bioenergy as a climate strategy. As I shall document in a subsequent section, peer-reviewed research has thoroughly debunked this biomass industry myth. Biomass/bioenergy is a carbon source, not carbon neutral, or a low carbon alternative to fossil fuels. DFL should find an independent scientific service that does not promote bioenergy to conduct a vulnerability assessment.

• **P. 144: "Objective 4: Conserve areas for habitat expansion and/or connectivity."** Very very important. This is why the DFL/NHF&G failure to establish Control Areas is so disheartening. The Core Natural Areas are largely confined to higher elevations and steeper slopes. We desperately need unmanaged areas in the more productive lower elevations to serve as controls, connectivity, critical habitat, and for increased carbon sequestration capacity. Instead, we read in the Tech Team's response to public comments on page 229 that it does not plan to follow the directive to establish a 1500-acre softwood control area because past mis-management has severely reduced current softwood stands. Since softwoods supported several area sawmills in the late nineteenth century, it stands to reason that over time, softwood stands will increase in size *if given the chance* by the establishment of a 1500-acre softwood control area.

• **P. 144:** I could not agree more with the need to implement a "robust long-term monitoring program forest wide." The 1995 Plan called for such a plan, and yet we still haven't got it. Elsewhere in the response to public comments (p. 235), we are warned that "The department does not have the resources necessary to undertake regular monitoring of these control areas, and does not expect additional resources…" *Until adequate monitoring is in place, all management activities and high carbon footprint activities should be suspended. Otherwise, we'll continue to risk degrading ecosystem integrity. This violates the spirit and letter of the still operative 1995 Management Plan.*

**Concluding Comments on Climate Change:** The September Draft contains some good material, but it is deeply flawed and far from offering a comprehensive strategy.

• It fails to offer a plan to maximize carbon sequestration and minimize habitat fragmentation (and indeed, promotes activities that work counter to both).

• It does not address the problems associated with poorly studied and unstudied species and how to optimize their chances of survival in a rapidly changing climate.

• It does not address the potential (and current) impacts of climate change on the timing of pollination, reproduction, and migration events of various species.

• It fails to offer a **full accounting of carbon emissions from activities on NSF.**

• It fails to acknowledge that a vital role of public lands is to provide services that private land managers cannot or will not provide. This is especially critical at a time of changing climate. Instead, the September Draft continues to promote management for early succession that will release carbon, artificially elevate populations of common game species, and unnecessarily fragment a landscape that is being devastated by unregulated liquidation whole tree harvesting and other overcutting practices by the likes of Yale Endowment/Wagner Woodlands and the Balsams, and some local logging contractors.

The State should, at the very least, manage Nash Stream Forest as a climate change refuge whose principal economic contribution to the region is maximal carbon sequestration and minimal forest fragmentation.

**Recommendation: Establish a Nash Stream Climate Change Advisory Board.** Let's manage according to the best current scientific research. Let's involve independent scientists who are studying forests and climate change. The failure of DFL to even address climate change in its Winter 2017 Draft revision seriously undermined its credibility on this most important topic. We don't have the luxury of further dithering.

# CRITIQUE OF SELECTED SECTIONS OF SEPTEMBER DRAFT RE-REVISION OF NSF MANAGEMENT PLAN

## CONTROL AREAS

The September 2017 Re-Revision restores most of the language on Control Areas in the 1995 Plan (pages 41-42 in the September Draft and pages 78-80 in the 1995 Plan). No explanation is offered as to why the Winter 2017 Draft deleted these sections and said virtually nothing on Controls. Even more troubling, no explanation is offered for why the DFL and NHF&G "overlooked" the 1995 Plan's directive.

The September Re-Revision offers scant hope that ecologically effective controls will be established during the lifetime of the next NSF Management Plan. Here are several reasons for alarm:

• The 1995 Directive for Control Area design reflected the best available scientific knowledge of the day. However, the threats posed by climate change were less well understood than they are today. We were not talking about the potential for carbon sequestration in a large, publicly-owned watershed. We were not talking about the need for large, unfragmented, connected areas to allow climate-stressed species to migrate to more favorable climates. And, we did not fully realize the dangers of basing preservation strategies on protecting examples of natural communities (although a landmark paper by Hunter, Webb, and Jacobson in 1988 did address that issue)[7].

• The 1995 Plan did call for the completion of an updated inventory of natural communities before establishing Control Areas. The authors of that Plan assumed the inventory would be conducted in a timely fashion, and that the Control Areas would be in place before significant timber harvesting of the severely overcut NSF became feasible. The Steering Committee never imagined that the Agencies entrusted with managing the NSF would ignore directives on both an updated inventory and the establishment of Control Areas for decades.

• The decision in 1990 to base our ecosystem protection strategies on natural communities reflected then-current cutting edge conservation policy. Climate-stressed species will migrate in different directions at different rates. Stressed natural communities

[7] Malcolm L. Hunter, Jr., George L. Jacobson, Jr., Thompson Webb, III, "Paleoecology and the Coarse-Filter Approach to Maintaining Biological Diversity," *Conservation Biology*, vol. 2, no. 4, December 1988.

will not migrate as units; rather they will disassemble and new communities will re-assemble (and later disassemble as the stresses continue to evolve). This means that a conservation strategy based on natural communities will not necessarily succeed in preserving those stressed communities. If we designate small "representative" protected zones for these transitioning natural communities, what happens when the species that compose that community migrate outside the small reserve?

• On page 229 of the Re-Revision, we read: "Once that [inventory of natural communities] is completed, we need to ensure we designate control areas that are representative of the managed areas. The size and location of these control areas will vary by natural community type, etc." This strongly suggests that if we ever get control areas, they won't be of significant size, but rather, postage stamps that may well be isolated, unbuffered, and, therefore, ineffective in contributing to the preservation of biodiversity, and assisting climate-stressed migrations through an un-fragmented landscape. Bad policy and bad science.

• The belated attention of the Re-Revision to Control Areas will be further delayed as we await funding that nearly everyone understands is unlikely to materialize for the natural communities inventory. So we have a double whammy of the wrong approach which will be delayed and delayed because the Legislature refuses to fund monitoring and inventory. Catch-22.

• **The Re-Revision appears to reject the 1995 Plan Directive for establishing a 1500-acre Softwood Control Area.** On page 41 in the September 2017 Draft we read: "A review of the ecological land groups in Chapter 8 indicates that *it will most likely not be possible to meet the control size recommended for softwoods in the area suitable for timber management as this type makes up less than 1% of the area*. However designating a control area for hardwoods of the recommended size should be a relatively simple task and will be the first priority as these type comprises [sic] the majority of the area suitable for timber management." (Emphasis added)

The Re-Revisers seem to cite past mis-management of the NSF to justify evading the 1995 Control Area directive. The authors of the 1995 Plan fully understood that softwoods had been hammered and that current stands were not representative of the forests encountered by the first woodcutters in the nineteenth century. The pre-settlement Nash Stream watershed possessed ample stores of large spruce (and fir) to sustain two large, late nineteenth century sawmills in Groveton: Soule and Weston. If a 1500-acre softwood control area were set up, over time, would not the forest again recover many of its softwood features? This would be a great (passive) ecological restoration project, as well as follow the spirit of the still operative 1995 Plan.

Now, it may be that due to anthropogenic climate change, conditions will not permit the recovery of the pre-settlement softwood stocking. It remains imperative that *at a minimum* a single, large 1500-acre Softwood Control Area be established where softwoods formerly flourished. This optimizes the chance for softwood recovery, sequesters carbon, and optimizes chances for less mobile, climate-stressed species to

move through an unfragmented landscape in search of more favorable climatic conditions.

There is another troubling comment in the DFL's Response to Public Comments (p. 229): "The current team has researched past designation of control areas, and while a GIS shapefile of control areas was found, there was not conclusive evidence on why, where or how they were designated." Why was the GIS shapefile "lost"? Why wasn't this plan, or a better design, for controls implemented decades ago?

## ECOLOGICAL RESOURCES SECTION 4:

**Goal: Maintain Current Levels of Natural Community and Plant Species Diversity (p. 43)**

• Current levels of biodiversity are a reflection of the current condition of the NSF. Until the Civil War, the NSF sustained species that flourished in all-aged stands, from early successional to old growth. Currently, with few trees older than 100 years, and most of the complex habitats found in a young, biologically impoverished forest, not the rich diversity afforded by complex, older habitat.

• As discussed above, natural communities will be shifting, so this goal is obsolete and naïve, given current ecological and climatological realities.

• Since one of the aims of Wildlife Management is to promote artificially elevated populations of common game species that earn revenue via the sale of hunting and trapping licenses, "current levels" requires from this practice have been discussed above. And for those worried that Coos County suffers from a deficit of early successional habitat, I suggest a walk in any recent unregulated logging operation. Or take a look at recent satellite photos of Yale Endowment land in Millsfield or Cambridge. **Coos County suffers an historic deficit of mature and old growth stands and an excess of early successional stands.**

## WILDLIFE MANAGEMENT

The 1995 Plan's goal for wildlife was "to sustain viable populations of all species occurring naturally in the Nash Stream Forest." (1995: 64) The 2017 Draft added: "with a particular emphasis on target species." (2017:70) The target species are a mix of rare, threatened, or endangered species such as Bicknell's thrush and Canada lynx, and common game species such as woodcock, ruffed grouse, and white-tailed deer.

Naturally-occurring species native to the region evolved in old growth, pre-settlement forests that were shaped by natural disturbance events and naturally-changing climate conditions. There were no foresters or wildlife managers to artificially elevate populations of species that are associated with early successional habitat, and yet those species survived, evolved, and thrived. Their population numbers may have been lower than in today's younger forests, but their continued survival was not in doubt. All-aged old growth is the optimal habitat for rare native species, from lynx to unstudied, poorly-understood mosses, lichens, fungi, and invertebrates. These species flourish in the complex vertical habitats and the deadwood, cavities, and coarse woody debris,

characteristic of old growth. Natural disturbance events provide gaps and sufficient early successional habitats to meet their needs. Keeton, Whitman et al. advise: "Because total gap area in late successional/old-growth northern hardwood sites can range from 5 to 10%, sampling methods that fail to capture fine-scaled spatial variability are prone to error in terms of estimating forest structure attributes." (p. 499) The NSF can help begin the process of restoring once common, but now exceedingly rare ecologically-mature and old growth forest stands.

• On page 63 of the September Re-revision, the authors state: "Primary targets meet all of the following criteria: … [bullet #5] Ecological conditions on Forest are such that required habitat to sustain species is feasible to attain and would not have a significant negative impact on other priority species."[1][SEP]Imposing human management that adds to natural disturbance is a form of managing <u>for</u> one type of species (common game species) by managing <u>against</u> other types of species (species that thrive in more mature and old growth forests; climate-stressed species that require unfragmented habitat). *If the September Re-Revision had conscientiously and comprehensively addressed the full range of potential climate change impacts on the NSF and environs, it would have likely concluded that the needs of climate-stressed species, especially those with short-range annual migration capabilities and poorly-studied, or unstudied species are more in need of appropriate management than common game species and species that rely on early successional habitat for some of their needs. Especially given the fact that natural disturbances will continue to provide early successional habitat.*

• **P. 73:** Refers to "Table 11" but it seems to mean "Table 10." Which is it?

• **P. 73:** Objective 3 states that land managers "will consider and implement management recommendations for primary and secondary species." On what monitoring data will these recommendations be based? There is, as the Re-Revision acknowledges, scant new data and prospects for procuring such data are dim indeed, given funding issues. Without proper data, any "wildlife management" will be far from scientific—or legitimate. This is especially urgent given the admission under Objective 4 (p. 73): "Wildlife biologists have come to recognize that data collected with standard forest resource inventory procedures are often deficient in within stand features that are important to wildlife. Dead and down woody material is used as feeding, denning, or hunting sites by small mammals, black bears, marten, weasels and woodpeckers. It also provides moist microhabitats for amphibians including blue-spotted salamander. Likewise, cavities and snags provide nesting and roosting sites for 15 birds and 18 mammals including black bear, American marten, and all target bat species. Understory and midstory cover are important habitat attributes to veery, Canada warbler, and black-throated blue warbler, among others. This objective is formulated to refine future inventories on NSF enabling managers to assess if sufficient within stand features are being provided." *Inadequate Monitoring Inventory Data; No intrusive Wildlife Management!*

• If DFL and NH F&G are concerned with lack of structural complexity, they should replace conventional wildlife management that aims to increase early successional

habitat with the "Structural Complexity Enhancement" approach.[8] Since there is excessive early successional habitat and an alarming paucity of mature and old growth habitat and structural complexity throughout Coos County, responsible public lands managers will wish to address a genuine need, and not promote a "desired economic condition" of a still very young forest.

• **P. 74:** Given the dramatic increase in non-consumptive "wildlife observation and photography" and declines in the popularity of consumptive hunting and trapping, and given that hunting and trapping can be pursued on private lands throughout Coos County, why not manage for non-consumptive uses. Most wildlife photographers don't need another photo of a deer in a clearcut. They want to see rare salamanders, shy birds, and lichens and mosses growing on rotting large logs and old trees.

## FOREST MANAGEMENT

The DFL yielded to the overwhelming sentiment of citizen comments in March, and restored the language of the original plan. However, on page 230 in its Response to Public Comments we read: "During the revision and comment period, we spoke with several of the authors of the original plan. Based upon those conversations, it was determined we may have been interpreting the language as more restrictive than was originally intended." Perhaps this means that DFL will only "use even-aged management for those occasional, yet infrequent, circumstances where uneven-aged management will notachieve (sic) the management objectives." (p. 231) However, given the DFL's desire for more early successional habitat and its desired future condition of a very young forest, coupled with its 20 year failure to take steps to protect ecosystem integrity via establishment of Controls and proper monitoring and inventory work, the public can be forgiven for viewing this intent to interpret the 1995 Plan's directives more liberally as another weakening of the 1995 Plan's goal of protecting the health of the forest.

• **Desired Future Condition of the NSF:** The September Re-Revision retains the dismal desired future condition chart from the Winter 2017 Draft (see p. 71), despite critical comments submitted in March 2017.

It is important to appreciate how radically different the NSF of 1988 and today is from the forests encountered by loggers nearly 200 years ago. Ecologist Craig Lorimer has estimated that 59 percent of the pre-European settlement forests of northeastern Maine were greater than 150 years of age, and 27 percent were more than 300 years old. Lorimer and Alan White also estimate that only about 2.5-4.5 percent of Maine's pre-settlement forest was covered by seedlings and saplings.[9] Their findings are consistent with the composition and structure of the pre-settlement forests throughout northern New

[8] See, for instance, Nichols C. Dove and William S. Keeton, "Structural Complexity Enhancement Increases Fungal Species Richness in Northern Hardwood Forests," *Fungal Ecology* 13(2015) 181-192.
[9] Craig G. Lorimer, "The Presettlement Forest and Natural Disturbance Cycle of Northeastern Maine," *Ecology*, vol. 58, 1977, p. 146. Craig G. Lorimer, Alan S. White, "Scale and frequency of natural disturbances in the Northeastern US: implications for early successional forest habitats and regional age distributions," *Forest Ecology and Management*, 2003, vol. 185, pp. 58-59.

England. The 2017 Draft's "Desired Condition" for the Nash Stream Forest is for 5 to 10% in "regeneration, (i.e., seedlings"), and roughly 25 percent to be seedlings and saplings with few trees older than 100-120 years. (2017:71)

**Nash Stream Forest conditions since 1988:** The 1988 forest inventory (see 1995:25-29) found that 87 percent of the trees in NSF were less than 50 years old and almost 90 percent of the trees were four inches in diameter or smaller. One-third of the NSF was seedling and sapling (less that 4.5 inches dbh), and three-quarters of these trees were shade intolerant and early successional species of significant ecological value, but limited economic value. Only 11 percent of the stocking was in the sawtimber class, and, the 1995 Plan noted, most was "generally just above the poletimber size class." Less than 10 percent of the hardwood sawlogs (about one percent of the Watershed's stocking) were "high grade." The remainder was medium to low grade. Fewer than four trees per acre were larger than 16 inches in diameter. (1995:26) Red spruce had been an important component of the lower elevation NSF in pre-settlement times. Table 6 (1995:36) showed there were zero acres of softwood type sawlogs in the NSF in 1988.

The NSF is nearly thirty years older today, but it is still a very young forest. Heavy cutting of its still impoverished sawlog class in the near future will retard the 1995 Plan's goal of restoring a much older forest, as well as diminish carbon sequestration capacity and fragment habitat needed by climate-stressed species to migrate to more suitable climate conditions.

• **P. 103:** And yet, on page 103 we are informed (relying more on speculation than data from monitoring and inventories): "Stands are generally regarded as ready for tending anywhere above 60%, therefore these stands are very well stocked and in need of additional silvicultural treatments to grow high quality timber. These treatments should be 'commercial treatments' that yield timber harvest revenue." Really? A forest that once was 60 percent greater than 150 years of age and now is mostly younger than 60 years of age, and whose current quadratic mean stand diameter is 7.5 inches, is ready for commercial harvests? How are we to meet the vision and directives of the 1995 Plan if we promote commercial harvests on the puny percentage of sawlogs currently growing? On page 104, we are informed that the diameters of sugar maple, yellow birch and beech are "just under 10 inches." *Why the urgency to cut these still very young stands? Allowing them to grow into large sawlogs vastly increases the revenue derived from cutting.*

•**P. 106:** Belatedly, we will begin a "continuous forest inventory" *if funding magically materializes.*

• **Pages 115-116:** "Clear cuts from 5 to 30 acres may be used less frequently to create larger blocks of young forest habitat for certain wildlife species based on recommendations from NH Fish and Game Department (NHFGD) biologists. Clear cuts may also be used to salvage timber from weather events or insect and disease outbreaks." Natural disturbance events that primarily kill single trees or very small groups of trees, created gaps in the pre-settlement canopy ranging from about 500 square feet (1/100$^{th}$ of an acre) to about 2000 square feet (1/25$^{th}$ acre). Less than one percent of the gaps caused

by ice or wind storms, insect infestations, or disease were greater than one acre.[10] Habitat diversity and complexity were greatly enhanced by large dead wood—standing dead trees, fallen trees, and coarse woody debris. Large deadwood comes from trees that have lived at least 170 years before dying. Today only 0.4 percent of the current forestland in the northeastern United States is covered by old growth. In this context, casual reference to clearcuts from 5-30 acres is radical and irresponsible, especially given the unregulated clearcutting going on throughout Coos County today.

**Salvage logging:** The literature warning against salvage logging is considerable.[11] Except in extreme cases (clearing roads, public safety, f.i.) salvage logging should not be part of a management plan.

• **P. 117:** In Figure 16, for Riparian Zone Management Widths, why have the widths for slopes greater than 10 percent been reduced by five feet from those recommended in the 1995 Plan (page 106)? For a plan committed to ecologically responsible management, it seems strange to shrink riparian zone management widths. Is there monitoring documentation that the 1995 widths are causing ecological harm?

• **P. 118: Green Certification:** Yale Endowment's lands boast of green certification, even though the landscape around Millsfield Pond has been turned brown following Yale/Wagner Woodlands' unconscionable forest liquidation. Littlefield and Keeton point out that coarse woody debris standards on certified stands are often ignored.[12] Certification costs a good deal of money, and then, as the Yale situation attests, does not guarantee responsible forestry. Better to use the money that would be

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[10] Marc Lapin, "Old Growth Forests: A Literature Review of Eastern North American Forests," Vermont Natural Resources Council, 2005, p. 5. http://vnrc.org/wp-content/uploads/2012/08/VNRC-Old-Growth-pub.pdf.

[11] A study of the 1938 Hurricane published in 1997 by researchers at the Harvard Forest in Petersham, Massachusetts, reported that even on the most damaged sites that had not undergone salvage logging, natural recovery processes soon stabilized hydrologic and nutrient cycles and that forest productivity soon recovered to pre-hurricane levels. While unsalvaged forests were releafing and sprouting new growth, salvage operators removed significant amounts of above ground biomass and exposed soils to light and precipitation. The salvage logging caused additional tree mortality, removed leaf area and biomass, and damaged the soil environment and understory, inhibiting the rapid recovery of unsalvaged stands. The salvage logging significantly reduced evapotranspiration, and caused a "loss of biotic control over ecosystem processes" such as regional hydrology.

Seedlings and early successional species flourished in salvaged sites, but not in unsalvaged sites. The Harvard Forest researchers (Cooper-Ellis et al.) concluded: "Thus the potential exists to convert the damaged area from a relatively intact system to a strongly modified site in which ecosystem control is reduced… This study suggests that retention of the residual biotic structures in the disturbed forest yields a stronger degree of control, with very different vegetational consequences." In other words, ecosystems that are left alone heal themselves much more rapidly than salvaged forests recover. Sarah Cooper-Ellis, David R. Foster, Gary Carlton, and Ann Lezberg, 1999, "Forest Response to Catastrophic Wind: Results from an Experimental Hurricane," *Ecology*, vol. 80, no. 8, p. 2693. David R. Foster, John D. Aber, Jerry M. Melillo, Richard D. Bowden, and Fakhri A. Bazzaz, 1997, "Forest Response to Disturbance and Anthropogenic Stress," *BioScience*, July/August 1997, vol. 47. no. 7, p. 440.

(Stephen Long's *Thirty-Eight: The Hurricane that Transformed New England*, 2016, Yale University Press, offers a popular treatment of problems with salvage logging.)

[12] Caitlin E. Littlefield and William S. Keeton, "Bioenergy Harvesting Impacts on Ecologically Important Stand Structure and Habitat Characteristics," *Ecological Applications* 22(7), 2012, p. 1906.

wasted on certification to conduct those inventories DFL can never seem to afford.

## BIOMASS/BIOENERGY

The authors of the Revision and Re-Revision seem to be unfamiliar with current peer reviewed literature that rebuts biomass industry myths that are presented uncritically in the Carbon Storage section (pp. 98-99.) Examples:

• "…some people consider biomass chips to be a "green" fuel or a carbon neutral fuel because the carbon produced is being recycled from the immediate environment." And who might these "some people" be? Industry lobbyists and journalists who are repeating those myths? Certainly not qualified scientists. Mika and Keeton (2014)[13] point out that biomass cutting and burning releases large amounts of carbon immediately (at precisely the time we need to be reducing carbon emissions) and only slowly recapture that carbon via regrowth. Depending on stand condition, the site, and the intensity of the bioenergy harvest, it may take from 40-150 years for that harvest to recover carbon neutrality. Therefore, bioenergy harvests remain carbon sources, not sinks, for many decades.

• Mika and Keeton (2014, p. 4) debunk claims of carbon neutrality, writing that most studies make "overly-simplistic assumptions about carbon-neutrality of bioenergy and do not incorporate indirect emissions in a full life-cycle analysis." If we add in the carbon lost from soils following bioenergy harvests, the problem is even more acute.

• Bioenergy plants, such as the 75 MW Burgess Plant about twenty miles east of the Nash Stream (and, hence, a logical destination for NSF woodchips) are highly inefficient. Mika and Keeton (2014, p. 6) write: "Directly combusting bioenergy for heating has a 20% loss (i.e., 80% efficiency), while electricity generation has a much lower efficiency of 20-40%..." Biomass plants, such as Burgess, actually emit more carbon per unit of energy produced than do coal plants![14]

• Mika and Keeton (2013)[15] demonstrate that the more intensive the harvest and the harvesting equipment, the greater the carbon emissions. They explicitly recommend that grapple skidders not be used for that reason.

• "Wood products that are long lasting and are not burned or that do not decompose can store carbon for a long time." (p. 98). This statement is true, but how long is a long time? Mika and Keeton (2014, p. 7) report that only 0.095 percent of a sawlogs are in use (and continue to sequester carbon) after 100 years.

## RECREATION & ATVS

**Public Comments on ATVs during Winter 2017 Draft Revision Process:** 162 public comments were submitted to DRED in February-March 2017. 88 supported ATV

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[13] Anna M. Mika and William S. Keeton, "Net Carbon Fluxes at Stand and Landscape Scales from Wood Bioenergy Harvests in the US Northeast," *GCB Bioenergy* (2014), p. 2.

[14] Mary S. Booth, PhD, *Trees, Trash, and Toxics: How Biomass Energy Has Become the New Coal,* Partnership for Policy Integrity, April, 2014. http://www.pfpi.net/wp-content/uploads/2014/04/PFPI-Biomass-is-the-New-Coal-April-2-2014.pdf. Duncan Brack, *Woody Biomass for Power and Heat: Impacts on the Global Climate*, Chatham House, UK, February 2017. https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/2017-02-23-woody-biomass-global-climate-brack-final2.pdf

[15] Anna M. Mika and William S. Keeton, "Factors Contributing to Carbon Fluxes from Bioenergy Harvests in the US Northeast: an Analysis Using Field Data," *GCB Bioenergy* 2013(5), p. 301.

expansion in the NSF; 66 opposed ATV expansion. None of the pro-ATV expansion commenters addressed any other aspect of the NSF Draft Revision. Nearly half (29 of 66) anti-ATV expansion commenters also offered comments on other elements of the Draft Revision. This suggests that supporters of ATV expansion are one-issue voters who do not examine the impacts of their issue on other important NSF management issues. 37 of the 82 written comments were form letters or close variants of form letters produced by ATV groups. Also, of the 62 pro-ATV expansion emails submitted, 53 were emailed to Larry Gomes of the OHRV Coalition. He forwarded them to DFL. Hats off to Larry for his grassroots organizing, but I found little evidence that pro-ATV expansion commenters had read the 1995 Plan or the 2017 Draft revision. I do not question the right of these commenters to their views, but I find it troubling that people comment on a plan with scant evidence of having read it and scant evidence that they understand how single issues fit into the overall ecology of managing a large state forest.

**Tech Team Response to Public Comments:** In response to the anti-ATV trail expansion commenters, the Tech Team wrote (p. 233-234): "It was felt if a proposal closely matched past practices in regards to ATV trail designation on the property, it should at least be considered for further evaluation. The department feels it should remain consistent to the best extent possible on trail designation, rather than have an arbitrary threshold on the number or amount of trails. Whether or not an ATV trail should be allowed should be based upon a known and documented set of reasons and criteria. Criteria such as the fine and coarse filter for OHRV trail location, consistency with the Vision for the property as outlined in the Plan, consistency with the terms of the Easement held by the U.S. Forest Service, consistency with the statutory requirements of our agency, consistency with the requirements of LCIP funding, and so on. It is no secret that ATV usage has expanded exponentially in Coos County since this plan was last revised. Since these are public lands, purchased with public funding, and recreation is one of the statutory reasons the department owns lands, it must give equal consideration to all users."

• Since the Tech Team admits ATV trail expansion "should be based upon a known and documented set of reasons and criteria", and it does not conduct adequate monitoring of the impacts of existing ATV use, ATV trail expansion cannot proceed.

On page 234 the Tech Team writes: "It should also be noted that although several comments suggested this [ATVs] was not intended as a use of the Forest, there were no ATV prohibitions enacted upon the purchase of the property. Neither the deed, federal Easement, LCIP funding requirements, nor state law expressly prohibits ATV usage on Nash Stream Forest." While technically true, this statement leaves out important facts that weaken its argument. The previous landowner had a "No ATVs" policy, and the state continued that policy while the Nash Stream Forest Citizens Advisory Steering Committee developed the 1990 management plan. The Steering Committee, composed of a broad array of interests, agreed without significant disputation, that ATVs were not compatible with the Vision of the Management Plan. *In other words, as soon as the state developed a policy for the management of NSF, it banned ATVs from NSF*. The statement quoted above seems to attempt to whitewash this.

**Issues Raised by the Public during the Winter Comment Period:** Anti-ATV trail expansion commenters raised a variety of issues that Coos County, the State, and NSF need to address. (I fully understand that NSF cannot resolve all these issues, but these issues should be part of all NSF ATV policy deliberations). I have organized these comments into six important categories that could serve as a starting point for the development of a coherent Coos County ATV (and Economic Revitalization) policy:

• **Ecology and Natural Beauty:** Commenters pointed out the impacts of ATVs on streams, water quality (sedimentation that degrades fish habitat and reproduction), soils (ATVs rip up soils, generate mud and dust). They impact natural areas, wildlife corridors, fragment ecosystems, and degrade ecological integrity. We need quiet places, and we need to protect the wild, natural beauty of the region. NSF and the State of NH need to acknowledge that ATVs are a climate change issue; they have a large carbon footprint.

• **Economics:** The economic impacts of ATVs are one of the pro-ATV expansion commenters' most frequent claims. It is true that our post-paper mill economy has so little going on that ATVs do benefit some elements of the economy. However, over-reliance on one economic sector is a recipe for disaster (as we found out when the region's paper mills shut down a decade ago). Given the growing conflict between ATVs and citizens who are fed up with the behavior of some ATVers, there is strong evidence that ATV expansion has gone too far, too fast, and that any further growth in ATV use in Coos County will have severe ecological impacts, adversely impact other important economic sectors (especially efforts to diversify low impact recreation opportunities, businesses, and services), and further exacerbate conflicts with residents and non-ATV visitors. Even strong proponents of ATV expansion are admitting that trails are becoming degraded, and that lax enforcement by the State is a headache for the ATV clubs. *We need a comprehensive economic study of the costs (to whom) and the benefits (to whom) of ATVs. What does the state pay in road maintenance, enforcement, safety? What are foregone economic development opportunities? Who bears the burden of the negative impacts?*

• **Low Impact Recreation:** Commenters called for the promotion of low-impact, low carbon footprint recreation, not a noisy, ecologically destructive, high carbon activity that drowns out peace and quiet in wild places. They would rather hear a babbling brook than a noisy ATV. Many hunters oppose ATVs during hunting season.

• **Social Problems with ATVs:** Anti-ATV trail expansion commenters listed a variety of problems: noise, smells, littering, vandalism to remote camps, violation of rules and codes, failure to remain on designated trails. They also point out that ATV trail expansion demands are insatiable.

Even the staunchest ATV supporters are complaining of the deterioration of trails, inability to get younger riders to help with trail maintenance, and the irresponsible State policy of promoting ATV expansion while refusing to appropriate adequate funds to pay for current (not to mention anticipated) enforcement needs. Just down the road from me,

Connolly Cabins, which caters to ATV riders, posted the following message on September 22: "This past weekend, September 22-24 a decision was made to temporarily close off our section of trail within the campground due to an influx of traffic, the speed of operation through, and lack of respect from OHRVs in the area for Camp RZR. Several large groups of side X sides showed absolutely no regard for the safety of our patrons staying within the campground, nor any respect when approached by us, the owners of the property. As a result, we felt the need to immediately stop all operation to through traffic. Erratic operation will not be tolerated." And this is from an ATV business.

• **Monitoring and Inadequate Funding:** We need data on NH and Coos ATV uses and impacts, especially ecological impacts and a full accounting of carbon emissions from ATV use. As ATV use and trails expand, and the State Legislature refuses to appropriate adequate safety and enforcement funds, these problems will only worsen. I attended an ATV meeting in Gorham in April in which a Legislator from Berlin who strongly supports ATV expansion, assured us that the State was not going to increase funding for monitoring. This is insanity.

• **Inadequate Planning:** The above problems with ATVs are a consequence of inadequate planning prior to the adoption of the official state policy of supporting and promoting ATV expansion in Coos County. (Evidence of the state's gung-ho ATV expansion policy can be seen in the fact that the Commissioner of DRED's position on the Nash Stream Citizens Committee has been awarded to the leading North Country ATV proponent. That seat could have been awarded to a climate change scientist.)

• Town roads were opened to ATVs with little discussion or public input. Children far too young to qualify for a drivers license can now cruise down heavily trafficked roads.

• The growing backlash against ATVs is directly attributable to the ongoing lack of planning. It is irresponsible that the State continue to promote ATV expansion and fail to address the growing polarization of our communities over the ATV issue.

• We need a master plan for all recreational trail users.

• We desperately need a coherent, evolving, low-carbon economic revitalization planning process. Coos County deserves something better than prisons, mega-biomass (and the resulting whole tree harvests of 50-250 acres and more), and being overrun by ATVs.

**Comments on the September 2017 Re-Revision section on Recreation:**

• **P. 154:** Goal: "Provide for a range of quality opportunities that are consistent with protecting environmental integrity and feature the natural values of the landscape." Mud, erosion, dust, noise, and $CO_2$ emission are consistent with this goal? Do we have studies to back this up?

• **P. 154:** Objective 1: "Manage public use so that it is sensitive and respectful of natural and cultural values." Without monitoring how can DFL deliver on this objective?

• **P. 154:** Objective 2: "Establish recreational use standards and guidelines to ensure protection of natural resources and environmental quality." How does DFL ensure these protections without monitoring that it aconcedes is unlikely to materialize?

• **P. 154:** Objective 3: "Provide for and enhance recreational uses that are compatible with other management activities." ATV use is not compatible with many of the "traditional recreational uses" the 1995 Plan sought to preserve.

• **P. 157:** Was an "updated coarse and fine filter analysis" of the Kelsey Notch trail provided by January 2017? Should it not have been part of the appendix to the Re-Revision?

## OUTLINE OF A NEW REVISION PROCESS

Illegitimate policy making processes produce unacceptable policy. The DFL was forced to spend six months on a Re-Revision because of strong public opposition to the Tech Team's Winter 2017 Draft. Unfortunately the same illegitimate process was again followed, resulting in yet another unacceptable plan that threatens to establish undemocratic precedents for the making of public lands policy in New Hampshire. *For the sake of the Nash Stream Forest, all NH state lands, and the constitutional principle of citizen oversight of public servants, this Re-Revision must be withdrawn and the democratic process of the 1990 Steering Committee must be re-established.*

To the objection that enough time has already been devoted to the Revision process, I counter a) an illegitimate process is unacceptable; and b) a proper revision process will not require any more time than the recent Re-Revision process. An additional benefit for DFL and the Tech Team is that this will give them time to focus on addressing essential directives from the 1995 Plan that still have not been implemented, notably: establishment of control areas and proper, adequate, on-going monitoring and inventory work so essential to assuring that management and policies truly are protecting the ecological integrity of the NSF.

**Timely Revisions are Necessary and Appropriate:** Even excellent Plans require periodic updating and appropriate revisions. Examples of necessary revisions include:

• Data and information derived from inventory, monitoring, and research since the Plan (or most recent Revision) was implemented. Examples in the 2017 Draft include: additions to the NSF since 1995; data from timber management, and ATV use.

• Important new developments, such as: Trout Unlimited's stream restoration work, the Coos Trail, and the impressive "Cultural Resources" section.

• Important issues currently not addressed or not adequately addressed. The most urgent issue not addressed by the 1995 Plan is anthropogenic Climate Change.

• Evaluation of data from monitoring and inventories of the Plan's effectiveness in meeting the management direction provided by the Vision.

*Revision is appropriate to reflect change when amply documented; major alterations in the vision and spirit of the operative plan must meet a higher standard of rigor, documentation, and transparent public process.*

**The New Revision Process:**

• The new revision process will take place in the context of: the condition of region's forests; the protracted economic depression in Coos County; and climate chang**e.**

• Establish a citizens' committee (preferably a mix of current and 1995 viewpoints, but not tech team members); return the tech team to its proper role. Members of the Revision Committee (as well as the NSF Citizens Committee) ought to be required

to make a formal commitment to the operative Vision and Plan. Single-interest group representatives must commit to viewing issues in a holistic manner, not just their issue viewed in isolation.

• Use the 1995 Plan as the text to be revised, but immediately adopt the 2017 formatting changes. I know from experience that cutting and pasting the 1995 Plan into the 2017 format could be accomplished in a few hours.

• Ask the Tech Team to identify all the proposed revisions they made in the 2017 Draft, and require them to supply documentation of need for changing the 1995 Plan. Many proposed changes will be easy to document and incorporate into a revision, including: updates on things that have happened since 1995; results of monitoring and other data gathering since 1995; reports on TU's restoration project, and the Coos Trail.

• For the undocumented revisions, the proposers of change must supply documentation of need for change. Failure to document a need to change would result in a call for more adequate documentation or rejection.

• Climate Change is the most important topic not addressed by the 1995 Plan. The treatment of this issue in the Re-Revision is, at best, incomplete. A subcommittee of the re-revision team should work with forest and climate scientists to identify the most urgent climate change issues and to develop suggestions about how to avoid, adapt, or mitigate potential threats posed by climate change. This material can be woven into the 1995 Plan wherever it is appropriate, but there should also be an introductory chapter on climate change early in the document.

• Review public comments on the Winter 2017 Draft and explore important issues raised. The revision should offer a more comprehensive strategy for developing partnerships with TU, UNH researchers, and others. TU's restoration work is an excellent role model. Establishing partnerships with UNH and other academic institutions should be very high priority.

• Weave all these strands together. A group committed to excellence in public land management and protection of ecosystem integrity could complete this work inside of 4-6 months. Except for the climate change sections (and perhaps a few others), they will be working with existing materials and preparing them for the final weaving together process.

**It is essential that this re-revision process use the 1995 Plan as the Text.** The 1995 Plan remains the operative management document; the 2017 Re-Revision has not been adopted. This is a profoundly important public lands management precedent that we need to get right.

I take no pleasure in writing such a harsh critique of the NSF Re-Revision. However, the draft contains so many biased, unsubstantiated, or downright false statements, and the revision process so violates our basic democratic principles that I could not in good

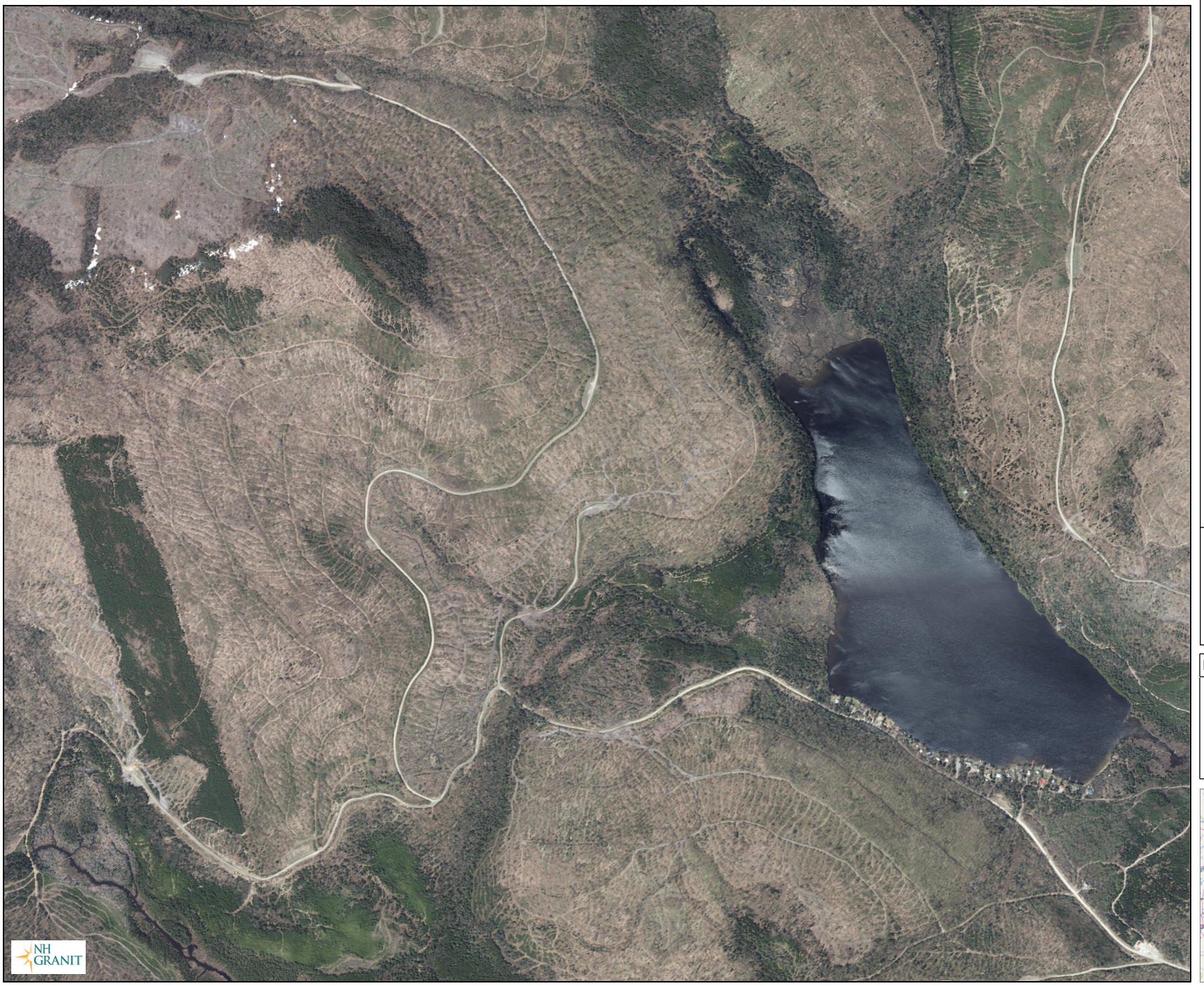
conscience let it pass unchallenged. If a legitimate revision process is followed (and explicitly incorporated into the Revised Plan) future Plan revisers will not have to suffer such a protracted and contentious process. Implementation of the September 2017 Re-Revision condemns the state's Crown Jewel to an inadequate, illegitimate plan during the greatest environmental (and political) crisis in our history. Climate change and the breakdown of political and democratic norms are a double whammy that, if unaddressed now, will wreak havoc unimagined by even our most pessimistic Cassandras.

Let us behave as proud and honorable citizens of a vibrant democracy who are committed to the protection and health of our beloved natural and human communities.

Sincerely,

Jamie Sayen

# Map by NH GRANIT



## Legend

- State
- County
- City/Town
- NH 2015 1-foot RGB

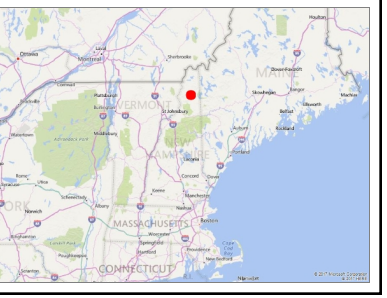
Map Scale

1: 16,340



Map Generated: 9/18/2017

Notes



| | |
|---|---|
| **From:** | Lucy Wyman |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | Re-revision of Nash Stream Forest Plan |
| **Date:** | Wednesday, October 18, 2017 11:07:02 AM |

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Director Simpkins,

Below please find my comments vis-a-via the new draft proposal for Nash Stream Forest.

While I have not read all of Jamie Sayen's critique of this second iteration, I have read enough to place my faith is his well-documented and thoughtful summation. Not only was Jamie present during most, if not all, of the original citizen's committee process, he has throughout his life been a through and persistent advocate for the ecosystem in the northeast specifically, and globally generally. For this reason, as well as my somewhat cursory knowledge of these issues, I am happy to put my support behind his recommendations.

Much has changed in since the original draft was set in place. It's pretty clear that the continued assault on the environment, regardless of origin or opinion, should move us to greater, rather than lesser, efforts to safeguard the future as much as is possible.

Additionally, Jamie's assessment of the conflicting issues with the current process and committee (no reflection on the integrity of said individuals) is one with which I agree. Specialists often cannot see the forest for the trees-an ironic cliche here-and a well-rounded and carefully selected board of the citizenry with access TO the specialists, are better equipped to produce a well-rounded, careful result, as in the first draft.

In conclusion I would reinforce the original mandate of the first plan which states: "Protect the natural quality and integrity of the land, natural community, native species and ecological processes. Use and build up, rather than work in opposition to, ecological principles and natural tendencies. Manage the forest with as little interference as possible."

"Less is more" is an apt adage here: either leave it as it was or further reduce the "interference".

Thank you-

Lucy K. Wyman
106 Sand St.
Lancaster, NH. 03584
788-3688

Sent from my iPad

## Stanwood, Sabrina

**From:** C R <racetelemark@hotmail.com>
**Sent:** Saturday, October 21, 2017 6:02 PM
**To:** DNCR: Nash Stream Plan
**Subject:** Nash stream plan comment

Hello,

I am concerned that the revised Nash Stream Plan does not represent well enough the degree of conservation that was originally set out within the original plan.

Do not give ATVs their own bullet designation while all other recreational activities are lumped into one bullet.
ATV's are loud. They are very soil eroding. They detract from the natural quality of the forest and put immediate stress on wild life animals and other recreating forest users.
We dont consider placing race car tracks in our preservation forest areas as examples of multi-use for obvious reasons. They are generally incompatible to the well being of forest preservations.

The use of the words "so-called" regarding climate change belays an ignorant slant. While climate science contains many yet unknowns, general climate chemistry and the basic effects of increasing atmospheric carbon are well understood facts.
Please dont bend to using ignorant, unscientific, climate change denying rhetoric.

The Nash Stream Plan should retain fully the points of conservation that were original to its founding.
Create a new forest inventory, and review how past forestry practice has effected the forest.
Restore the high status of control areas.
Restore the original plan's emphasis on long-rotation uneven-aged management and very limited use of clearcutting.
Remove the bullet in the Vision statement dealing exclusively with ATV use.

Thank you,

C Rice

**From:** abbyaustin@myfairpoint.net
**To:** DNCR: Nash Stream Plan
**Subject:** Nash Stream Management Plan
**Date:** Sunday, October 22, 2017 8:42:39 AM

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Dear Director Simpkins,

Thank you for editing the Nash Stream Management Plan to better reflect some of the concerns expressed by NH citizens.

However it still strays unnecessarily away from the original 1995 management plan. The original plan was written as a "timeless" document. It was not treated as such, but, rather, passages and purposes were erased with no reason given. Any change from the original plan must be backed up by documentation, proving the need for such.

I absolutely agree with Jamie Sayen's guidelines for a new revision process. It seems that the writers of this re-vision did not have a firm understanding or appreciation of the original document to re-write it in this way.

I urge you to adopt Jamie Sayen's steps for a plan-based revision process, to do otherwise is a real disservice to the members of the committee who worked so hard together to write the original, not to mention the citizens of NH who rely on us to take the long view towards a healthy future for all of us when it comes to taking care of our land, forest, waters, trees and wildlife.

Abby Evankow
6 Loups Garou Rd
Gorham, NH

**From:** Pat Kellogg
**To:** DNCR: Nash Stream Plan
**Cc:** jres.triton@gmail.com
**Subject:** Draft Re-Revsion of the Nash Stream Management PLan
**Date:** Sunday, October 22, 2017 5:47:50 PM

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N.H Division of Forests and Lands
To Whom It May Concern:
I previously wrote with my concerns about the Draft Revision of the Nash Stream Forest (NSF) Management Plan last winter.
My continued concerns about the Re-Revision of the Nash Stream Management Plan are that the revisions undermine the model 1995 Management Plan. To quote from Jamie Sayen of N. Stratford, N.H. who sent in a comprehensive critique of the Re-Revisions:
"Public lands must be managed to provide ecosystem protections and services that private landowners cannot or will not provide….
The Draft Re-Revision remains unacceptable for a variety of reasons, notably: the entire Revision process has been illegitimate; its belated treatment of Climate Change is inadequate and inconsistent with other elements of the Re-Revision, and it repeats discredited biomass industry myths. The Re-Revision makes selective use of peer-reviewed scientific studies that contradict many of the proposed Revisions."
I urge you to take seriously Mr. Sayen's critique with which I agree, and withdraw this Re-revision and, as he states: "a representative citizens' committee must be established to restore Constitutional right of citizen oversight of public-policy making and public servants. Unless and until the NH Legislature adequately funds required and necessary monitoring, inventories, and the salaries of the NSF forester positions**, the timber and wildlife management practices must be suspended.**"
The Nash Stream Forest is the largest state-owned single-tract forest in New Hampshire – 40,000 acres! Please do not accept this Re-Revision.
Thank you for your consideration.
Patricia Kellogg
320 Manns Hill Road
Littleton, N.H. 03561
CC: Jamie Sayen(jres.triton@gmail.com

## Stanwood, Sabrina

**From:** Cam Bradshaw <cambradshaw58@gmail.com>
**Sent:** Sunday, October 22, 2017 7:43 PM
**To:** DNCR: Nash Stream Plan
**Subject:** Sept. 2017 re-revision

The Sept. 2017 re-revision is unacceptable to me.

There is too much interference and not enough monitoring.

The first item in the 1995 Management Vision reads: “Protect the natural qualities and integrity of the land, natural communities, native species, and ecological processes. *Use and build upon, rather than work in opposition to, ecological principles and natural tendencies. Manage the land with as little interference as possible* with natural ecological functions.” (1995:61)

The proposed revisions do not reflect the vision of the 1995 management plan.

There will not be sufficient control areas.

There is not adequate funding for monitoring timber and wildlife management and ATV use.

It does not adequately address the reality of climate change. Let's take the opportunity to manage Nash Stream for Old Growth, maximizing carbon sequestration and giving all native species a chance, not just common game species.

Please begin a new revision process using the 1995 plan as the text. Appoint a Citizens

Review Board committed to the 1995 vision and plan. Make Jamie Sayens a member.

Establish a Climate Change Advisory Board comprised of independent scientists who are studying forests and climate change.
Establish partnerships with UNH and other academic institutions.

Third time's a charm. Let's protect and responsibly manage Nash Stream, the Crown Jewell of NH public lands.

Thank you
Cam Bradshaw
Berlin, NH

# New Hampshire
# Fish and Game Department

**HEADQUARTERS:** 11 Hazen Drive, Concord, NH 03301-6500
(603) 271-3421
FAX (603) 271-1438

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e-mail: info@wildlife.nh.gov
TDD Access: Relay NH 1-800-735-2964




October 17, 2017

Brad W. Simpkins
Director, Forests and Lands
Natural and Cultural Resources Department
PO Box 1856
Concord, NH 03302-1856

Dear Director Simpkins:

I am writing this letter in regards to the Nash Stream Forest Management Plan review, specifically the prohibition of recreational bear baiting/hunting in Nash Stream. I was not aware of this rule written into the Nash Stream Management Plan and have been signing bear baiting permits in Nash Stream as did my predecessor, Lt. Doug Gralenski, for about 12 years.

When dealing with rules and laws, we are accustomed to having prohibitions written out in rule or law, not in management plans, so we issued these in ignorance until it was brought to my attention this year. That being said, I do not believe we have negatively impacted Nash Stream or the bears in Coos County by doing so. What I did negativity impact are those hunters who have hunted bears in Nash Stream by use of bait who could not do so this year due to my mistake. For that I am sorry. I hope you would remove this rule in the new management plan as it only targets recreational bear bait hunters, not guides. In essence, a New Hampshire guide could put commercial baits in Nash Steam if he had a Special Use Permit, as some of my guides do, and bait hunt on state lands like Moose Brook State Park. I would hope that if there was a need to have special wildlife rules put on state land that it would be addressed as to why current Fish and Game rules weren't enough to address proper management on the land. I believe the current Fish and Game rules and laws go a good job managing our bears, and there is no need of special bear baiting rules in Nash Stream. Thank you.

Sincerely,

Lt. Wayne T. Saunders
Conservation Officer


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(603) 788-3164
FAX (603) 788-4823
email: reg1@wildlife.nh.gov

**REGION 2**
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FAX (603) 744-6302
email: reg2@wildlife.nh.gov

**REGION 3**
225 Main Street
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(603) 868-1095
FAX (603) 868-3305
email: reg3@wildlife.nh.gov

**REGION 4**
15 Ash Brook Court
Keene, NH 03431
(603) 352-9669
FAX (603) 352-8798
email: reg4@wildlife.nh.gov

## Stanwood, Sabrina

**From:** Cindy Coulombe <cscoul@hotmail.com>
**Sent:** Monday, October 23, 2017 12:11 PM
**To:** DNCR: Nash Stream Plan
**Subject:** Nash Stream Revisions

Dear Committee ,

I want to Thank you for taking our comments under thoughtful consideration last spring. As a local person who uses the Cohos Trails in the Nash Stream forest area, I want you to know that having ATV traffic prohibited is a plus. It would not be such a back-woods joy to be out here if ATVs were running on all roads and trails.
There are some things that I do not understand about this State run land. The monies to see if ATV traffic affects erosion and such are there. The monies that should have been allowed since 1995 to use on study areas in the forest are nowhere to be seen. Any needed studies should be funded going forward. i am glad that you are looking into hiring someone in the forestry management area also. Thank you for your time.

Sincerely, Mrs C S Coulombe

Director Brad Simpkins
NH Division of Forest and Lands
Attention: Nash Stream Plan
172 Pembroke Road
Concord, NH 03301

Dear Director Simpkins,

Thanks for the opportunity to comment on the draft Nash Stream Management Plan,

My comments are focused on the following specific issues:

**Management Vision**

It is not enough to imply that the current proposed plan follows the "sprit" of the 1995 plan. The proposed plan seems to depart in some significant ways from the 1995 plan, including lack of a specific monitoring plan.

**ATV Use**

I appreciate the attempt to define and contain ATV use within Nash Stream consistent with the area's vision and purpose.

I do not agree that the Kelsey Notch Trail should be allowed to continue on a three-year trial basis. The trail's use should be stopped, not allowed to continue pending a review of its legal standing. Once trails are built and the public gets used to their existence, it is extremely difficult to remove them. One of the arguments in three years will no doubt be: it's been here for three years what's the big deal? Barring a catastrophic failure, the tendency will be to go with the path of least resistance and let it stay. This is not the best way to manage a unique resource such as Nash Stream.

I have a similar comment about the proposed southern connector. Consistent with the area's vision and purpose, no new ATV trails should be allowed. I understand the economic and social pressure surrounding ATVs in Coos County. But the grossly inadequate level of state planning and the limit of law enforcement resources –not to mention that according to the Ride the Wilds website there are already over 1,000 miles of ATV trails – means that construction of new trails within Nash Stream should not be allowed.

**Monitoring**

While I know that monitoring is a difficult task, the final plan must include a more robust and specific monitoring and evaluation plan similar to the 1995 plan.

**Forest Management**

I am unclear why the proposed plan changed the 1995 plan in regard to only using uneven age management when no other means to accomplish forest management goals exists. The revised plan should retain this objective.

The plan should clearly establish the timetable for conducting forest inventories. This is too important a tool for evaluating whether current management practices are meeting desired outcomes to leave open ended.

**Forest Carbon**

This section is a good start. But it needs more work on the issue of carbon sequestration. What specific role will the Nash Stream Forest play now and in the future in regard to carbon sequestration?

Finally two comments: I think its worth adding consideration of composting toilets to the recreation discussion about what types of toilets are appropriate in what locations. Right now, pit toilets seem to be the only option for low use areas (p.161).

I can't help but notice that of a 13 member public advisory committee only one member is a woman. Certainly the state of NH can do better at finding a more balanced advisory group.

Thanks for the work that has gone into managing Nash Stream and for considering my comments.

Sincerely,

Rebecca Oreskes
49 Lorraine Road
Milan, NH 03588

October 23, 2017

Mr. Brad Simpkins, Director
Division of Forests & Lands
NH Department of Natural & Cultural Resources
Attention: Nash Stream Plan
172 Pembroke Road
Concord, NH 03301

Dear Director Simpkins:

We write in response to the September 2017 draft of the proposed update for the Nash Stream Forest Management Plan as it relates to recreational use of the property by ATVs and UTVs. Individually, some of us may submit additional testimony on other parts of this draft plan.

We support the management vision and goals as they relate to recreation. Concerning ATV/UTV use of the Forest, we believe the September draft properly addresses the ATV/UTV use issues with one exception. As we wrote jointly in comments dated February 8, 2017, we are comfortable with 1) the continuation of the West Side Road ATV Trail as a permanent connector to ATV trails on abutting privately owned lands, and 2) the provisional continuation of the Kelsey Notch Trail for a three year period.

We recommend that the final management plan language concerning the proposed "Southern Connector Trail" be amended to make clear that in the event a decision is made to enable such a trail that it only be done for a provisional three year trial period. Only after a full assessment and monitoring, similar to that planned for the Kelsey Notch Trail, would a decision be made as to whether this trail becomes permanent, is extended as provisional for the gathering of additional data, or is discontinued.

We thank the Division of Forests and Lands for the extensive research and community outreach it has conducted in developing this draft master plan.

Sincerely,


***Jim O'Brien***
Director of External Affairs
The Nature Conservancy
jim_obrien@tnc.org

***Susan Arnold***
Vice President for Conservation
Appalachian Mountain Club
sarnold@outdoors.org

***Will Abbott***
Vice President Policy
Society for the Protection of NH Forests
wabbott@forestsociety.org

| | |
|---|---|
| **From:** | Mark Roberts |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | Comments on Re-revision |
| **Date:** | Monday, October 23, 2017 1:52:31 PM |

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To Whom It May Concern,

I am writing to express my strong opposition to the “revised” revision of the Nash Stream Forest Management Plan that was submitted on Sept. 22, 2017.

The plan provides for no monitoring of logging impacts to the Nash Stream Forest and refuses to address climate change by adhering to forest management policies that favor young forests over old growth stands that remove and sequester substantially more carbon from the atmosphere.

The plan seems to allow for a steady stream of timber cutting to support the biomass industry in Northern New Hampshire. Profit appears the central motive, not ecosystem stewardship.

Furthermore, it still favors ATV use over less damaging, and more popular pursuits like hiking, skiing, and snowshoeing. There are plenty of other trails to ride fast and scare animals.

Please go back to the drawing board.

Thanks,
Mark Roberts
Lisbon,NH

Sent from my iPhone

The Nature Conservancy
New Hampshire

22 Bridge Street, 4th Floor
Concord, New Hampshire 03301
(603) 224-5853

nature.org/newhampshire

October 23, 2017

Mr. Brad Simpkins, Director
Division of Forests & Lands
NH Department of Natural and Cultural Resources
172 Pembroke Road
Concord, NH 03301

**RE: The Nature Conservancy of New Hampshire's Comments on the Revised September 2017 Draft Nash Stream Forest Management Plan**

Dear Director Simpkins,

Thank you for the opportunity to provide written comments on the revised draft Management Plan for the Nash Stream State Forest. The Nature Conservancy acknowledges the tremendous effort and time that has gone into producing this Management Plan Revision. We appreciate the thorough review of the public comments provided to your Agency following the release of the first draft.

We are pleased to see that the Revised Draft incorporates many of the suggestions made by The Nature Conservancy. We believe that the Revised Draft better reflects the conservation values and vision for which the Nash Stream Forest was protected.

As the Department works to finalize the Management Plan, we would like to offer several comments and suggestions we feel would strengthen the Plan further.

1) **Chapter 1. Nash Stream Forest**
   Section 1.7 – Initial Planning Process. Both the Highlights Section (at the beginning of the 1995 Management Plan) and reference to Appendices 2 and 3, (pages 159-160 of the 1995 Management Plan) have been removed in the Revised Draft. The summary included in the Revised Draft 2017 Management Plan is a simplistic characterization of the public comment history and does not represent the full breadth of comments received in the original process (such as protecting natural area, passive recreation, minimum impact use and care to prevent over-use, no new roads/trails, concern about access to wildlife, ecological health). We think it important to retain both the Highlights as well as the original Appendices 2 & 3 at the end of the document (with references to those Appendices in Section 1.7) as they serve as an important historical record of the Management Plan development.

2) **Chapter 10. Climate Change**
   Given the critical role of climate change in driving the health of the Northern Forest, we were pleased to see inclusion of a chapter focused specifically on this topic in the Revised Plan. With a

few minor suggestions for inclusion as specified below, we believe that the current chapter reflects current science regarding the likely consequences of climate change for Nash Stream, and how management and monitoring activities can be tailored towards both (1) promoting the role of Nash Stream in helping to avoid climate change through forest carbon sequestration; and (2) helping to mitigate the effects of climate change on the health of terrestrial and aquatic ecosystems.

**Specific Feedback:**

Page 139: Given well-documented moose mortality from winter ticks, the iconic nature of this species in NH, and the potential role of browse in influencing forest succession (although this may or may not be a dominant factor in Nash Stream), it seems important to mention population trends for this species in the "Wildlife" section.

Page 144: Under Objective 4, we suggest citing the "Resilient and Connected Landscapes for Terrestrial Conservation" analyses undertaken by Dr. Mark Anderson. This work is incorporated in the New Hampshire Fish and Game Department's Wildlife Action Plan, and is increasingly being used to identify regional conservation priorities for maintaining a network of resilient and connected habitats. Furthermore, the analysis highlights the importance of Nash Stream as both a regionally important resilient site for biodiversity conservation, and as a critical connecting landscape for species gradually redistributing northwards in response to climate change. [1]

**3) Chapter 11. Recreation**

a. On page 154, Objective 3, Strategy 2 refers to enhanced recreational uses that are compatible with other management activities. This section requires the periodic evaluation of snowmobile trail corridors to determine needed trail improvements or alterations. We recommended amending this section to include the periodic evaluation of ATV/UTV trail corridors along with snowmobile corridors.

b. On pages 159 and 161, the Revised Draft Plan references camping in the forest. The original management vision called for dispersed back-country camping only: we suggest maintaining that clarity in this Plan. In specific, the language on page 161 should clarify that "automobile" means any motorized vehicle, including ATV/UTV's.

c. The Nature Conservancy, along with our partners at the Society for the Protection of New Hampshire Forests and the Appalachian Mountain Club, submitted separate comments on October 23, 2017 regarding the treatment of ATV/UTV use in the Revised Management Plan. Please refer to those comments.

In closing, The Nature Conservancy thanks the Department for your hard work and diligence during this Management Plan review process. We believe that Nash Stream Forest will be well served under the

[1] Data, reports, and web mapping tools can be found at: http://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/resilience/Pages/Downloads.aspx

revised plan, and. we look forward to continuing our partnership in the conservation and stewardship of this important public resource.

Sincerely,

Jim O'Brien
Director of External Affairs
(603) 224-5853 X 228
Jim_obrien@tnc.org

| | |
|---|---|
| **From:** | Seth Quarrier |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | Comments on the Nash Stream Plan |
| **Date:** | Monday, October 23, 2017 7:49:49 PM |

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Hi,

I wanted to comment on the proposed 2017 Nash Stream Plan. I think that the plan should include for a substantial amount of mature forest, I cannot see how managing for maximum saw timber yield is consistent with preserved public land. I think that the 1995 plan struck an appropriate balance between forest conservation and timber yield for Nash Stream, I am in opposition to decreasing the mature mix in any new plan or practice. Also, I am opposed to OHRV trails in Nash Steam. Living in Berlin, I already am privy to the noise and disturbance of OHRV ridership and feel it is wholly inconstant with the notion of land conservation. Enough of the North Country is accessible to them, let us preserve some areas that are not.

Thank you very much,
Seth Quarrier
Berlin, NH

## Stanwood, Sabrina

**From:** Guinn, William
**Sent:** Tuesday, October 24, 2017 8:15 AM
**To:** DNCR: Nash Stream Plan
**Subject:** FW: Nash stream plan

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**From:** Savage, Clinton
**Sent:** Monday, October 23, 2017 12:13 PM
**To:** Machinist, Margaret
**Cc:** Guinn, William
**Subject:** Nash stream plan

HI Maggie,

On page 161 Item #7 it talks about beaver and their dams. I have concerns that it says a dam cannot be breached for the purpose of trail maintenance unless it goes to SLMT first. If there is a trail that has been flooded because of a dam or plugged culvert or bridge I don't think that this should have to go to SLMT. I think we should be able to address the problem as needed so that we do not have wash outs. I have no problem with going to SLMT if it is new construction and a dam needs to be breached but I don't think it is feasible for maintenance.

Clint

Clinton Savage, District 1 Supervisor
NH Bureau of Trails
629B Main Street
Lancaster, NH 03584

Office 603-788-3155
Email-Clinton.Savage@nh.gov

| | |
|---|---|
| **From:** | Monique Petrofsky |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | Comments of draft plan - Nash Stream |
| **Date:** | Tuesday, October 24, 2017 10:21:45 AM |

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Dear Sir,

I support **prohibiting all ATVs** on the property. I recently moved back to the area (my child hood home) after 29 years on active duty with the US Public Health Service and am dismayed to see the damage and interference to residents the ATVs are causing. Although I would like to see them completely off the roads and into the "wilds", having now seen the damage they cause, littering and deep ruts resulting in erosion, I have to weigh in to prohibiting them completely in Nash Stream.

I moved back to the area due to its pristine beauty and my love of nature, hiking and fishing. This is what Nash Stream should promote.

Respectfully,

Monique Petrofsky

680 Bear Rock Road
Stewartstown, NH 03576

cell 907 903 6326

NHTOA
NH Timberland Owners Association
*Growing Leadership for New Hampshire's Forests*

October 24, 2017

Director Brad Simpkins
Attention Nash Stream Plan
NH Division of Forests and Lands
172 Pembroke Rd.
Concord, NH 03301

Re: Nash Stream Management Plan

Director Simpkins,

Thank you for the opportunity to comment on the Draft Nash Stream Forest Management Plan. Founded in 1911, the New Hampshire Timberland Owners Association (NHTOA) represents forest landowners and the forest products industry in New Hampshire. This sector of New Hampshire's economy is vibrant and represents the third-largest sector of manufacturing in the state. The forest products industry in New Hampshire employs more than 10,000 people directly with an annual payroll of more than $330 million.

The NHTOA will provide one general comment and three specific comments.

**NEW HAMPSHIRE TIMBERLAND OWNERS ASSOCIATION**
54 PORTSMOUTH ST., CONCORD, N.H. 03301
PHONE (603) 224-9699 • FAX (603) 225-5898 • WWW.NHTOA.ORG

**General Comment**
**Forest Management on Nash Stream Forest.**

As the background narrative of the plan documents, the Nash Stream Forest has always contributed to the state's forest products economy, and the NHTOA is pleased to see the N.H. Division of Forest and Lands (the "division") recognize this importance. The NHTOA is especially pleased to see this parcel's economic contribution to the forest economy appear as the first item on the list of reasons why the residents of New Hampshire purchased this parcel in section

**1.3 WHY THE STATE PURCHASED THE NASH STREAM FOREST**.

As an observer, and now active participant, in the Nash Stream Forest planning process, it is clear to the NHTOA that the most controversial issue facing the division during this round of planning is motorized recreation. The NHTOA does not have an opinion on the use of motorized vehicles on the Nash Stream Forest, but we have two concerns as we watch this debate.

1. Dilution of principle goals - The NHTOA does not want to see one of the principle goals of this property's acquisition (i.e. contributing to the forest economy through the sale of wood products) diluted to accommodate other users. We do not believe recreational uses should overshadow the division's ability to manage this property for forest products.

2. Land allocation or "State Forest zoning" – Similarly, the NHTOA does not want to see the division decide it would be easier to accommodate various interest groups by creating specific management "zones" within the division's forests. Timberland management coexists with motorized recreational users and almost all other traditional recreational uses (e.g. hunting, hiking, fishing, etc.). The NHTOA believes the division has the expertise and experience to manage this forest as a single parcel, with mixed uses occurring across the landscape where appropriate. We do not want to see the state begin allocating or setting aside sections of Nash Stream Forest only for specific uses to the exclusion of other uses. Such a strategy inevitably pits user groups against each other as they scramble for acreages.

**Specific Comment**
**Harvest Activity**

The NHTOA appreciates the high priority that active forest management is given in the proposed management plan, but we are concerned the division is not being proactive enough. We recognize the average age class of timber across the property was relatively young at the time of acquisition, but that was 29 years ago. Now many of these timber stands are approaching a size and age class requiring more active management, and we are concerned the division's conservative management proposal will not keep pace with the acres of land requiring management.

This can be seen in the proposed target age classes and timber rotations in tables 14 and 15 on pages 101 and 103. The NHTOA does not believe annually managing less than 1 percent of the suitable base is adequate to keep pace with the acreages as they mature.

Moreover, the NHTOA believes these targets incorrectly favor biological maturity over market maturity. If a primary reason for owning and managing the property is to provide an economic contribution to the forest economy, we believe these targets and rotations should be more reflective of market maturity.

In regards to wildlife habitat requirements, the NHTOA would like to emphasize the need for increased active management to support outlined objectives in Chapter 6. This would include ensuring adequate acreages of early and mid-successional forestland created through timber harvesting. The current plan recognizes that previous estimates of forest structure have, at this point, likely been exceeded (Section 8.2.5, page 90). The NHTOA is concerned that the forest structure conditions outlined under Objective 2 in Wildlife Management Goals, Strategies, and Implementations (Page 64) will not be fulfilled unless increased timber harvesting is permitted.

Lastly, we believe this conservative approach will be problematic for certain species found on the property, such as Spruce and Fir, and will negatively impact other resource values on the property. At the proposed rate of management, we believe that over time the Nash Stream Forest will begin to resemble other public lands in northern New Hampshire with stands of overstocked, over-mature timber and a death of early and mid-successional habitat. To avoid this, the NHTOA advocates the division begin initiating more regeneration harvests to remove the poor quality stems and enhance crop tree growth.

**NEW HAMPSHIRE TIMBERLAND OWNERS ASSOCIATION**
54 PORTSMOUTH ST., CONCORD, N.H. 03301
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**Specific Comment**
**Data/Planning**

Also referenced in section **1.3 WHY THE STATE PURCHASED THE NASH STREAM FOREST** of the draft plan are the original justifications for state timberland ownership authorized by the General Court in 1881. Again, first on their list is a commitment to forest management,

1. *State-owned forests would serve as demonstrations of sound forestry principles*

Although, the silvicultural techniques and our understanding of the science have evolved since 1881, one thing every forester needs to perform their job is good basic information, such as volume per acre by species and product. Given the size of this tract, estimated growth and stocking data from the U.S. Forest Service's Forest Inventory Analysis (FIA) is probably adequate, but good maps showing where timber is located and good maps of infrastructure --roads, bridges, etc. -- for maintenance needs is essential. The NHTOA encourages the division to provide adequate budgeting and staffing to give its land managers the tools they need to manage the property and fulfill that early justification. Again, the NHTOA wants to avoid the pitfall many public land management agencies fall into: well-written but underfunded management plans that can't be executed.

**Specific Comment**
**Suitable Base**

Regarding objective #2 on page 95,

*Determine the commercial forest area suitable for timber management.*

The NHTOA applauds the division in accomplishing this goal and refreshing it for the current management plan. The NHTOA also supports the division's continued use of scientifically proven Best Management Practices in determining buffer distances and no-harvest areas. The best management practices described in "New Hampshire Best Management Practices for Erosion Control on Timber Harvesting Operations" (2016; published by the division and the University of New Hampshire Cooperative Extension) have been shown to protect sensitive areas (e.g. riparian areas, wetlands, steep slopes, etc.) and allow sustainable forest management.

With respect to the division's prohibition of managing any land above 2,700 feet in elevation or on slopes greater than 35 percent, the NHTOA requests the division reconsider this mandate. As timber harvesting technology evolves and our forests face new and more devastating forest health challenges (e.g. invasive pest outbreaks), the NHTOA believes it is irresponsible for the division to close the door on managing these previously management-restricted lands should the need arise. Therefore, consideration for adaptive management should be available in case of emergency scenarios.

Again, the NHTOA appreciates the opportunity to comment on this proposed plan and we welcome any opportunity to provide additional comment or provide more information to assist the division.

Thank you,

Jasen A. Stock
Executive Director

**NEW HAMPSHIRE TIMBERLAND OWNERS ASSOCIATION**
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APPALACHIAN MOUNTAIN CLUB
YOUR CONNECTION TO THE OUTDOORS

October 23, 2017

Brad Simpkins, Director
NH Division of Forests and Lands
172 Pembroke Road
Concord, NH 03301

Re: Draft 2017 Nash Stream Forest Management Plan (September revision)

Director Simpkins:

The Appalachian Mountain Club offers the following comments on the September 2017 draft revised Nash Stream Forest Management Plan.

The September draft represents a significant improvement over the first draft revision. We are encouraged that many of the concerns addressed by AMC and others have been taken seriously and incorporated into this draft. The retention of languange from the original plan is a positive step. However, there remain some areas where additional information or clarity is needed, and some management recommendations that need to be improved.

**Forest inventory**

We are glad to see the DNCR has a funded process in place to complete an up-to-date forest inventory of the property by the end of 2019. We believe that once this inventory is complete, and the information has been used to develop detailed growth and harvest information, that the plan should be revised to incorporate this information and allow the public an opportunity to comment. This information will be critical to providing the public a better understanding of the current condition of the forest and how it has changed since the time of purchase. It is of sufficient importance that the public have the opportunity to see it as soon as possible – it should not wait a decade or more until a new revision.

We do have a concern that the definitions for seedlings and saplings differ from those commonly used across the region. The plan defines seedlings as less than 2 inches DBH and saplings as between 2 and 4.5 inches. These differ from the USFS Forest Inventory and Analysis definitions of less than 1 inch DBH for seedlings and between 1 and 4.9 inches for saplings. *Good Forestry in the Granite State* (2nd edition, section 2.2) also uses the latter definitions. The FIA definitions are widely used and we urge you to adopt these. Maintaining non-standard definitions for these size classes makes it difficult to interpret the Nash Stream stand size class data in comparison to other sources (including but not limited to FIA data).

| | |
|---|---|
| **From:** | Dave Publicover |
| **To:** | DNCR: Nash Stream Plan |
| **Subject:** | Appalachian Mountain Club comments on the September 2017 draft revision |
| **Date:** | Tuesday, October 24, 2017 4:32:35 PM |

Director Simpkins – attached are AMC's comments on the September 2017 draft revision of the the Nash Stream Forest Management Plan. I apologize for submitting them a day past the deadline and hope that this is not a significant inconvenience.

Thank you for the opportunity to comment on this draft.

David Publicover
Senior Staff Scientist/Assistant Research Director

**Appalachian Mountain Club**
603-466-8140
Website | Facebook | Twitter | YouTube

***Your Connection to the Outdoors***

**Silviculture, sustainable harvest levels and forest structure goals**

We are encouraged that this draft has restored much of the language from the original plan related to the management vision, the desired future condition and the silvicultural emphasis. However, the following language from the original plan (page 48) has not been restored:

> *Future management of the Nash Stream Forest will favor older forest and reduce the size of young forest patches in comparison to present conditions… Species which reach their highest abundance in seedling stands will decline in numbers as the forest ages.*

This language is one of the clearest statements of the intent of the original plan and should be retained. Instead, the current plan includes the following (page 71):

> *The desired future condition of habitats in the NSF includes a mix of forest age classes across the landscape…Currently the NSF lacks a significant component of regenerating forest. The predominant use of uneven-aged management at Nash Stream Forest over the past 30 years since State acquisition has resulted in a shift in forest composition, structure and age as predicted in the original plan. There has been a significant reduction in both the average size of forested openings and the overall amount of young forest habitat on the property, as well as the species that depend on those habitats.*

The latter part of this statement indicates that the Nash Stream Forest has developed just as the original vision intended. However, the statement appears to present a justification for the forest structure goals immediately preceeding it, which include a goal of 5-10% of the forest in regenerating stands. As discussed in more detail below, this goal is unacceptably high and clearly inconsistent with the original vision[1].

The lack of a detailed sustainable harvest level in the plan was one of the major concerns highlighted in our comments in the original draft, and it will remain a major concern until such time as it is developed. We understand that the inventory process that will allow this calculation is underway. We strongly urge that once this information is developed it be included in a new revision available for public comment (perhaps as early as 2020).

The inclusion of an approximate sustainable harvest level based on an average growth rate of 0.4 cords/acre/year is a welcome addition and provides evidence that harvesting since state purchase has been well below sustainable levels. (The AMC used a similar approach during the first year of ownership of its Maine lands to determine an appropriate harvest level prior to the collection of new inventory data.) However, this estimate should not serve as a long-term substitute for detailed inventory data and growth-and-harvest modeling.

We also applaud your application of a 20% "adjustment factor" in determining the area available for timber harvesting to account for unforeseen site issues (such as unmapped inoperable areas or unmapped stream corridors). This is a conservative approach that is very appropriate for the Nash Stream Forest.

We remain confused by Table 15, which applies even-aged terminology to describe a forest that is intended to be managed primarily on an uneven-aged basis. "Rotation age" and "regeneration

[1] DNCR's Response to Comments document states in reference to this issue, "During the revision and comment period, we spoke with several of the authors of the original plan." While the "several authors" are not identified, we have learned that these discussions did not include Steve Blackmer, the chair of the original Advisory Committee. We believe that Mr. Blackmer may have valuable insight into this issue and should be consulted.

acres" have no meaning in an uneven-aged context. Under uneven-aged management regeneration is expected to occur after every entry, and thus every entry in an uneven-aged stand would be considered both tending and regeneration[2]. Do "regeneration acres" include both even-aged regeneration harvests and uneven-aged group selection harvests? Tracking the acre of individual groups is generally not done and would seem to be both cumbersome and unnecessary.

In addition, we are also confused by the relationship between the management vision, Table 15 and the forest structure goals set forth in the table on page 71[3]. We have the following questions and comments:

- Since this table applies to "manageable acres" we assume that refers to the Area Suitable for Timber Management (ASTM). To avoid confusion we suggest using that term in the table.
- In this table saplings are groups with poletimber, whereas in other areas (e.g. page 101) they are lumped with seedlings. This makes it difficult to compare the goals with existing data.
- Do seedling acres refer only to even-aged regeneration areas, or does it include uneven-aged groups? If the latter, we reiterate our previous comment about the impracticality of tracking the acreage of individual groups. If the former (which would be consistent with the generally accepted meaning of "seedling stands" as refering to even-aged early-successional stands) this number is too high. As noted in our comments on the first draft, at the time of the original plan 8.4% of the upland forest was in seedling stands. This proportion has declined significantly since state purchase as anticipated and as noted in the revised draft. However, the forest structure goals in the draft revised plan of 5-10% in seedling stands would maintain early successional habitat at levels that could equal or exceed those that existed at the time of state purchase. This is clearly contrary to the Vision.

Assuming that stands remain in the seedling stage for 15 years, maintaining 5-10% of the ASTM in this condition would require even-aged harvest of about 60 to 120 acres per year, or 40 to 80% of the "regeneration acres" specified in Table 15. This would mean that the majority of the forest was being managed on an even-aged basis, which is clearly contrary to the Vision and other statements in the plan.

In contrast, if one assumes:

1. Even-aged regeneration remains in the seedling stage for 15 years,
2. 10% of the ASTM is managed on an even-aged basis[4], and
3. A weighted average rotation of 120 years,

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[2] We recognize that many stands are currently in an even-aged condition due to past management, and thus the first entry during the transition to an uneven-aged condition would most likely be considered a thinning that would not be intended to promote regeneration.

[3] This table is not numbered but the text appears to reference it as Table 11, which is incorrect. Table 11 is the list of past DNCR harvests on page 95.

[4] We are not proposing this as an appropriate level, but rather as an illustration of the limited amount of regeneration habitat that would be expected in a forest dominated by uneven-aged management. We note that Early Successional Hardwoods (the most likely to be targeted for even-aged management) represent about 5% of the ASTM.

then about 1.25% of the ASTM would be in the seedling stage. (This figure does not count group selection as regeneration acres.) A much lower goal for regeneration habitat (no more than 1-2% of the ASTM) would be more consistent with the Vision.

The plan revision needs to clarify and resolve this confusion and inconsistency between the vision of a dominantly uneven-aged forest, the area regulation of Table 15, and the forest structure goals on page 71. **A goal of 5-10% of the manageable acres in seedling habitat is clearly inconsistent with the Vision.**

**Climate change**

We were gratified to see the inclusion of this section. Overall we believe it contains excellent and generally accurate background information. The management regime for Nash Stream set forth in the Vision (dominantly aimed at developing and retaining mature, structurally complex, high volume stands) is very appropriate for promoting and maintaining high levels of carbon storage while providing other benefits. We offer the following comments:

- We suggest that this section should go earlier in the document, between the current sections 3 and 4. Climate change is a major overarching consideration that must inform the goals, objectives and implementation of all management actions. It is not simply another resource to be considered, and this information should preceed the sections on individual resources.
- The inclusion of boreal forests in the figures on pages 141 (Figure 16) and 142 (unnumbered), taken from Pretziger and Euskirchen (2004), may be misleading. While we were unable to access the full text of this article, the abstract indicated that the study evaluated ecosystem dynamics in tropical, temperate and boreal forests. In this context it is likely that "boreal forest" refers to the circumboreal forest of Canada, Alaska, Russia and Scandinavia. This is a much different forest than the temperate spruce-fir forests in the Acadian Forest region and are likely to have much different dynamics. If this graph is retained this needs to be made clear.
- Page 141: "*Although older forests often sequester carbon at a slower rate, these forests do a better job of storing significant amounts carbon over long periods of time*." We suggest citing Keeton et al. (2011)[5] in support of this statement.
- Page 141: "*Overall, the total ecosystem stores more carbon the older it is in temperate forests, while in boreal forests carbon storage peaks when stand ages are between 70 and 200 years*." No citation is provided for this statement. We agree with the first part, though it should be reworded as "Overall, northeastern hardwood-conifer forests store more carbon the older the get up to at least 300-400 years of age (Keeton et al. 2011)." Regarding the second part, we think it is likely that this refers to true boreal forests as noted in our earlier bullet – if so it should be deleted as it is not relevant to NSF. If it is intended to apply to temperate (Acadian) spruce-fir forest a citation must be provided, though we do not believe this to be true.
- The Millar et al. (2007) citation on page 142 is not included in the References.
- Page 142: "*Active management is a critical component in assisting forests to adapt to climate change*." This statement is too strong, is made without foundation and implies

[5] Keeton, W.S., A. A. Whitman, G.G. McGee, and C.L. Goodale. 2011. Late-successional biomass development in northern hardwood-conifer forests of the northeastern United States. *Forest Science* 57:489-505.

that active management is necessary for climate change adaptation. As a general rule we do not believe this to be true. The Nature Conservancy's *Resilient Sites for Terrestrial Conservation in Eastern North America - 2016* analysis[6] indicates that the most resilient parts of the landscape are centered around large unfragmented natural areas which are primarily in public ownership. While there are circumstances where active management is necessary and beneficial, these are mostly related to correcting the effects of past human actions[7]. We suggest this statement be altered to: "In certain circumstances active management may be beneficial in assisting forests to adapt to climate change."

- The section should include a clear statement that carbon sequestration is maximized in unmanaged forests, even when long-term storage in harvested wood products is included (Nunnery and Keeton 2010).
- We agree with the statement on page 142 that "*Not all uses can be maximized simultaneously*." If maximizing carbon sequestration were the sole goal then the entire forest would be left unmanaged. However, this concept needs to be expanded. The section does a good job in highlighting management actions that have a positive impact on climate change (such as extensive reserve designation and management for high-volume mature forests). However, it also needs to discuss where tradeoffs are being made between carbon sequestration and other benefits. Actions that have negative climate change impacts (such as clearcutting mature forest, allowing ATV use or biomass removal for low-efficiency end uses) should be noted so that readers can better evaluate the tradeoffs.
- Objective 1 should include a strong commitment to significantly and continuously increasing carbon sequestration in the ASTM. Forest carbon storage can easily be calculated from forest inventory data and this information should be a core part of the long-term monitoring program.

## Control areas

We were glad to see the restoration of language dealing with control areas and the commitment to establishing these areas in the near term. Once they are established they should be included in a revised plan made available for public comment, perhaps in 2020 in conjunction with other revisions related to forest inventory and sustainable harvest levels.

Regarding the inability to establish a lowland spruce-fir control area at the recommended 1500 acres – we believe you should commit to this even if a contigous area of spruce-fir of this size is not available. Low-elevation softwoods have been seriously depleted by past harvesting and you should not be limited by the current condition of the forest. This control area should be considered a restoration project.

The New Hampshire Wildlife Action Plan habitat type data shows an area of about 540 acres along both sides of Nash Stream near the lower end of the Trio Ponds Road (see attached map). This data is based on potential rather than current habitat and thus provide a good core for this control area. This area should be expanded to include adjacent or proximate areas of mixed

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[6] See http://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/resilience/Pages/Downloads.aspx.

[7] Examples include restoring a more natural condition to western forests following a century of fire suppression, restoring stream connectivity on poorly designed roads and controlling exotic pests.

forest, hardwood forest with significant spruce-fir regeneration, and other areas with the potential to increase their softwood component as succession proceeds (such as the areas in this vicinity shown as "Other Group II Soils" on Map 3). We don't believe it is necessary to have an area that is currently 100% spruce-fir stands – rather you would have an area with a core of softwood type encompassed in a broader area of mixed or potentially mixed stands. Such an area would provide excellent opportunities for research and monitoring on the long-term development and restoration potential of this forest type.

**Biomass harvesting**

The use of biomass for energy generation is a complex and controversial subject. The statement on page 98 that "*Biomass is considered a 'green' fuel because it is a renewable resource"* is too simplistic and comes from a source devoted to promoting biomass energy. The reality is that the "greenness" of wood biomass is highly contingent on what material is used, how it is used and the time frame over which one considers the benefits and costs. This needs to be acknowledged in the discussion – a flat statement that biomass energy generation is carbon-friendly is unacceptable. An excellent and concise summary of the science is provided by Gunn (2017)[8], who states, "*…low-grade wood derived from forests can play an important role in many energy contexts (especially thermal.)*" However, he also states, "*The unconstrained production of biomass energy without accountability for what type of wood is used and how the material is harvested can lead to emissions in excess of the fossil fuels being replaced*." Mika and Keeton (2013[9], 2015[10]) provide more detailed analyses of the carbon flux implications of wood bioenergy harvests in the northeast.

Factors which make biomass more "green" include:

- Use of waste material (tops and limbs), the carbon from which would return to the atmosphere over a relatively short period (10-20 years).
- Use of material for the most efficient end use – thermal uses (especially high-efficiency burners) are much better than using it to generate electricity, with co-generation better still.

Factors which make biomass less "green" include:

- Use of solid wood material which incurs a much longer "carbon debt" and which would continue to sequester carbon if left unharvested.
- Use of material in less efficient ways. Centralized low-efficiency electric generation (such as the Burgess plant) is the worst possible use of this material.

We believe the following guidelines should be included in the plan. These guidelines are intended to limit biomass removal and direct it to the most efficient end uses:

- Biomass shall only be removed during tending harvests. No biomass should be removed from clearcuts or other heavy harvests.

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[8] Gunn, J.S. 2017. Woody Biomass Energy Emissions: We Still Need to Do the Math. *Forestry Source* Vol. 22 No. 9, Page 23.

[9] Mika, A. and W.S. Keeton. 2013. Factors contributing to carbon fluxes from bioenergy harvests in the U.S. Northeast: an analysis using field data. *GCB Bioenergy* 5: 290–305.

[10] Mika, A. and W.S. Keeton. 2015. Net carbon fluxes at stand and landscape scales from wood bioenergy harvests in the U.S. Northeast. *GCB Bioenergy* 7: 438–454.

- Biomass removal should be limited to limbs and tops to the greatest extent possible. If solid wood is removed for biomass, it should only be sold for higher-efficiency end uses (primarily thermal).
- Biomass harvesting shall follow the guidelines set forth by the Forest Guild[11].

**Harvesting systems**

The plan includes no information on the type of harvesting systems and equipment that should be used on the forest. We strongly urge you to include guidelines that would give preference to the use of lower-impact processer/forwarder (cut-to-length) systems over feller-buncher/grapple skidder systems if contractors are available with this equipment. In recent years AMC has moved to exclusive use of a cut-to-length system on our Maine lands and we have been exceptionally pleased with the results. While cut-to-length systems are more expensive and have lower productivity (thus providing a lower return per unit harvested) they are superior in every other way. Benefits include:

- Lower ground pressure (this may be particularly important on more productive deep fine-textured soils susceptible to compaction).
- Much lower levels of soil disturbance (no dragging of logs on the ground).
- Much lower residual stand damage.
- Narrower skid trails.
- Minimal area needed for landings.
- Ability to operate on more sensitive soils that might suffer unacceptable disturbance from a feller-buncher system.

The plan should include guidance on the different types of harvesting systems that might be used on the forest and the conditions under which use of each type is appropriate.

**Forest certification**

We offer no opinion on whether the state should pursue certification. AMC's Maine lands are FSC-certified and we have found this to be a valuable tool for identifying areas where our planning and management can be improved. However, it also requires a significant commitment of both financial and staff time resources. Given the financial and staffing constraints currently faced by the Nash Stream Forest managers it seems as though certification may not currently be the best use of these limited resources. If the state does pursue certification for the Nash Stream Forest it is critical that the necessary resources are available above and beyond those needed to carry out more pressing duties such as inventory, planning, monitoring and oversight of management activites.

**ATV use**

Our comments on this issue are being submitted jointly with SPNHF and TNC in a separate letter.

[11] Forest Guild Biomass Working Group. 2010. *Forest Biomass Retention and Harvesting Guidelines for the Northeast*. Forest Guild, Santa Fe, NM.

**Other comments**

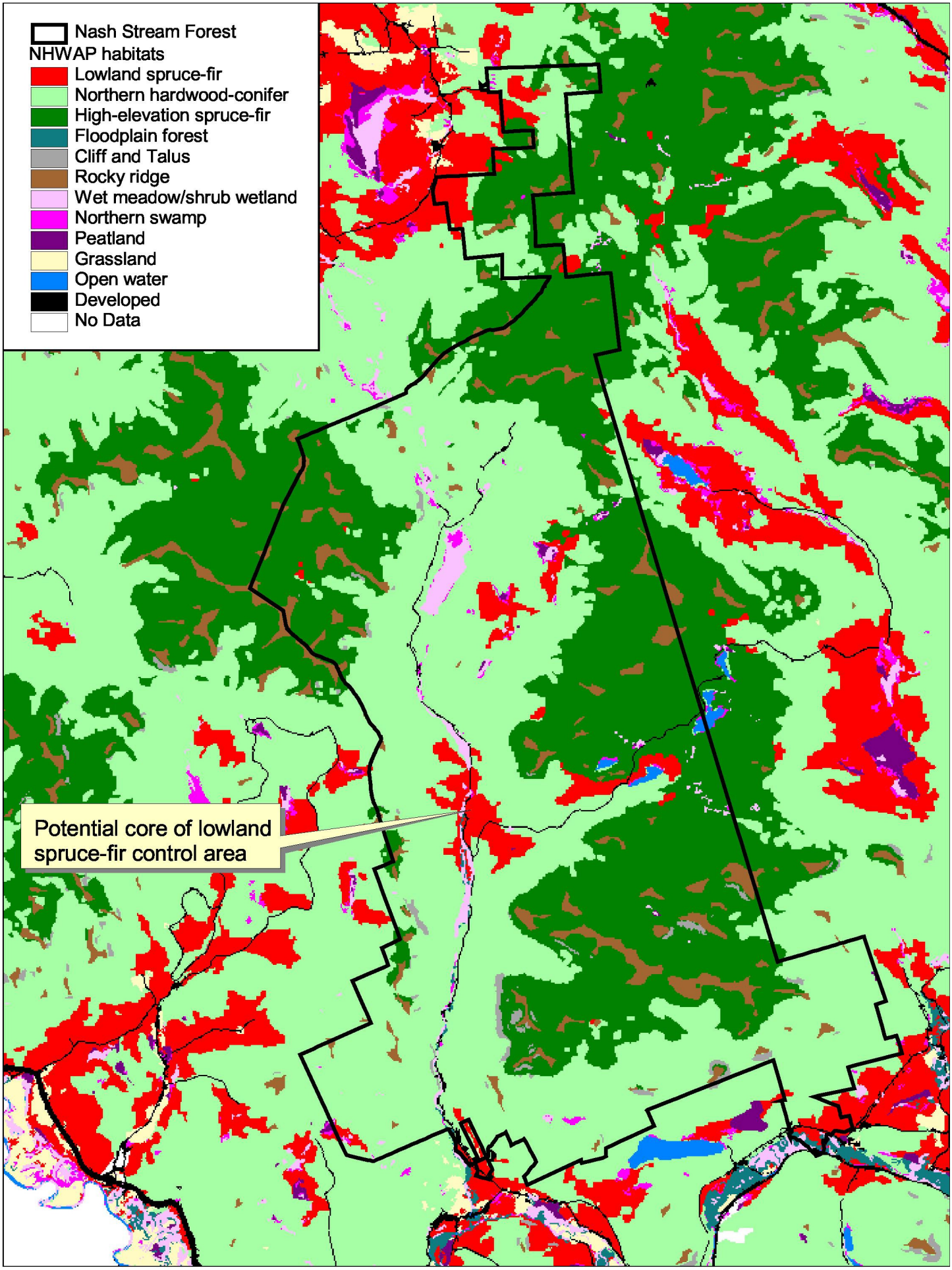
We find Figure 12 (page 104) to be confusing and unnecessary for the following reasons: 1) We could not access the web site listed as the source; 2) The x-axis appears to be incorrect (should it be decades rather than years?); 3) a graph is not necessary to demonstrate that more productive soils produce more volume – this is the well-accepted basis for many site classification systems; and 4) The graph presents a misleading picture of even-aged forest growth – stands do not deteriorate and stop growing but continue to accumulate volume though at a slower rate (per Keeton et al. 2011). We suggest deleting this figure and all text following "Figure 6 [sic] shows the growth trend…".

There are a number of figures and tables that are not numbered, and some references to figures and tables in the text are incorrect. These need to be checked and corrected where necessary.

We thank you for the opportunity to comment on this draft and look forward to continuing our engagement in the management of the Nash Stream Forest.

Sincerely,

David Publicover, D.F.
Senior Staff Scientist


Nash Stream Forest
NHWAP habitats
Lowland spruce-fir
Northern hardwood-conifer
High-elevation spruce-fir
Floodplain forest
Cliff and Talus
Rocky ridge
Wet meadow/shrub wetland
Northern swamp
Peatland
Grassland
Open water
Developed
No Data
Potential core of lowland spruce-fir control area