

Annual Monitoring Report Summary  
Downeast Lakes Land Trust,  
Farm Cove Community Forest

2009

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September, 2010

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## I. Introduction

Downeast Lakes Land Trust (DLLT) periodically monitors its forest to ensure that its management objectives for wildlife, recreation, timber production, and environmental protection are being met. Some items, such as the inventory of standing timber, are conducted periodically. Others, such as monitoring timber harvest operations, may be conducted on a weekly basis as operations are ongoing. This annual report summarizes the monitoring information for members of the land trust, members of the local community, and for others interested in the results of DLLT's management. This is the second annual report to follow this format. For more information on DLLT's forest management, please contact the land trust. The monitoring update includes annual summaries for the operating year December through November, beginning with the 2009 operating year in December, 2008 when the winter harvest began. (In some years, winter harvest may not begin until January; in these years the operating year will match the calendar year). Periodic monitoring data that are updated every 5-10 years are included in Section III.

This report covers the 27,080-acre Farm Cove Community Forest as acquired by Downeast Lakes Land Trust in 2005. In December, 2008, DLLT acquired the 6,628-acre Wabassus Lake Tract, located immediately to the south. The management plan addendum for the Wabassus Lake Tract was completed and adopted June 15, 2010. This report will include some references to the Wabassus Lake Tract, but all timber harvest activity in 2009 was on the original 27,080-acre Farm Cove Community Forest.

## II. Annual Monitoring Update

### *Timber Harvest*

Timber Harvest Summary	2008		2009		2010	
	Product	Cords	Product	Cords	Product	Cords
Hemlock	Stud	1603.5	Stud	2925.8		
Hemlock	Pulp	1947.2	Pulp	2015.3		
Hemlock	Logs	0	Logs	12.3		
Spruce	Logs	338.2	Logs	971.0		
Softwood	Pulp	331.7	Pulp	244.4		
Softwood	Stud	808.1	Stud	0		
Pine	Logs	8.2	Logs	0		
Hardwood	Pulp	1169.9	Pulp	836.4		
Hardwood	Logs	6.1	Logs	1.3		
Hardwood	Veneer	1.8	Veneer	0.3		
Hardwood	Firewood	210.7	Firewood	18.4		
<b>Subtotal (without biomass)*</b>		6425.5		7025.2		
Biomass	Chips	1903.2	Chips	2238.8		
<b>Total (with biomass)*:</b>		8328.7		9264.0		

\* Biomass sales are typically incidental to planned harvest volumes and are composed of tops or limbs that are not considered within timber inventory. In 2008, 705 cords of hemlock pulp wood

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was marketed as biomass fuel due to market conditions; this volume is included in hemlock pulp in the table above, not in the biomass volume. In 2009, 112 cords of biomass included in the figures above was harvested during maintenance of the Farm Cove Dam Road.

### ***Other Forest Products***

DLLT, as part of its community forest management, routinely issues permits to local users of forest products, subject to policies and procedures approved by the DLLT Board of Directors.

In 2009, DLLT issued permits for gravel, wood for local craftsmen, firewood, and “tips” for wreath-making.

Gravel: 10 permits issued, 282 cubic yards total:

10 to abutting camp owners or lessees of Domtar Elsemore Landing campsites

Wood for local craftsmen: 2 permits issued, for harvest of 6 cedar and 1 white ash tree

Firewood: 23 permits issued for one cord each

Tipping: 6 permits issued

### ***Unanticipated Removal or Loss***

DLLT staff and forestry contractors monitor the forest for unanticipated loss due to insects, disease, wind, fire, excessive browsing by animals, and timber theft during routine management operations. DLLT also uses reports from members and others who use the forest to keep informed of changes in the forest.

**2009:** During a spring inspection tour of a completed 2009 winter harvest, in one stand to the west of Grand Lake Brook, DLLT directors and staff noted unexpected browning of needles in a small stand of white pine. The harvest had been conducted with frozen ground conditions, and there was no indication of tree or root damage. The mature white pines had been left unharvested to allow continued growth and provide seed source for pine regeneration.

DLLT requested assistance from the Maine Forest Service. After an inspection, we received the following report:

Please accept the following as a brief report of findings from our site visit on August 25, 2009, to the DLLT stand with white pine mortality near Grand Lake Stream. Mandy Farrar, Management Forester for Orion Timberlands, LLC, was also in attendance.

An examination of the trees indicated that the mortality has occurred over a very short period of time (a few months) since the stand had been thinned in late winter of 2009. Initial mortality was located on the edge of a primary skid trail, but has since spread to several other adjacent white pines at some distance from primary trails. The “pocket” of mortality clearly exhibited a progression of decline, with the initial tree showing most deterioration, and the declining trees at the margins. The existing living white pines appeared to be in good health, with an adequate live-crown ratio and reasonably dense foliage. This condition was also apparently exhibited by the white pines that have since

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died. A short core was extracted from one of the dead pines. The core showed moderate growth, with no significant change in growth rate over the past decade or so.

On examination of the lower stems and root-crown regions of affected trees, numerous pitch tubes were seen. These have been determined to be attacks by the red turpentine beetle (*Dendroctonus valens*). This pest does not generally attack pines unless there has been some stand disturbance, or other condition that has resulted in tree stress. Although the thinning and the skid-trail activity does account for some residual stand damage and changes in site conditions, it did not appear to be substantial; certainly not excessive. The timing of the beetle attacks is also difficult to explain, as bark beetles generally take a year or two after disturbance to build population levels high enough to be capable of attacking healthy trees. Lacking any other obvious cause, however, an aggressive beetle attack seems to be the cause of the mortality.

At the site, I suggested that leaving the trees would be an option, since additional stand entry and disturbance could further stimulate the problem. However, MFS forest entomologist Charlene Donahue has indicated that, given the likelihood that this is a particularly aggressive beetle population, it *would* be advisable to remove the dead and dying pines this fall and winter, before the new brood of beetles emerges next spring. I certainly defer to her judgment on this. Most of the galleries and larvae will be in the lower bole section and around the root collar. Butt logs could be debarked, or removed from the site. Debarking the stumps to below the duff-line, or covering the stumps with a layer of soil could also help reduce beetle emergence.

There are relatively few large white pines in the immediate vicinity of the mortality pocket. We would expect that the infestation has largely run its course and, with the removal of the now dead ‘brood’ trees, little further mortality should be expected. If conditions change (continue to deteriorate) by late next spring, please contact me again.

In addition to the red turpentine beetle infestation, most of the white pines did have a low to moderate level of needlecast caused by the fungus *Canavirgella banfieldii*. This has caused some significant thinning of crowns of white pines in the western regions of the state. No mortality is known to have been caused by the needlecast, because infected current-year needles are not shed until the following year, allowing the trees to maintain some continuous foliage. The disease is believed to occur statewide, and has been quite common since 2006, probably as a result of the excessively wet weather which favors infection. Although this is another stress factor to trees, it is not believed to be a significant pre-disposing factor for beetle attack. It may have much more of an effect on white pine regeneration in the understory of affected trees. Moist micro-climatic conditions in the understory and the high inoculum levels from canopy trees can result in very heavy infection occurrence to regeneration.

I have included some additional information on the red turpentine beetle. Information and photos of *Canavirgella* needlecast of white pine can be viewed at the Maine Forest Service, Forest Health and Monitoring website in the “*Conditions Reports*” section of the publications (or just “Google” Maine Forest Service *Canavirgella*).

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If you need additional information or further details, please contact me again at any time.

Sincerely,

William D. Ostrofsky

William D. Ostrofsky  
Forest Pathologist  
Maine Forest Service  
168 State House Station  
Augusta, Maine 04333-0168

Following the recommendation of Dr. Ostrofsky, DLLT contracted to have the dead pine removed and chipped. We have seen no further indication of a problem at the site.

### ***Regeneration***

DLLT staff, board members, and forestry contractors monitor forest harvest areas to determine if regeneration is occurring as anticipated and intended in forest harvest plans. Qualitative or quantitative inspections generally will occur within three years of harvests intended to encourage regeneration.

**2009:** The 2006 summer and winter harvest plans emphasized release of established regeneration rather than encouraging new regeneration.

### ***Focus Species Habitat Management Activities***

Management for specific “focus species” is used to benefit species of interest to the local community and to provide habitat for the full range of wildlife species found on the forest. The management plan sets out specific management activities for these species.

### **Deer Wintering Areas**

DLLT has a major goal of restoring deer wintering areas. Management activities include both building the area of mature forest softwood cover through partial harvesting in historic deer wintering areas (primary and secondary cover), harvesting to create openings that will produce browse and regenerate the forest to ensure a steady supply of future winter cover, and seeding landings to create summer food for deer and other species.

<b>Deer Wintering Area Management Activities</b>					
<b>Habitat and Activity</b>	<b>2008 (ac)</b>	<b>2009 (ac)</b>	<b>2010 (ac)</b>	<b>2011 (ac)</b>	<b>2012 (ac)</b>

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Partial harvests (selection, initial shelterwood, and intermediate harvests)	0	Appr. 20			
Regeneration harvest openings (patch-cut, overstory removal, and clearcut)	0	0			
Herbaceous seeding <sup>1</sup>	0	0			
Management consistent with DWA 5-year operations plan	Yes	Yes			
Other Monitoring:					

In summer 2009, harvests were conducted near the edges of the Burroughs Brook deer wintering area corridor and included approximately 20 acres of stands within the deer wintering area designated as never cover or non-cover. Harvest objectives included increasing the growth on existing regeneration and improving the establishment of new regeneration. This harvest should help non-cover areas to develop into secondary cover in the future.

### Snowshoe Hare

The best snowshoe hare habitat is created by even-aged regeneration harvests in softwood-cover. The “regeneration harvest openings” for deer wintering area management is also used to monitor the amount of snowshoe hare habitat created.

### **Grouse and Woodcock**

Grouse and woodcock management is based on creating a number of patches of different age classes in aspen and birch stands. The following monitoring elements have been included to track progress toward objectives outlined in the management plan.

#### **Grouse and Woodcock Management**

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<sup>1</sup> DLLT also keeps track of species and location of species used in herbaceous seeding.

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Annual Monitoring Element	Goal	2008	2009	2010	2011	2012
Number of grouse/woodcock unit plans developed	Not yet specified	One*	One*			
Cumulative number of units under active management	Not yet specified	One*	Two*			
Number of acres harvested (clearcut or overstory removal) in management unit blocks	Not yet specified	4	1.2			
Number of acres of herbaceous seeding	Not yet specified	Landings seeded spring 2009	Landings seeded summer 2009			

\* In the 2008 summer harvest, a set of seven patch cut harvest blocks in a poplar-birch fire origin stand on the south side of Burroughs Brook on the Farm Cove peninsula were created to provide early-successional habitat, including habitat for Grouse and Woodcock and browse for deer and moose. Average block size was 0.56 acres, with just under 4 acres harvested in total. A complete plan for this grouse/woodcock unit has not yet been developed, but the harvest plan calls for a 10-year re-entry to harvest new ½ acre patches adjacent to the patches harvested in 2008.

\* In the 2009 summer harvest, a set of 3 patch cut harvest blocks in a 28 acre poplar-birch fire origin stand east of Burroughs Brook on the Farm Cove Mountain Road were created to provide early successional habitat, including habitat for Grouse and Woodcock and browse for deer and moose. The average patch size was 0.3 acres, with under 1.25 acres harvested in total.

The balance of aspen-birch age classes on the entire forest is also monitored periodically as cover type maps are updated (see Section III).

### **Black Bear**

Black bear habitat management is accomplished through our creation and maintenance of young-forest openings by implementing the grouse/woodcock and deer wintering area management plans and implementation of the hard mast guidelines during harvest operations. These activities are monitored, and we conduct no separate monitoring of black bear habitat conditions or management.

### **Riparian Zone Management**

Harvest and other operations monitoring forms are used to gather information on harvest activities within riparian management areas. A summary of problems identified (e.g., unsatisfactory performance relative to management plan guidelines or site-specific plans) and steps taken to correct problems described below.

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Year	Unsatisfactory Implementation of RMZ Guidelines and Action Taken				
	Trout/Salmon	Beaver	Lake	Other Stream	Vernal Pool
2008	No problems observed	No problems observed	No problems observed	No problems observed	No problems observed
	Action:				
2009	No problems observed	No problems observed	No problems observed	No problems observed	No problems observed
	Action:				
2010					
	Action:				
2011					
	Action:				
2012					
	Action:				

### **Beaver**

Habitats modified by beaver activity have been shown to be beneficial to a wide range of wildlife, including waterfowl, wading birds, migratory songbirds, and moose. Other mammals are such as deer and bear are attracted to the early flush of nutritious vegetation in spring. Recent studies from the Moosehead lake region have found that rusty blackbirds (a declining species listed as Special Concern in Maine) were strongly associated with beaver-impounded wetlands, and olive-sided flycatcher (also Special Concern) was also found in these areas (Pelletier and Arsenault 2007). Maine has a long history of habitat management guidance that recognizes the benefits of maintaining beaver activity in the landscape, including Deifenbach et. al 2008, Foss 1999, and Bryan 2007. Only one stream in the DLLT FCCF, Burroughs Brook, has been designated as a priority beaver habitat in the Focus Species Addendum. Burroughs Brook is a slow moving stream with historic beaver use and forest cover that is less dense than that on streams with priority for brook trout and Atlantic salmon.

**All streams:** For each stream, DLLT used 2005 aerial photography to estimate the number of active colonies and likely historic colonies (as indicated by cover type) and length of stream affected by each. These data will be compared with future aerial photography. During the course of routine management and interviews with board members, DLLT gathers information on the number of new colonies and the number colonies abandoned each year.

**Beaver Stream Reaches:** Monitoring consists of tracking the number of harvests that create openings greater than 14,000 square feet that extend within 100 feet of designated beaver stream reaches (these are harvests specifically designed to enhance beaver food supplies), reporting of new beaver dams on trout streams, and on-site monitoring of conformance with riparian management guidelines described in the management plan.

**Trout Streams:** If reports indicate that beaver may be increasing on trout streams, DLLT will compare the current level of beaver activity with historical (2005) estimates to determine if beaver management activity may be warranted.

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2005 Beaver Activity Baseline							
TWP	Stream (from E to W)	FSF Mgmt <sup>1</sup>	Total Length (mi) <sup>2</sup>	Active Colonies <sup>3</sup>		Historic & Potential Colonies <sup>4</sup>	
				No.	Total Stream Length (mi)	No.	Total Stream Length (mi)
T6	Un-named – E boundary	O	0.54	0	0	0	0
T6	Un-named – S boundary	O	0.12	0	0	0	0
T6	Un-named – S boundary	O	0.23	0	0	0	0
T6	Scott Brook	T	1.73	1	0.08	2	0.42
T6	Grand Lake Brook	T	3.3	0	0	5	1.25
T6	Rolfe Brook	T	3.43	1	0.16	8	0.97
T6	Rolfe Brook - S tributary	T	0.50	0	0	2	0.35
T6	Rolfe Brook – S tributary branch	T	1.00	0	0	.1	0.38
T6	Rolfe Brook – N tributary	O	0.71	0	0	0	0
T6	Farm Cove tributary	O	0.46	0	0	0	0
T6	Burroughs Brook	B	1.80	1	0.62	1	0.16
T6	Narrows Tributary	O	0.68	0	0	0	0
T6	Julia Brook	T, O	1.24	0	0	4	0.52
<b>T6</b>	<b>Subtotal</b>		<b>15.74</b>	<b>3</b>	<b>0.86</b>	<b>19</b>	<b>4.05</b>
T5	Wabassus Lake Tributary	O	1.94	0	0	1	0.17
T5	Dark Cove tributary	O	0.46	0	0	0	0
T5	Hayes Brook	T, E	1.81	1	.16	3	0.69
T5	Machias River tributary	O, E	.99	0	0	0	0
T5	Sysladobsis Lake Tributary	T	1.04	1	0.09	2	0.09
T5	Fourth Machias Lake tributary	T,E,O	0.76	0	0	1	0.14
T5	Belden Brook	T, E	2.70	0	0	0	0
T5	Dead Stream	E	0.55	0	0	0	0
T5	Fourth Machias Lake W tributary	E	0.79	0	0	0	0
<b>T5</b>	<b>Subtotal</b>		<b>11.04</b>	<b>2</b>	<b>0.25</b>	<b>7</b>	<b>1.09</b>
<b>T5+T6</b>	<b>TOTAL</b>		<b>26.78</b>	<b>5</b>	<b>1.11</b>	<b>26</b>	<b>4.59</b>

1. FSF Management: B (Beaver); T (Trout/Salmon); E (Ecological Reserve); O (Other).
2. MEOGIS H24 GIS layer (except inaccurate section of Rolfe Brook S tributary branch)
3. Areas with signs of beaver activity separated by less than 0.1 mile were considered to be part of a single colony.
4. Includes deadwater sections that may have active beaver activity.

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Beaver and Trout Stream Monitoring						
YEAR	Stream	Beaver Reaches			All Streams	
		# harvests within 100 ft. of designated beaver reach	Total Area within 100ft. (ac)	Stream Shade, other BMPs, and LURC rules met?(Y/N)	# New Colonies	# Colonies Abandoned
2008	No applicable harvests	0	na	na	4	?
2009	Burroughs Brook	0	na	na	0	?
2010						
2011						
2012						

Note: add new rows for each year as needed

In 2009, DLLT directors reported no new active beaver colonies.

**Brook Trout / Atlantic Salmon**

In 2009, DLLT installed a new bridge over Hayes Brook on the ITS84 snowmobile trail, replacing a culvert that presented a fish passage barriers and risk of catastrophic failure. DLLT also installed an arch culvert on the Wabassus Lake Tract on the Third Lake Rd on a tributary to Wabassus Lake that had washed out during spring runoff within 4 months of DLLT property acquisition in December 2008. In each case, DLLT partnered with the Natural Resources Conservation Service and U.S. Fish and Wildlife Service. USWFS biologists conducted electrofishing at each restoration site, and relocated fish out of the project area. The streams were then temporarily diverted during installation. This relocation provided some data on fish species present at each location. This data is maintained by USFWS, and a copy is at the DLLT office. A brief summary is presented here.

Species:	Hayes Brook 7/30/09	Wabassus Trib. 10/5/09
Brook trout		
Brown bullhead	5	1
Blacknose dace		
Common shiner	1	3
Creek chub		36
Crayfish		
Northern redbelly dace		3
Ninespine stickleback		1
Sunfish species		3
Pearl dace		
White sucker		

## ***Exotic and Invasive Plants***

DLLT monitors the use of exotic (non-native) species to ensure that they do not become invasive. Currently DLLT's use of exotic species is limited to planting non-invasive grasses and legumes for wildlife habitat improvement. In addition, DLLT checks for the presence of known invasive plants that may be present in the area.

<b>Exotic and Invasive Plants</b>					
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>Wildlife Plantings</b>					
Number of sites planted	5 areas; 2008 winter harvest landings and all excavated ditches	2008 summer and 2009 winter harvest landings and all excavated ditches			
Species	Conservation mix (contains non-native grasses & legumes)	Conservation mix (contains non-native grasses & legumes)			
Estimated total area planted	3 acres	?			
Seed mix does not contain species on Maine's list of invasive plants (Y/N)	Y	Y			
Location identified in GIS (Y/N)	Y (general location of harvest areas and roads)	Y (general location of harvest areas and roads)			
Number of sample sites checked for undesirable spread	Five (earlier plantings)	Three (earlier plantings)			
Undesirable spread noted?	No	No			
<b>Invasive Plants</b>					
All harvest sites checked?	Yes, during routine operations and tour	Yes, during routine operations and tour			
Species found? <sup>1</sup>	No	No			

<sup>1</sup> Describe severity or impacts of any invasive species or exotic species and develop an action plan if management is feasible and warranted.

## ***Harvest Impacts***

Harvest sites and road improvement projects are monitored by DLLT's forest management contractor, Executive Director, and Board of Directors to ensure compliance with applicable laws and Best Management Practices designed to protect soil and water quality. Harvest

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operations are also monitored to ensure that operations comply with silvicultural prescriptions, damage to standing timber and regeneration is minimized, sensitive sites are protected, and site-specific wildlife practices and objectives are being met.

Compliance with Harvest Guidelines					
Monitoring element/guideline	2008	2009	2010	2011	2012
Hard Mast referenced in harvest plans for applicable stands	S	S			
Satisfactory execution of hard mast guidelines during harvest	S	S			
Wildlife trees and downed logs	S	S			
Retention patches	na	na			
Wildlife Trees retention Patch: quantitative sample of selected harvest blocks (number of blocks, performance)	na	na			
Riparian and Lakeshores: applicable guidelines referenced in management plans	S	S			
Riparian and Lakeshores: applicable guidelines and BMPS implemented	S	S			
BMPs beyond riparian and lakeshore zones	S	S			
# vernal pools known prior to harvest plan:	0	0			
# new vernal pools identified	0	0			
Vernal pools identified in harvest plans and guidelines implemented during harvest	na	na			

**S** – Satisfactory

**U** - Unsatisfactory, problem ongoing (describe below)

**U/S** – Unsatisfactory, problem corrected (describe below)

Except where noted above, all harvests are monitored for all elements

### Unsatisfactory Harvest Conditions: Identification and Resolution

During 2009, harvest conditions were generally highly satisfactory in terms of both silvicultural and ecological objectives. The harvest contractor has continued to gain a strong understanding of DLLT goals and objectives. The winter harvest was successfully completed with frozen ground conditions, and results were satisfactory. The summer of 2009 was unusually rainy, but harvest operations were closely monitored and no erosion problems occurred as ground conditions were adequately rocky to prevent impacts from harvest equipment.

## Road Monitoring

<b>Road Monitoring Summary</b>	
<b>YEAR</b>	<b>Roads Inspected, Problems Identified and Corrected</b>
<b>2008</b>	4 <sup>th</sup> Lake Rd: Entire road monitored; previously approved maintenance project completed, including installation of 10 culverts, and ditching and re-shaping on portions of 7 miles of the road, and routine grading occurred. Brushing of the road way was completed in 2007. Installation of a new bottomless arch culvert at Rolfe Brook to to improve aquatic habitat and fish passage completed. Additional ditching, culvert, and graveling work is planned for 2009 and beyond.
	Farm Cove Dam Rd.: entire road monitored, brushing completed; installation of new bottomless arch culvert at Scott Brook to improve aquatic habitat and fish passage and two new nearby cross-drain culverts completed
	Farm Cove Mountain Rd: road north to Burroughs Brook monitored; ditching and surface maintenance completed as needed to support harvest activities.
<b>2009</b>	Dobsis Dam Rd: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial watershed impacts but maintenance improvements recommended for recreational use as funds available. Roadside brushing was completed in 2007.
	4 <sup>th</sup> Lake Rd: Entire road monitored; routine seasonal gradings conducted, culvert replaced at mile 8.6.
	Farm Cove Dam Rd.: Entire road monitored; culvert replaced at mile 2.8
	Farm Cove Mountain Rd: road north to Burroughs Brook monitored; ditching and surface maintenance completed as needed to support harvest activities.
	Dobsis Dam Rd: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial watershed impacts but maintenance improvements recommended for recreational use as funds available.
	Third Lake Rd: on Wabassus Tract acquired 12/08: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial immediate watershed impacts but maintenance improvements recommended. Arch culvert installed at Wabassus tributary stream (see "Brook Trout" above). Major erosion risk exists on section of road below Wabassus Mt with highly eroded ditch that lacks functional cross drains; drainage restoration project planned for 2010.
	43-00-0 / Little River Rd: on Wabassus Tract acquired 12/08: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial immediate watershed impacts but maintenance improvements recommended. Major portions lack adequate drainage ditches or cross drains and are at risk for erosion, surface extremely rough. Restoration project planned for 2010
42-00-0 / Little River Rd: on Wabassus Tract acquired 12/08: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial immediate watershed impacts but maintenance improvements recommended. Lacks adequate drainage ditches or cross drains and is at risk for erosion, surface extremely rough. Restoration project planned for 2010	
Wabassus Mt Rd: on Wabassus Tract acquired 12/08: entire road monitored; surface condition poor and limited surface erosion occurring; no substantial immediate watershed impacts. Lower priority for restoration.	
<b>2010</b>	
<b>2011</b>	
<b>2012</b>	

## Pesticides and Biological Control Agents

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DLLT does not currently use pesticides or biological control agents. If in the future a need to use the agents arises, DLLT will prepare evaluate the risks, prepare appropriate application plans, and monitor use in accordance with the Farm Cove Community Forest Management Plan, the conservation easement, and Maine law and Forest Stewardship Council certification standards.

### ***Social and Economic Monitoring***

<b>Social and Economic Monitoring</b>					
<b>Element</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Total volume of wood harvested (cords)	6425.5	7025.2			
Number of permanent DLLT employees	3	3			
Number of temporary DLLT employees	0	0			
Number of contractor and subcontractor employees	Appr. 10*	Appr. 10*			

\* contractors and subcontractor employees include forester, President, and other employees of Orion Timberlands; foreman, operators, truckers, and other employees of the harvest contractor Davis Forestry Products; only harvest-related contractor employees are included here.

DLLT's board members and staff, and public meetings attended or hosted by DLLT are the major means by which DLLT monitors the public reaction to management.

**2009** In the past year, DLLT has heard a number of strongly positive comments from year-round and seasonal residents and visitors, as well as other conservation organizations, elected officials, and administrators. The most frequent positive comments relate to DLLT's permanent conservation of lands, including preventing lakeshore development and guaranteeing public recreational access. We also have received positive comments related to our wildlife habitat protections, and that our timber harvests are less "aggressive" than on industrial forest lands.

Comments specifically related to our activities of 2009 include observations from numerous local residents and visitors that road conditions on the community forest continue to improve.

### ***Common Loon Monitoring***

In addition to monitoring activities directly related to management of the Farm Cove Community Forest described in this report, DLLT monitored common loon productivity on 45 lakes throughout the region in 2009, completing a project to establish a baseline set of data on loon reproduction that began in 2001 in cooperation with the U.S. Fish and Wildlife Service and Biodiversity Research Institute. An Executive Summary of the final report is available upon request.

### III. Periodic Forest Monitoring Data

Because the following data are gathered periodically (for example, every 5-10 years), this section of the report will be only updated as new data become available.

#### ***Forest Inventory***

##### Standing Timber

Forest inventory is the basis of good forest management. The following is a summary of the data that have been collected on the forest.

<b>Farm Cove Community Forest: Broad Forest Type &amp; Volume Summary (2002)</b>							
<b>Broad Type</b>	<b>Acres</b>	<b>SW Vol / Acre</b>	<b>SW Cds</b>	<b>HW Vol / Acre</b>	<b>HW Cds</b>	<b>Total Vol / Acre</b>	<b>Total Cords</b>
Cedar	260	6	1568	2.4	631	8.5	2199
Hardwood	3311	3.7	12212	5.7	18899	9.4	31112
Mixedwood	10907	13.1	143036	3.3	35892	16.4	178928
Softwood	10550	18	190345	2.2	23537	20.3	213882
<b>Total</b>	<b>25028</b>	<b>13.8</b>	<b>347161</b>	<b>3.2</b>	<b>78960</b>	<b>17</b>	<b>426121</b>

The last forest-wide inventory took place in 2000. Because new, high quality cover type maps were developed from 2005 aerial photography, DLLT may consider extending the period to undertake the next forest-wide inventory to 2015.

<b>Forest inventory elements planned for the next forest-wide inventory</b>			
<b>Element</b>	<b>Frequency</b>	<b>Strongly Recommended</b>	<b>Desirable</b>
Forest Inventory	Every 10 years. Last full inventory 2000. New air photos and type maps 2005.	<ol style="list-style-type: none"> <li>1. Tree species, size, grade and density</li> <li>2. Focus Species Development Stage</li> <li>3. Snags</li> <li>4. Other wildlife trees</li> <li>5. Invasive species</li> <li>6. Aerial photography and cover type maps</li> </ol>	<ol style="list-style-type: none"> <li>1. Species distribution by canopy layer (overstory, understory, ground cover) and percent cover of each layer.</li> <li>2. Shrubs, wildflowers and other herbs, ferns and bryophytes.</li> <li>3. Large downed woody material</li> </ol>

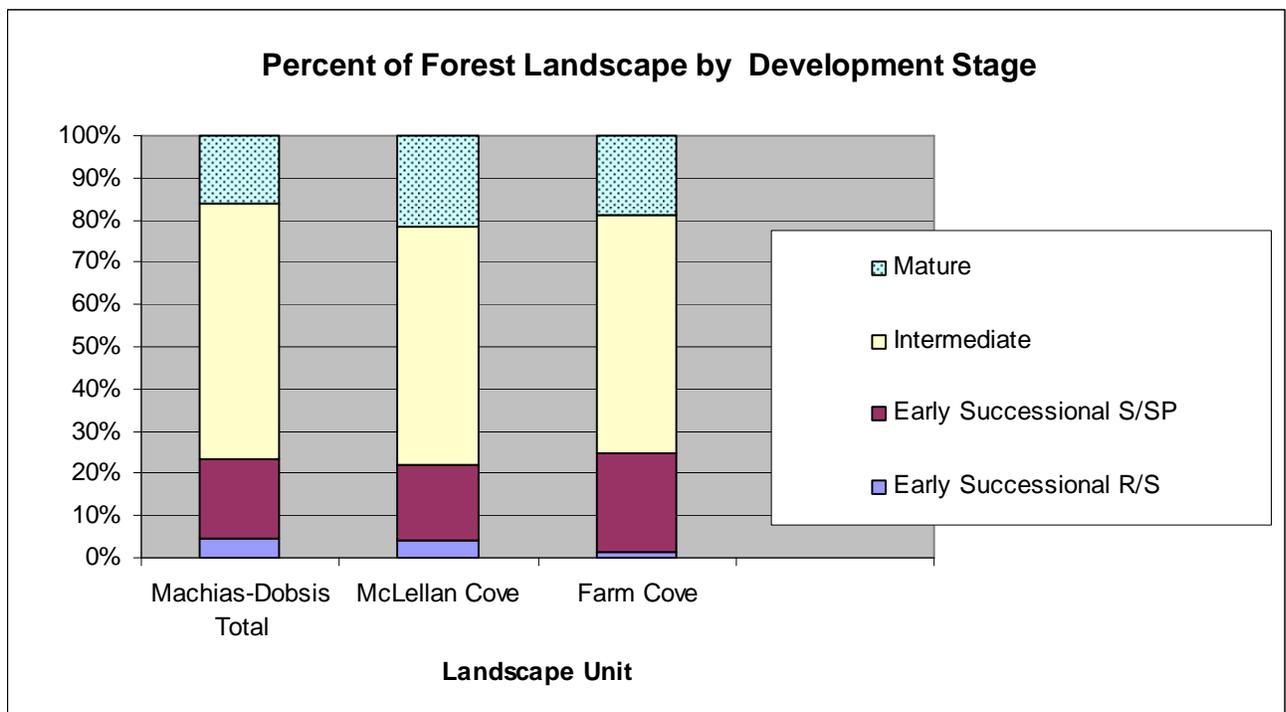
#### ***Changes in Habitat Conditions***

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The Farm Cove Community Forest is managed for a range of forest types and ages to provide diverse and abundant habitat for wildlife species of interest to the local community. Aerial photographs and cover type maps are used to assess forest habitat conditions for most species. To help manage the forest, the management plan has divided the forest into the following management units.

Machias-Dobsis:	West of the thoroughfare between Wabassus and Pocumcus Lakes. This unit includes the Ecological Reserve, Late Successional Management Area (LSMA), and the remaining general forest management area (Dark Cove subunit).
McLellan Cove:	North of West Grand Lake
Farm Cove:	South of West Grand Lake and east of the Wabassus-Pocumcus thoroughfare. Includes 30 acres on Kitchen Cove Point

The graph below represents forest habitat conditions as of 2005 summarized from the cover type data. The next update of the cover type maps and data is expected in or before 2015, when the property is re-inventoried.



## Deer Wintering Areas

Long-term monitoring of deer wintering areas is based on the percent of mapped primary and secondary cover in mapped DWA. DLLT has identified five DWA management areas totaling 7,420 acres. The objective is to have at least 25% of each DWA in primary cover and at least

## Monitoring Summary Report

50% in primary and secondary cover combined. Due to heavy harvesting under previous ownership, none of the areas meet the DWA cover criteria.

Deer Wintering Areas Cover 2005						
DWA	Total Potential Cover*	Current Primary Cover		Current Secondary Cover	Current Primary + Secondary	Management Objectives Met?
	ac	ac	%	ac	%	Y/N
Belden Brook	1216	81	7%	438	43%	N
Burroughs Brook	549	52	9%	264	58%	N
Hayes Brook	1857	47	3%	82	7%	N
GL Brook	1855	80	4%	385	25%	N
Whitney Cove	270	0	0%	136	51%	N
<b>Total</b>	<b>5746</b>	<b>259</b>	<b>5%</b>	<b>1305</b>	<b>27%</b>	<b>N</b>

\*Total cover includes all primary, secondary, and non-cover areas.

Change in DWA cover will be monitored when the cover type maps are updated (ca 2015). Section II includes a summary of annual management activities in DWA.

## American Marten

The management plan for American marten (“pine marten”) is based on maintaining large patches (over 1,200 acres) of mature forest. Monitoring is based on periodic inventories and cover type maps (i.e., every 10 years) to quantify habitat conditions.

2005 Marten Habitat Conditions							
Management Unit	Mapped Current and Future Marten Habitat <sup>1</sup>	Current Primary Habitat		Current Secondary Habitat		Total Current Habitat (2005) <sup>2</sup>	
		ac	% <sup>2</sup>	ac	%	ac	%
Belden Brook	1691	628	37%	477	28%	1105	65%
Hayes Brook	1590	161	10%	24	1%	185	12%
Whitney Cove	458	198	43%	0	0%	198	43%
Burroughs Brook	1046	506	48%	0	0%	506	48%
Grand Lake Brook	2276	559	25%	0	0%	559	25%
<b>Totals</b>	<b>7060</b>	<b>2052</b>	<b>29%</b>	<b>500</b>	<b>7%</b>	<b>2552</b>	<b>36%</b>

<sup>1</sup> Managed forest only exclusive of potential habitat in the ecological reserve.  
<sup>2</sup> “%” refers to the percent of the designated marten management units that meets habitat definitions. The long term goal is at least 37.5% of the area in marten management to meet primary habitat guidelines and at least 75% of the management units to meet primary plus secondary habitat guidelines.

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Projections indicate that an average of 32% of the marten management units will meet primary habitat objectives in 20 years and 68% will meet secondary habitat objectives. The next monitoring is scheduled ca 2015 when the cover type maps will be updated.

### **Grouse and Woodcock**

Long term potential high-value grouse and woodcock habitat is indicated by the total area and balance of development stages in the aspen-birch forest type. This is only a portion of the total area of habitat, because grouse will also be found in young and intermediate-aged northern hardwood and hardwood-dominated mixed forests.

2015 Grouse and Woodcock Habitat Conditions						
Management Unit	Focus Species Development Stage (ac)				Aspen-Birch Total	All Types Total
	Early Successional R/S	Early Successional S/SP	Intermediate	Mature		
Dark Cove (exclusive of the Ecological Reserve and LSMA)	28	444	76	14	562	4,546
Whitney Cove		46	187	60	293	2,703
Farm Cove		206	422		629	11,992
<b>Aspen-Birch Total</b>	28	697	685	74	1,484	19,240
<b>Total Forest Acres</b>						25,369

Additional aspen and birch stands are found in the Late Successional Management Area (LSMA) and Ecological Reserve. Because these areas will not be managed for grouse and woodcock, which require young, regenerating forests, the aspen-birch acres in these units will not be used to measure change in habitat due to management. See Section II for annual monitoring of habitat management activities.

### **Black-throated Blue Warbler/Mature Hardwood Forest**

Black-throated blue warbler is the focal species for older intermediate and mature northern hardwood forest. Currently about 60% of this forest type in the DLLT FCCF as a whole is in the early successional stage and 6% is in the mature stage. The objective is to increase mature northern hardwoods to 15% of the total northern hardwood area by 2015 and 30% by 2025. The next monitoring will occur when the cover type maps are updated.

### **Hard Mast Management**

Long-term plans for hard mast include experimental planting of American chestnut and red oak by 2012. These plots and chestnuts planted prior to 2007 will be monitored.

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Year	Number of plots	Year Planted	Type of Planting	Year Monitored	Results
Planted Prior to 2008	8	2006	Seedlings	2008	Qualitative inspection only; surviving seedlings appear healthy and have received only moderate browse pressure; survival appears better away from raspberry vines in old wood yards
2008					
2009					
2010					
2011					
2012					

### ***Rare Species, Natural Communities, and other Special Habitats***

During 2002-2003 DLLT contracted with Dr. Norm Famous and Janet McMahon to inventory the anticipated DLLT acquisition lands for the presence of rare, threatened, or endangered wildlife and plant species. The final report and recommendations were completed in August of 2007. Additional information, including a list of rare species that could potentially be observed on the Community Forest, was requested and received from the Maine Natural Areas Program, and is summarized in the Farm Cove Community Forest Management Plan. DLLT's approach is to protect species by protecting their habitat, including areas designated as special management areas, late-successional forest, and ecological reserve. Monitoring for general conditions or unintended adverse impacts occurs primarily during forest harvest operations planning and implementation when harvests occur near or in special management areas.

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