SILVICULTURAL ADVISORY COMMITTEE
Field Trip: August 26&27, 2014

The 2014 field trip included one tract, Scopan, which has been a part of numerous times on these meetings, and first-time visits to four smaller parcels. The group met at the Town of Portage's picnic area for lunch and introductions, then headed out on the dusty woods roads. Topics addressed in the field were second (and third) BPL entries, post-harvest evaluation of outcomes, and of regeneration success, management of even-age cedar (and of cedar in general), dense young fir when spruce budworm is on the horizon, and various issues in hardwood management including sugary development, and appropriate harvest technology.

The following people were present:
As of this year, the State Forester has become a member of the committee.

Committee members:	Si Balch	Doug Denico
	Bill Leak	Kip Nichols
	Bill Patterson	Jim Runyan
	Bob Seymour	
Bureau staff:		
Eastern Region	Adam Blanchard	Terri Coolong
	Tyler McIntosh	Rocco Pizzo
	Doug Reed	Chuck Simpson
Northern Region	Chet Condon	Marc Deschene (evening & day 2)
	Ed Dube	Jacob Guimond (day 1 only)
	Don Kidder	Vern Labbe
	Randy Lagasse	Dave Parent
	Dave Pierce	
Western Region	Jeff Bartley	Matt Foust
	Frank Henry	Eric Hoar
	Pete Smith	Steve Swatling
	Ben Webb	
Augusta	Tom Morrison	Joe Wiley
	Tom Charles	

Sampling of discussion items (due to group size, not all were picked up)

Tuesday, August 26

Stop #1: Second/Third Entry in Modest Quality Stands
The southerly of the two Nashville original public lots covers 320 acres and is all forested except for a couple acres of wetland. An extensive harvest in the early 1980s removed mainly softwoods, and was probably in response to spruce budworm damage. A limited second entry in 1998 worked mainly in hardwoods, with 520 cords harvested. The 1997 prescription recommended a partial overstory removal about fifteen years later, dependent on what a re-examination of the lot revealed.
Though the lot is about half softwood type, the questions mainly concerned stands of modest quality hardwoods, with diseased beech and dying-topped red maple the most common species. Randy, the prescriber, noted that there was a higher beech component farther up the hill; where we stood the mix was mainly red and sugar maples with some yellow birch, beech, and hophornbeam, with 5"+ basal area of about 100 sq.ft. This last species indicates that the site was

relatively fertile. There was also a small patch of fir saplings/small poles. Si asked what our objective would be for this stand, the response being high quality hardwoods plus spruce and fir wherever it could be nurtured. The draft prescription calls for multi-aged management for sugar maple and yellow birch, with a selection/improvement/partial OSR harvest targeting mainly beech and red maple. Bob wondered what this stand had looked like prior to the last harvest, and Vern said that it had not been entered in 1998. It is likely that an HS stand had been gleaned of spruce and fir in the 1980s cut.
Both Jim and Si asked why this stand needed treatment now, and Vern noted that our prescriptions covered a fifteen-year period, and a recommended harvest might be timed for the latter half of that period, preceded by a walkthrough to check on conditions. Vern added that this lot had good access and was convenient to all-weather roads, and could make a good short-term operation at the tag end of a harvest season. Jim asked what would need to change for a harvest to be warranted. Si thought that adding some diameter to both the overstory and the sapling understory would be desirable. Randy mentioned the red maple dieback, with several dead-topped ones nearby, and one nearly dead example. Several committee members said that small patches centered on the lowest vigor overstory would be appropriate, especially when the at-risk sawlog quality trees could be captured. Kip noted that we tend to get back what we cut, so patches should seek to release sugar maple and yellow birch saplings. Doug added that while there may be several good ways to handle a stand like this, there is seldom a clear best way.
--Key Comment, from Kip: You get back what you harvest, so plan the harvest in light of that.

Stop #2: T13R5, Harvest Plus Five Years – BPL Evaluation Protocol

This 966-acre original public lot was treated during the late 1980s-early 1990s with about 4,000 cords harvested, then again in 2008 and (mostly) 2009, yielding about 5,500 cords. The first entry took about 60% hardwoods, the second 50-50. There was also a significant harvest in 1978 by the abutter who at that time still had the timber and grass rights to the Public Lot, with mainly budworm-damaged spruce and fir cut. The most recent harvest was done using a fellerbuncher-processor-forwarder combo. The discussion here centered on our post-harvest evaluation process, and evaluation of regeneration success, this latter having been triggered by a corrective action request under SFI Objective 2: *Forest Productivity, Performance Measure 2.1: Participants shall promptly reforest after final harvest, Indicator 3: Clear criteria to judge adequate regeneration and appropriate actions to correct under-stocked areas and achieve acceptable species composition and stocking rates for both planting and natural regeneration.*

Given the abundance and reliability of natural regeneration in Maine, this CAR drew some surprised comments from committee members, and a request for the above SFI language. As Vern and Tom C. described the CAR and our response, we were asked what the "adequate" standard was. Tom C. referenced a study reported in the 1990 conference on natural regeneration that showed, for black spruce, any milacre stocking of seedlings of 40% or more resulted in a fully stocked stand by age 40. Vern added that our prescriptions include a subjective description of regeneration stocking (inadequate/Adequate), with "Adequate" intended to allow for a 15% loss during harvest, and our inspection forms have a line for recording whether or not regeneration had been unduly harmed. Areas flagged for a later regeneration survey, pending post-harvest review, would be those with "Inadequate" listed on the Rx or with undue damage on the inspection form, but only for stands in which regeneration was a prescribed objective. Si suggested that we add a "Regen: Y/N" to our "Inad/Adeq" line. He added that there was a "schism" in post-harvest surveys, with a soon-after-operation look at BMP effectiveness and whether the Rx had been followed, and any regeneration survey coming 5, or perhaps better, 10 years post-cut, and that the survey should be limited to stocked/nonstocked on each milacre plus the dominant species on the plot. All agreed that we

essentially always get regeneration, the question being whether we get the species we want. Si's rule of thumb for partial cuts for regeneration was that if more than 50% of the overstory was removed, both tolerant and intolerant species would regenerate, and if less than 50%, only tolerants. Our experience (others, too) is that the farther below 50% of overstory removed, the more likely beech will dominate regeneration.

In the woods we waded through patches of dense regeneration with a few open areas in between-trail pockets where no overstory had been removed. Upon questioning, Dave P. said that the Rx was to lower overstory basal area from 85 to 60 sq.ft., and his 4 BAF 10 check plots came out at 65. Jeff asked whether regeneration from the 2009 cut was actually needed, as obviously there had been some established by the circa 1990 treatment. Dave answered that his assessment here was limited to seedlings released/established by the 2009 harvest, and that gaining regeneration was always desirable in harvests of multi-aged stands. Bob added that it was also important in such stands to check later and see if the desirable seedlings had graduated into the sapling class and beyond.
Key idea:
--Regeneration success should not be judged earlier than five years post-harvest, and ten years may be better.

Stop #3.1 Salmon Brook Lake Bog (SBLB) – Cedar Management, Public Expectations
This 1,857-acre tract was acquired from The Nature Conservancy in 1993, using Land for Maine's Future funds, and includes a MOU with TNC for consultation on management decisions. It is centered on the features for which it is named, the lake and bog being central to an ecological reserve of 1,055 acres. Only about 40% of the overall parcel area is considered to be regulated forest, and significant portions of that had been cut heavily in the 1970s-80s prior to TNC acquiring it. This harvesting has soured many town residents on the thought of the Bureau ever harvesting here. Though the lake is very shallow, it yields trout to those who know how to find them, and is Perham's main "fishing hole." Longtime access to the lake was blocked in recent years after sale of the private property over which that access passed, creating some controversy. After considerable time spent working with differing factions, advocates and opponents, the Bureau has established a trail leading to the lake from the nearby rail-trail, allowing foot, ATV, and wheelchair access to the water.

The group walked onto the boardwalk section of this new trail to where it passed through a dense mid-age cedar stand with a sparse overstory of spruce and tamarack. As this area is within the ecoreserve, it will not be harvested but served as a far more easily accessed proxy for a similar (somewhat bigger cedar and denser stocking) stand to the southwest which is regulated forest and beginning to come apart. A question about stand age yielded a guess of about 100 years, somewhat younger than the stand to the southwest. Vern asked about methods for regenerating cedar, as harvests often result with majority fir and only a small cedar component. Bill Leak said that data on cedar shows that its seedlings can be overtopped by fir if the stand is not opened up. Vern suggested harvesting only the machine trails with no tending between, and added that some of our largest cedar stands lie within habitat management agreement lands where the directive from DIFW is usually to cut no cedar – no management equals no cedar regeneration. Jeff said that patches 2-4 acres have had good results at Little Moose. Bob said that as part of his study of cedar, Maibec set aside all fully sound tree-length cedar (there were rather few), and most had cores showing a considerable period of suppression. He believed that when deer range expanded northward, cedar regeneration became sparse or absent, and added that we should just do a thinning without being overly concerned about regeneration, as cedar's persistence offers many future opportunities. Randy said that partial cuts in cedar often resulted in considerable branch breakage on the residual. Kip said that cedar regeneration appeared better near the edges of clearcuts rather than in the center, and that ring width often showed 50-100 years of slow growth followed by an extended period of better increment. Bill P suggested that fir regeneration should not be

too big a concern in this kind of stand, that cedar's longevity would keep it around and ready to react when the fir was ready to be cut. This discussion then turned to ecological reserves, Joe noting that the baseline-plus-ten inventory had just been completed and MNAP hoped to have the report out this coming winter. A related topic, RTE plants, brought agreement that harvesting in dense cedar is often useful or even necessary in perpetuating some species.
Key idea:
--Take advantage of cedar's longevity, which can offer multiple opportunities to regenerate the species, and plenty of time to harvest the fir.

Stop #3.2 Salmon Brook Lake Bog (SBLB) – Even-aged aspen-fir

This stand featured mature aspen and fir, some of each having fallen out, with patches of fir regeneration and a mid/understory of 3-4" dbh fir of the same general age as the overstory, which was estimated at about 80 years. Our experience with such fir has not been good, as their long suppression as tended them toward internal defect. Tom C. said that the future for fir is in the seedlings and smaller saplings. Jacob's question was about the best way to regenerate the stand. Bob asked what was desired, Jacob responding that aspen was fine. Bob said that taking up to 90% of aspen while leaving aspen as reserves would move the area away from an aspen dominated overstory. Our experience with "heavy selection with reserves" at Nahmakanta suggests that aspen will sprout heavily after such treatment, but those cuts are barely over ten years old so the jury is still out. Jacob brought up public concern, related both to the hiking trail on which we walked in and the general distaste for timber harvesting that resulted from the cut-and-run tactics of the most recent harvests. Vern thought that establishing grouse patches, with appropriate signage (which might include wildlife management for a broader suite of species), would allay the angst, and Si recommended "Purina patches" but added (tongue somewhat in cheek) that we not show off the airphotos post-cut. Steve noted that IRP doesn't allow non-buffered harvests along marked hiking trails, but thought that having this be a demonstration area, with proper communications on site, could pass muster. Kip suggested painting aspen to a height limit, tasking out the tallest (and usually most blowdown-vulnerable) trees, and retaining some untreated acres. Tom C. wondered about George Ritz's "Duck Lake Mohawk", where machine trails were made at sufficiently wide spacing to leave an unentered strip (no lagging off the trail) of 20-30 feet. The second entry, 10-15 years later, went down that leave strip, the result being a good quality pine-aspen stand. Joe added that a treatment cutting aspen should be done during leaf-off if we wish to have aspen, so sprouting will be maximized.
Key idea:
--Several different harvest strategies were proposed and none received full support, but for this tract and its recreational use, explanatory signage would be important.

Stop #3.3 Salmon Brook Lake Bog (SBLB) – Dense even-aged fir/spruce

This stop in a sapling and small pole stand of nearly pure fir was made for a couple of reasons. One concerned what to do here, a second was that we had considerable acreage in stands of similar sized trees, but with sufficient spruce that a precommercial or commercial thinning could move the stand to mainly spruce and also enhance/sustain deer winter cover. Overlaying both questions was the potential return of budworm, and the experience of thirty-odd years ago when PCT stands got heavily damaged when bug populations were high. Most thought that this particular patch was too old for PCT, with most trees 2-4" dbh and some 6". Vern said that Irving was doing some PCT in similar stands but asking the crews only to sever the trees, not laying them down but expecting snow and time to bring them down a t no cost. There were also some taller aspen plus a few older fir residuals, and the recommendation was to ignore them. Bob said we should spend any PCT or early commercial thinning in stands where we can get a significant shift toward a spruce majority, and that stands like those we were visiting were not

worth spraying. He added that budworm would probably not devastate a stand like this, but might function as a thinning from below by killing the weaker stems. Kip asked about biomass markets, which would enhance the chances of early commercial thinning. Unfortunately, there is only one within economical distance and it's getting more than it needs already. Joe said this stand was at the point of growing out of high quality hare habitat, that spacing to 6' by 7' (or 6x6) was best for deer, and replying to Rocco's "what would you do?", said to let the budworm thin here and then do a crop tree release if needed. Vern noted that full crowned spruce and fir like those resulting from crop tree release were magnets for deer, especially bedding cover. Kip said the Growth Impact Study plots measured and evaluated annually during the last budworm epidemic showed clearly that mixedwood stands fared better than softwood types. He added that a Quebec study of PCT and budworm showed that arrival of high populations within three years of the brushsaw work led to heavy damage, but if the trees had five or more years post-treatment they were much less vulnerable.
Key ideas:
--Spend any PCT or early thinning dollars in stands where the treatment will move the composition toward a spruce majority.
--Avoid early treatments which leave composition heavy to fir if budworm is anticipated in less than five years.

Evening "Program"
Unlike last year when I sat and took notes while Will Harris and Tom M. did the presenting, Tom and I stood and shared the presentation. Thus my note-taking was considerably limited compared to a year ago. The session covered two topics, the Bureau and spruce budworm, and a return to the proposal to raise sustainable harvest level (SHL) for a gradual 1.5 cord per acre drawdown of inventory. This time we presented a draft response to the concerns raised in a letter from our legislative committee following the discussion on this topic last March.

The budworm discussion included inventory data showing the Bureau's spruce-fir resource to be nearly three-quarters spruce, overwhelmingly red spruce, compared to a 3-to-2 ratio of spruce to fir statewide. Several committee members thought that we were in a good position due to that spruce dominance, even though our high overall stocking meant that we also had a bit more fir per acre than did the state as a whole. Data for our seedling-sapling stands showed that the species mix of trees under 4" dbh was heavy to fir, especially in the North, while the larger of these younger trees had significant stocking in fir, spruce and pine. Bob noted that the vast majority of our size class one stands were not of Bureau origin, and cautioned against lumping all acres together when considering fir and budworm, as the tree is different – hardier, longer lived, faster growing "west of the Kennebec." The field staff knowledge of the landbase plus point data from the recent inventory have given the Bureau a good handle on where much of the larger fir is located. Harvests have targeted these areas, and that targeting could be intensified if conditions warrant.
--The take home message seemed to be: given the spruce-heavy character of the Bureau forest, our attitude should be concern but not panic.

The session on SHL took the majority of the two-hour meeting. It opened with a slight side trail, determining the portion of biomass harvest volume that should be included when comparing harvests to SHL. The net growth estimates were made using an inventory that took stem volumes only to the 4" diameter level (and larger on trees with form or defect that would prevent processing to that size.) Thus biomass from limbs and tops would be fiber not included in the net growth calculations and should not be included in harvest-vs.-SHL. The Bureau had done some estimates of the biomass proportions, with "SHL share" of about 30%. Si said that

measurements of piles during the 1980s came to near 50-50, and Doug D. added that monitoring of several hundred thousand cords of biomass when he was in the private sector resulted in a 40% share allocated as SHL wood, though at times it would be closer to 30%. Based on all three estimates, the 40% figure is proposed for use, and as Doug D. suggested, we can report biomass and roundwood separately.. Over the past 5-6 years, approximately 10% of the Bureau's gross harvest volume has been biomass.

When the talk came back to SHL, the first question concerned where the extra revenue would go, Si stating that the dollars would likely be the crux in decision making. Tm M. noted that, given current prices (including the additional dollars per cord resulting from the extra staff work of CLS sales), harvesting 180,000 cords per year would be sufficient to fund more than the Bureau's current programs, though there are potentially other management activities that could enhance the land's values to the people of Maine. Bob brought up the FSC standard concerning SHL, Indicator 5.6.b, which reads: *Average annual harvest levels, over rolling periods of no more than 10 years, do not exceed the calculated sustained yield harvest level.* This had also been cited by others when the proposed SHL increase went public last year. When this subject was addressed during our November 2013 surveillance audit, the auditors were of the opinion that a relatively small and planned reduction in inventory could be acceptable, basing their opinion mostly on the "Intent" and "Guidance" language related to the indicator. Bob said that acceptance would probably hinge on a particular audit team's opinion, and a different one might raise objections.

Specific to the draft response to the legislature, Bob said that our stated assumption that net growth remained relatively similar over a range of stocking levels had been discredited by past research, and that maximum net growth in managed stands would come with stocking higher than our current 23 cords per acre. Si agreed and estimated the top end coming at closer to 30 cords. Not mentioned (I only thought of it while writing this) was the probable trade-off between growth per acre and growth/value of individual trees as stocking approaches that maximum-growth range. Bob added that our letter should address the inevitable changes in harvest control, less marking and more designation or criteria, that would be needed to harvest the greater volume with current staff numbers. Si added that "sustainability" wasn't the issue, that a landbase could have sustainable harvests whether stocking was ten cords per acre or 23, though the forest character and harvest level would differ.

Bob then recommended that we manage to allow a slow inventory increase toward the stocking level where net growth is no longer increasing with added volume. Doug D. cautioned that we shouldn't grow inventory to the point where mortality is a problem. Si said that he had not seen, today or on previous SAC field trips, any "real" mortality, that beyond the occasional tree here and there or from natural stem exclusion. Bob said that models generally underestimate mortality, but that it remains less than one-third of net growth on most lands, and recommended that our upcoming typing/modeling project include species and product detail in the projections. He thought that it was important to understand the dynamics of our forest, and that while we could get net growth from periodic inventories, determining amount and effect of mortality and ingrowth required repeated measurements of permanent plots. Therefore, returning to the financial side, he recommended that some of the additional revenue be used to establish, maintain, and remeasure continuous forest inventory (CFI) plots. (This particular discussion continued among four of us the next morning as we traveled to Scopan. Bob described the scheme used at the Baxter SFMA, noting that the establishment and initial CFI measurements there had been contracted out at a cost of about $300 per plot.) Doug D's final comment looked at the proposed reduction of 1.5 cords over 20 years: "I know a problem when I see it, and I don't see it here."

Some key items from this second subject:
--Finances may drive the final decision on SHL.
--Some FSC auditors might object to the inventory drawdown, citing the indicator noted above.
--Net growth increases with increased stocking, possibly until volumes approach 30 cords per acre.
--Establishment of a CFI network is recommended.

Wednesday, August 27
In the morning we headed south to Scopan, arriving at Day 2's first stop in about 45 minutes.

Stop #1.1 Scopan: Potential Sugarbush

The Northern Region has received numerous inquiries about sugarbush establishment, with most showing interest in this unit, and hopes to have a project ready for a bid this fall. One consideration, for all commodity management, is that there is heavy use by motorized recreation year round. Also, most of the prospective sugarbush acreage, about 300 acres, lies within the area identified in the management plan as potential ecoreserve. Vern has walked this with Andy Cutko of MNAP to discuss appropriateness for this location. Andy thought that the core values for which ecoreserves were designed would not be significantly affected by tapping, that ecological processes would continue naturally despite tap holes and tubing. Bill Patterson asked if all the 300 acres was suitable for sugaring. Vern said yes and noted that there was considerable area in the appropriate forest type outside those acres, though also in the potential ecoreserve.

The group walked up to the base of the steeper ground, near the line where an ecoreserve would begin, but not actually in the area under consideration for a sugarbush. Jim asked about the financial arrangement for a sugarbush lease. Vern said that the bids would be as a per-tap price, that he was planning for a sugary of 5,000 to 10,000 taps with about 60 taps per acre. Si asked who would count the taps. Pete said that his region wasn't there yet, that the one lease at Sandy Bay was still in process of getting up to the final tap numbers, and that a sampling scheme would be the way to check on numbers. Bill Leak wondered about the respective values of sugaring versus timber. Our calculations put the break-even point at about $0.60 per tap, somewhat higher for the very best sugar maple sites. It could also be higher if stumpage from a culturing harvest were included in sugary value, but Vern does not plan such treatment here. If lease acres became significant, several thousands, it would change the Bureau's SHL as those acres were removed from the timber basket. Doug D. said that newer contracts had prices at $1.00-$1.25 per tap (The second sugary bid at Sandy Bay came up to this range), that we should not sell for $0.60, and on this type of semi-enriched site we should be aware of sap yields and sugar content, which may be impressive here.

Talk switched to which trees were suitable for tapping. Most medium/large sugary operators tap only trees 10" dbh and larger, and use one tap per tree as multiple taps result in a lower per-tap yield but cost the same as the first one. Thanks to reverse osmosis, gross sugar percentage is less important than before, and among other changes, red maple is treated much the same as sugar maple. Bill Leak opined that he'd prefer to tap red maple, as any decrease in yield would be more than offset by having the tap hole defect occur in less valuable timber. Vern noted that Eagle Lake would be the tract for large scale tapping of red maple. The idea of stand culturing came up again. Bill P. suggested we cut the ash (common at the stop site) now due to emerald ash borer, but Joe said he'd been at a meeting that addressed EAB where the advice was to hold off liquidating ash until the critter was confirmed within 10-15 miles. Bob thought that any

future culturing could be timed with the tubing replacement interval, generally about twenty years. Steve wondered if we might designate and mark 5-10 veneer potential trees per acre, to be harvested during a future culturing. Folks thought that to be a good idea, and Adam noted that there was a market for "tapwood", as a novelty product, so that any tapped trees which might be desirable to remove might have a valuable use. Bill P. said that TNC is considering up to 40-60,000 taps on its St. John property. He added that some syrup producers recommend taking out all spruce and fir, the aim being to cut down the red squirrel population and thus reduce gnawing on tubes. Others disagree, both because moose are the main destroyer of tubing, and because species diversity is good for sugary health. Bob thought that 20% non-maple was a good mix, and Pete said that level was in MOFGA rules, and was being incorporated into Bureau leases. Kip asked if the leases would require gating for infrastructure security. Vern answered that it would have to be looked at case-by-case, and that one of the attractions of this area was that we already had a gate to keep ATVs away from inadequately hardened trails, though kept open in winter for snowsleds. Bill L. thought the area where we stood was an ideal stand for regeneration through high-end group selection patches. Overall, there was less, though some, concern for the timber value trade-off here than there had been at Lincoln Plantation the year before.

Key ideas:

--Be sure the per tap lease rate keeps up with market prices.

--Consider leaving a modest number per acre of the top veneer potential sugar maple, for removal during future culturing harvests that occur at tubing-replacement times.

Stop #1.2 Scopan Selection Harvest in Good Quality Hardwood and Mixedwood

Don introduced this area as one on which repeated light harvests, often improvement cutting, had occurred over the past 30 years. An experienced but new-to-BPL contractor (Paul Nadeau) was doing the work under a contract for logging services (CLS), using a fellerbuncher-processor-forwarder sequence. Don described the method as being mainly small patches, usually 0.1 to 0.25 acre centered on beech, with minimal off-trail tending. He said that the beech component, which is heavily damaged and of low vigor here, was reduced from 40% of stand basal area before this entry to about 5% after, those residuals being the beech with the fullest crowns. Doug R. asked about ground applied herbicide, as was seen in 2012 at Seboeis. Don said that was a possibility, and folks discussed the appropriate time to do so. Dave Adams, who had done the Seboeis application, said that 1-2 years post-harvest was best. Marc D. added that if the beech regeneration gets up toward 10' tall, it's too late. Chuck noted that he had tried to get Dave for some work last year but the applicator was fully booked.

As we walked through the harvest area, Don noted that patches were fewer where sugar maple had more of the overstory, and that the overall job was averaging 11-12 cords per acre. Trail spacing was at 80 to 100', and measured trail width averaged 13', meeting the goal of having no more than 15% of total harvest area in trails. Chuck said that Dave Adams liked treating patchcuts if they were big enough as efficacy was good. These patches were smallish, but Vern though there would be enough spray acres, all on existing trails, to make a spray contract feasible, even with skipping of those patches with tall regeneration and/or high component of desirable non-beech. Logging contractor Nadeau said that he had cut all saplings (with no extra compensation) when harvesting in similar stands for another landowner, and eight years later had seen mainly sugar maple regeneration. Paul's foreman recommended that we locate all the patches, and if the object was to reduce beech, the patches should be centered on beech (as Don had described), adding that if the operator chose locations, he would likely cut a patch at 250' intervals for efficiency, with little regard for species. Jeff suggested that the FB could strategically lay down the wood such that beech was crushed, though Paul thought that cutting

the saplings worked better, that beech would come back but be outrun by the sugar maple. Bob thought that managing the overstory on this area was more important than establishing new regeneration. Elsewhere he had tried skidding in circles for added crushing, but the results were poor, though part of the reason may have been small patch size.
Key ideas:
--Where species being harvested is important, Bureau staff should locate the patches, as the operator is likely to establish them at regular intervals regardless of species present.
--Herbicide treatments of understory regeneration are best done within 1-2 years of their being released by a harvest.

Stop #2.1 Oxbow Public Lot – Public Use Road

After lunch next to the Aroostook River, we traveled a short distance to look at a recent harvest accessed directly off the main woods road that runs through the northerly edge of the lot. For this winter harvest, wood had been forwarded to off-road yards plus some directly to the road. The wind event of September 2013 initiated this operation, which also enhanced the opportunity to harvest some high risk and mature fir and aspen, including some from the narrow strip between river and road. Vern said the roadside yarding was technically against IRP language but that he considered it a non-issue here, with no adverse reaction at the time of harvest. The group thought both the harvest and yarding was fine, along with the work done to put things to bed.

Stop #2.2 Oxbow Public Lot – Blowdown salvage and selection

This public lot has had several entries over the past 30 years. Harvests during the late 1980s yielded about 5,000 cords, a small entry (500 cords) in 1997, then another 2,800 cords from a more southerly access point in 2012, this last area suffering some damage in the 2013 winds. The current harvest will be done by the same contractor whose work we saw at Scopan, with the same machinery, and includes creation of a new (and steep but well stabilized) northerly access road, which we used to drive toward the center of the lot. This harvest will salvage some of the blowdowns while doing a selection treatment on other acres. Vern was asked why the ditches were so deep, and he said that the harvest would be using it months after construction, rather than the preferred wait time of a year or more. Terri asked if the roadwork was paid for up front, the answer affirmative, and Vern added that they've been building about 16 miles per summer (accessing some winter wood as well) since the switch to nearly all CLS jobs by the Northern Region. He also noted that we were still learning the CLS "game", and were fortunate to be making the change in a time of good markets. Don said he had been marking hemlock during sale prep even though there was no market for the logs at that time. Then a mill in Bradford was buying, and he took advantage of this short-term opportunity by starting the harvest a bit earlier than had been planned.

Don said the blowdowns were patchy though significant on the public lot, but far more extensive on the abutting landowner. It also included damage on the nearby T9R5 public lot plus the private lands on that township. He was asked how the blowdown might have changed the prescription here, responding that the harvest volume will now be greater, with a lighter residual in the salvage areas than had been planned. Paul Nadeau and his Foreman Dale had accompanied us to this lot, since they will be moving here when done at Scopan, and they were asked about equipment choices for blowdown salvage. Dale said that a dangle-head processor works well but causes more damage to the regeneration by dragging trees through it, while the fellerbuncher works well with leaning or broken trees but has more problems "processing" those fully horizontal. He estimated that 30% of the salvage would be done by FB, the remainder by processor, with the latter handling all the fully uprooted trees. Si said that early thinnings could

bolster windfirmness for most stands, to where they might withstand wilds of 70 mph, and that such winds might become more common in a warming climate. He also noted that such early thinnings won't generate much revenue and would lower overall growth per acre for a number of years, and that growing big tall trees adds to blowdown vulnerability, though it offers other benefits.

Don said that the lot's forest was 68% mixedwood type with a broad range of diameters and species composition, and that he had designated the beech, hophornbeam, and fir for harvest, with other species individually marked. Terri asked if trails had been laid out by the Bureau, Don saying that he and Dale would discuss layout and spacing, and that the arrangement was working well. The operator felling the trees works with a Bureau-provided IPad for locating/recording trails, and would not work without it. Jim asked why we were buying the IPads rather than the operators. Tom C. noted that we were just getting fully into this technology and really liked the additional control it offered. Vern said that he had decided that it was better, at first, if the Bureau owned the devices and had contractors sign for their use. Should operators choose to buy their own (the Bureau's won't always be available to everyone), that would be fine. Joe said that the outcome was more important than the process, and that we should pick what gets things done right. Kip noted that Seven Islands is developing a "data policy", that they didn't want proprietary information going into someone else's machine. Bill P. asked about the IPad's advantages over a regular GPS unit, the reply being that it offered far more data storage plus a bigger screen. Vern said that our trail spacing tended to be wider than on most other landowners, and thus harder for operators to see from adjacent trails, and this technology has really helped in gaining the desired spacing without having field staff need to flag everything.

Si then asked why we were "here", why field staff had chosen this particular spot to stop and discuss. (We were in a multi-aged mixedwood area with considerable basal area in stems 12-20"+ dbh, but otherwise not especially noteworthy, though it had some fine large red spruce.) Vern said the wind event cost us some spruce we had wanted to retain and was leading us to enter, for salvage, areas we had planned to bypass this time. He noted that the prescription, written in 2008, had said that harvest of hemlock was unlikely as there were no markets for it. That brought the advice (from Si, I think), "Don't prescribe markets, prescribe silviculture." Chuck asked if this general part of the lot had sufficient windthrow to chase. Don said yes, because much of it had occurred in clumps of significant volume. Joe suggested we have a written decision protocol for evaluating whether to salvage, Tom M adding that such protocol be used as a starting point rather than the final arbiter because all situations cannot be anticipated. Joe thought he same sort of decision tree would be appropriate for budworm protection, Vern wondering if we could look at the New Brunswick SBW protocol. Steve suggested the following salvage protocol: Positive revenue, yes; negative revenue, no; break-even or nearly so, go to next criterion (visual? fire danger? Sanitation?)

Bill Leak asked how extensive harvesting was in the original prescription, Don replying that 420 acres of this 680-acre mixedwood type had been the planned harvest area, with selection the planned system. Bill thought that it would also act as an improvement cut, which is valid for many BPL selection harvests. Vern said that during the 2013 audit the auditors had asked how we chose which compartments to examine. In the Northern Region about 80% of compartments have been prescribed twice during the past 30 years, and some three times. The other regions have had substantial recent acquisitions and are not at that level of coverage yet. The North is now working on a 30-year "SHU prescription" for N2, which is centered on the Eagle Lake Unit, thus covering two Rx cycles on a landscape basis, and including a road plan and tentative budget. Steve asked how long it would be until the region's management road access was completely in place, Vern estimating another ten-plus years, that the main roads were in place but construction

of side branches remained. Steve added that the public generally approves highly of gaining access to their land, and that all summer roads are generally left open except where they serve as trails (or where closure is required by statute.) Getting back to the prescription and harvest here, Bob cautioned that we not cut all the not-at-risk wood along with the blowdown. Vern said the wind had altered where we would cut, but outside of the fallen trees, not what we would cut. Si then said we ought to do more signage concerning our harvests – we do almost none at present – and that "Most Recent Harvest – 20XY" would be sufficient, with stick-on numbers used for the final two digits to save expense. He also suggested that my notes include a "What did BPL hear; what did we learn" section, which I've tried to include for each section. Then several people, committee and Bureau both, asked that the notes be provided much closer to the time of the field trip, before too much was forgotten, a valid critique.
Key ideas (for both Oxbow stops):
--Don't prescribe markets, prescribe silviculture.
--Signage at harvest locations is recommended, particularly in high visibility areas.
--When conducting salvage harvests, avoid adding not-at-risk trees to the cut.

The 2015 field trip should be in the Eastern Region. If there were any committee comments on what they would wish to see there, the note taker did not record them. However, the 2012 trip to the East was, except for the Machias River red pine, all in the westerly portion of the region, and the eastern part hasn't been visited since 2006.