

August 8, 2018

Ms. Kristen Puryear, Ecologist Maine Natural Areas Program State House Station 93 Augusta, ME 04333-0093

Mr. Mark McCollough, Endangered Species Specialist US Fish and Wildlife Service Maine Fish and Wildlife Service Complex 306 Hatchery Road East Orland, Maine 04431

RE: New England Clean Energy Connect Project Rare Plant and Unique Natural Community Survey – Preliminary Results

Dear Ms. Puryear and Mr. McCollough:

Central Maine Power Company (CMP) is pleased to provide the preliminary results of rare plant and exemplary natural community surveys conducted in July 2018 on the New England Clean Energy Connect (NECEC) project.

The preliminary results package is being submitted electronically and includes the following:

- MNAP survey data forms and corresponding photographs
- Preliminary data package summary spreadsheet
- Maps documenting occurrence locations

CMP intends to submit the final rare plant and exemplary natural community report on or before August 24, 2018.

If you have any questions or comments regarding the preliminary results, please call or email (207-629-9717; gerry.mirabile@cmpco.com).

Sincerely,

Ferry / Mindle

Gerry J. Mirabile Manager – Environmental Projects Environmental Permitting AVANGRID Networks, Inc.

Enclosures



cc: Don Cameron, MNAP; Wende Mahaney, USFWS; James Beyer, MDEP; Jay Clement, USACE; Samantha Horn, LUPC; Bill Hinkel, LUPC; Naomi Kirk-Lawlor, LUPC; Christopher Lawrence, USDOE; Melissa Pauley, USDOE; Bernardo Escudero, CMP; Mark Goodwin, Burns & McDonnell; Matt Manahan, Pierce Atwood; Jared des Rosiers, Pierce Atwood
 File: New England Clean Energy Connect

ATTACHMENT MNAP SURVEY DATA FORMS AND CORRESPONDING PHOTOGRAPHS

Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP Powe	er		Survey Site: Bell Farms Area/S. of Cotton					Road
Quad name:	Lewisto	n			Quad co	de:	440)70A2		
County:	Androsc	oggin			Town:		Lev	wiston		
Plant Name: Car	rex siccata ((CASI01AR_02	AR)		☐ New ⊠ Update Occurrence #:					
Date: 3July2018	Surve	eyor(s): Art Gili	man and Anna	Ritchie				Sourcecode (MNAP assigns):	
Primary Surveyor 1 Conti Cir # 5, B			s Environment	al Pł	none: (802)	479-7	7480	Email: avgilr	nan@together.net	
GPS Datum WGS 84 NAD 83 NAD 27 Other GPS Coordinates UTM Zone 19N Decimal Degrees (dd.ddd) Deg Min Sec (dd mm ss) GPS (dd mm.mm) Other North West Additional Coordinates Lat. 44.023698 Long70.175755 Directions to Occurrence: Located south of Cotton Road, on the low river terrace at the powerline crossing Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.										
T (* 1 T	MAP: Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation.									
Locational Uncertainty (how closely can you map the feature to its actual location?)										
EO DATA		Phenology	Popul	ation Are	ea				Other than norma	
# of Plants 3000-5 ☐ Individuals ⊠ Ramets Population Structu		In leaf In bud In flower Immature	fruit 1 - 20	square ya – 5 squar – 20 squa) – 100 sç)0 sq yds	rd 9 yards re yards uare yards		Explain: Slightly suppressed; competing vegetation Evidence disease, predation, etc? Explain: Yes No			
99 % Vegetative1 % Reproductive		Seed disp		acre + ~area ac	tual habitat otential hat		\boxtimes Se \boxtimes As	Type of reproduction? Explain: ☐ Sexual ☐ Asexual ☐ Not Observed		
Other Comments:	Mapped out	er extent of two	population gr							
				GENER	AL DESCI	RIPT	ION			
Associated natura	l community	: Riverbank ter	race/powerline	corridor						
Associated plant s	pecies: Rubi	us flagellaris, E	lymus repens							
Substrate/soil type	e: Sand; stab	le/fully vegetate	ed							
Threats to Populat	tion:									
Conservation/Mar	nagement/Re	search needs:								,
Elevation Min ft / m Max ft / m		pect N ☐ NE E ☐ NW S ☐ SE W ☐ SW Flat or NA	% Slope ☐ Flat ⊠ 0-10 ☐ 10-35 ☐ 35+ ☐ Vertical	P F	nt Dpen Partial Filtered Phade		oograp Crest Upper S Mid-slo Lower Bottom Level F	ope Slope	Moisture Inundated Saturated (wet r Moist (mesic) Dry-mesic Dry (xeric)	nesic)

Project (MNAP assigns)

			1							
Photograph taken?	Specimen collected? ⊠ No □ Yes		Do other member	rs of this genus o	ccur at this site?					
□ No	Collection #		If yes, are there h	ybridization issu	ies? 🛛 No; 🗌 Y	es; Explain				
X Yes	Repository			Are there identification issues? 🛛 No; 🗌 Yes; Explain Other sedges primarily Section Ovales with much different inflorescences.						
Landowner name/address	for entire population (attach a	dditional	Phone		Is landowner a	ware of plant?				
owner information on a se		duttollar			Is landowner aware of plant?					
			Tax map # (if kno	wn)	Is landowner p	rotecting plant? No				
					Comments					
	EO RANKING									
CURRENT CONDITIO	N of the plant's immediate ha			graded? Note an	y disturbances w	ithin the plant				
habitat (check off, describ	e below to what degree these Note how the disturbance(s)	have altered	natural ecological pr	ocesses, or if the						
Logging-most recently	v∼ yrs ago	Fire	undment	\square Dumping or	mining cle disturbance					
Agriculture / Pasture	outhreaks browsing)		c plants	\square ORV / Vent						
Wind or ice damage	outoreaks, orowsing)	Erosi		\boxtimes Other						
_				No Evidence	e of disturbance					
Describe: Powerline corri	dor crossing river.									
Rank \Box B – Some \Box C – Signs	Condition A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor) Rank B – Some signs of human disturbance or degradation, but habitat generally intact C – Signs of human disturbance or degradation, and habitat compromised in some significant way D – Highly disturbed (multiple impacts causing habitat to be drastically altered)									
Other / H	abitat disturbed, consistent wi	th needs of s	pecies / Explain: Ma	anaged powerline	e corridor					
Does it appear to be capal Size / Quality Rank	large is this population relativ ole of maintaining itself if its h □ A – Excellent □ I y large; competetion from othe	nabitat remain B – Good	$\frac{1}{2} \mathbf{C} - Fair $							
	KT of the area surrounding the nented? To what degree can the					d the observed				
Comments:										
Landscape A – Population surrounded by > = 1000 acres of undisturbed landscape Rank B – Population surrounded by fairly intact landscape, though there may be cuts nearby C – Population surrounded by fragmented forest or rural landscape D – Surrounding area developed Other / Explain: Cleared powerline corridor in rural/agricultural surrounding										
OVERALL DANK for	EO based on your experience		ellent 🛛 B – Goo	d 🗌 C – Fair	D – Poor	E – Extant				
Comments:	20 based on your experience	$\square A - EXC$	enent D – 000	u LIU-Fall	u – 1001					
MNAP reviewed / verifie	ed rank	A – Exc	ellent 🔲 B – Goo	d 🗌 C – Fair	D – Poor	E – Extant				
Date: Rev	viewer:	Rationale:								

Rare Plant Survey CASI01AR_02AR Photolog

Central Maine Power New England Clean Energy Connect Project



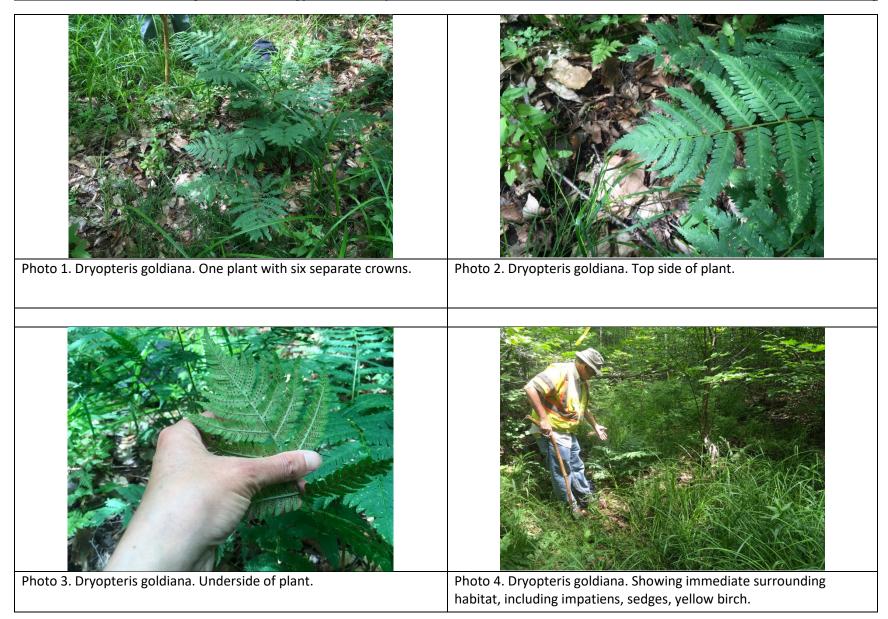
Project (MNAP assigns) _____ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP Powe		Survey	Site:		Off of Stream Road/S. of Dead Radar Station				
Quad name:	Mahone	y Hill			Quad co	ode:	450	69A7			
County:	Somerse	et			Town:	-	Mo	scow			
Plant Name: Dryo	pteris gold	lieana				🛛 Ne	w	Update	Occurrence #:		
Date: 12July2018	Surve	eyor(s): Art Gilr	nan and Ai	nna Ritchi	e			Sourcecode (MNAP assigns):		
Primary Surveyor A	Address:				Phone:			Email:			
North Directions to Occur	UTM Zo Wes rence: Take s to the east oad, approv	ne 19N 🛛 Dec st Add e Stream Road, t, there is a side ximately 70 feet	timal Degro itional Coc off of High road that t into the w	rees (dd.dd ordinates L hway 16 (r takes off to voods from	at. 45.117098 north of Bingl wards Austin the west side	3, Long. nam) to Stream of the	<u>69.8</u> where n.Stop ROW	61951 ti parallels th here and hea clearing	(dd mm.mm) Other e existing powerline. Just before d northwest. The population is locat		
									on of the observation.		
Locational Unc											
mapped to w/ii								m /ft /l	xm /miles);aerial delimited		
<u>Confidence in C</u>	Observatio	on of Populat	ion Exten	<u>1t</u>							
Confident full	extent of fe	eature IS known	n; 🗌 Cor	nfident ful	l extent is NC)T knov	wn;	Uncertain	whether full extent is known		
EO DATA		Phenology	Po	opulation A	Area				Other than normal		
# of Plants 2		🗌 In leaf] 1 square			Explai	n:			
Individuals Ramets		In bud In flower			quare yards				redation, etc? Explain:		
Population Structur		Immature Mature fru) square yards ds to 1 acre		☐ Yes ⊠ No				
30 % Vegetative	C	Seed dispe		$1 \operatorname{acre} +$			Type of reproduction? Explain: spores and multiple				
70 % Reproductive		Dormant		~area	actual habita			lants from one crown 3 Sexual			
I I I I I I I I I I I I I I I I I I I				~ area	a potential ha	bitat		Isexual fot Observed			
Other Comments: 7	Fook a sing	le point betweer	n the two ii	ndividuals	; wich were a	pproxin					
				GENI	ERAL DESC	'RIPTI	ON				
Associated natural	community	: Moist clearing	g in mucky					lded in beech-	maple-birch forest		
Associated plant sp	ecies: Impa	atiens capensis (presumed,	, no flower	s seen); Glyc	eria stri	ata, Al	lnus serrulata,			
Substrate/soil type:	Mucky loa	um, spongy with	high orga	nics							
Threats to Population	on:										
Conservation/Mana	igement/Re	search needs:									
Elevation	As	pect	% Slope	· L	ight			nic Position	Moisture		
Min 1120' ft / m Max ft / m		NNEENWSSEWSWFlat or NA	☐ Flat ⊠ 0-10 ☐ 10-35 ☐ 35+ ☐ Vertic		Open Partial		Frest Spper S Id-slo ower S ottom evel P	Slope pe Slope	 Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic Dry (xeric) 		

Project (MNAP assigns)

				6.1.						
Photograph taken?	Specimen collected?		Do other members \Box No \Box Yes I	of this genus of	occur at this site?					
□ No				• •						
	Collection #		If yes, are there hy	bridization issu	ies? 🖾 No; 🗋 Y	es; Explain				
🛛 Yes			Are there identific	ation issues?		vnloin				
	Repository		Are more identifie			xpiaiii				
Landowner name/address	for entire population (attach a	additional	Phone		Is landowner a	ware of plant?				
owner information on a se						No				
	•		Tax map # (if know	vn)	Is landowner p	rotecting plant?				
			1 、	,		No				
			Lot # (if known)		Comments					
EO RANKING										
CURRENT CONDITION of the plant's immediate habitat. Is the habitat pristine or degraded? Note any disturbances within the plant										
	be below to what degree these				ey have any negat	ive or positive				
effects on the population). Note how the disturbance(s)) may influen	ce success of the plan	t at the site.						
Logging-most recentl	y ~ yrs ago	Fire Fire	undment	Dumping of	c mining icle disturbance					
	t outbreaks, browsing)			\square OK V / Veni \square Trails / Roa						
Wind or ice damage	outoround, orowonig)	Erosi		\boxtimes Other	u b					
		_		🗌 No Evidenc	e of disturbance					
Describe: Powerline corr	ridor nearby									
Condition \square A – No ap	pparent signs of human disturb	bance (or long	enough ago that effe	cts are no long	er visible or are e	xtremely minor)				
Rank D B – Some	e signs of human disturbance o	or degradation	, but habitat generally	v intact						
C – Signs	s of human disturbance or deg	radation, and	habitat compromised	in some signifi	cant way					
-	ly disturbed (multiple impacts	-	•							
	Habitat disturbed, consistent w				likely one clone),	limited availanle				
habitat in small swale; m	anaged powerline corridor nea	arby and old l	ogging activity crisser	osses the area						
SIZE / OUALITY How	v large is this population relati	ve to typical i	opulations of this spe	cies? Small						
	ble of maintaining itself if its									
Size / Quality Rank		B – Good] D – Poor						
Comments: Consists of	one clone, but that appears to $$	be fairly old v	vith several "crowns"	off one rhizom	e.					
LANDSCAPE CONTE	XT of the area surrounding th	e plant habita	. What land uses and	l/or natural con	nmunities surrour	d the observed				
	nented? To what degree can the									
Comments: C	-			-						
Landscape A – Popu	ulation surrounded by $> = 100$	0 acres of une	listurbed landscape							
Rank 🛛 B – Popu	ulation surrounded by fairly in	tact landscap	e, though there may be	e cuts nearby						
	ulation surrounded by fragmer	nted forest or	ural landscape							
	ounding area developed									
Other / 1	Explain: in woods off of cleare	ed powerline	corridor in rural mana	ged forest area						
		<u> </u>								
OVERALL RANK for	EO based on your experience	$\Box \mathbf{A} - \mathbf{Exc}$	ellent $\square \mathbf{B} - \text{Good}$	🔀 C – Fair	$\square \mathbf{D} - Poor$	$\Box \mathbf{E}$ – Extant				
Comments:										
MNAP reviewed / verifi	ed rank	$\Box \mathbf{A} - \mathbf{Exc}$	ellent 🔲 B – Good	🗌 C – Fair	D – Poor	\Box E – Extant				
Date: Re	viewer:	Rationale:								
Duit. Kt		reactionate.								

Central Maine Power New England Clean Energy Connect Project



NATURAL COMMUNITY SURVEY

Project

I. IDENTIFIERS / LOCATION

Site Name	e: Livermore	Obs. Pt. #:	Quadcode:	
Field-assigne	ed Community	Type: Upper Floodplain Hardwood Forest		USGS 7.5' Quad Name: Livermore Falls
	or classificat position is ap	Town: Livermore Falls		
MNAP REVI	EWED/EdITE	County: Androscoggin		
LANDOWNE Map	R INFORMAT	Date: 7/7/18		
				Surveyors: A. Gilman
				SourceCode: F
				Biophysical Region:
GPS Coord	linates (🕅 N	IAD 83, UTM Zone 19N; 🗌 Other-please specify) Lat. 44.403	3416 Long -70 1	48538
	to occurrenc		, Long. 70.1	-0000
Strong	v recommen	d use of air photos and USGS topographic maps for relocation	on of the site on t	he ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:	Confidence Extent:				
Areal delimited	🗌 Y - Cont	fident full extent of feature IS known			
☐ Mapped to within 12.5 m of actual location	🔲 N - Conf	fident full extent is NOT known			
Greater uncertainty (please indicate)	🗌 ?- Unc	ertain whether full extent is known			
50 m / ft / km / miles					

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

The community is dominated by red oak, yellow birch, white ash, and red maple, with minor component of black cherry. "Rich forest" components" such as sugar maple and basswood are not importantly represented but note the presence of at least oe butternut tree. (Also note the lack of silver maple or cottonwood). Many trees are of large size ($ca.14^{"} - 16^{"}$) and there is good forest structure. Shrubs are nearly lacking (a few speckled alder). The understory comprises mainly ferns: Sensitive fern, interrupted fern, and lady fern are most prominent, with a few ostrich fern present.

The site is nearly level and the community occurs slightly up-gradient and down-gradient of the delineated wetland boundary. Slightly to the south a stream enters from the east, and the canopy opens to a high-herb streamside community. Beyond that, there is general floodplain forest. To the north, the community is bounded by rising terrain and mixed forest on sand deposits.

The community was not investigate further west (towards River Road) than the NENEC project study area. Note this area was previously mapped (by the same investigator) as "maple-basswood floodplain forest" but basswood is now not apparent.

SAMPLE TYPE:	Additional sampling recommended?
X Brief descriptive – NOT SUFFICIENT FOR DOCUMENTING NEW EOS	□ <u>Yes</u> □ No
Generalized cover estimates & dbhs (p2)	Photos: 🗌 Yes 🔲 No
Nested plot samples (N =) (attach)	

Community name & EO#:

II. VEGETATION BY STRATA

TREE LAYER (canopy plus emergents, everything \geq 10 cm dbh)										
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60% 70% 80% 90+%				Total Basal Area: ft²/acre <mark>NC</mark>	Conifer %:0	Canopy height Supercanopy spp?		n or <mark>ft</mark>		
Species name/code	Cover class*	Dbh range ⊠ <mark>in</mark> ⊡cm	Core ages	Species name/code	Cover class*	Dbh range □in □cm	Core ages	Check		
Querus rubra	19	12"-16"+	NA					here if		
Betula allegh	19	12"-16"	NA					plot data are		
Acer rubrum	37	10"-15"	NA					attached		
								instead		

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

TOTAL COVER OF STRATUM:	<mark><5%</mark>	10%	20%	30%	40%	50%	60%	70%	80%	90+%	
Species name/code	Cover cla	ass*	Spe	cies na	ame/co	de			Cove	er class*	ahaak hara if
NA											check here if plot data are
											attached
											instead

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5%	10%	20%	30%	40%	50%	60%	<mark>70%</mark>	80%	90+%			
Species name/code	Cover cla	ass*	Spe	cies na	ame/co	de			Cov	er class*	ahaak hara if		
NA											check here if plot data are		
											attached instead		

HERB / DWARF SHRUB LAYER (all herbaceous vascular plants <u>plus</u> any woody plants < 1 m tall)									
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70% 80% 90+%	DOMINANCE : tree regen graminoid0_							
Species name/code	Cover class*	Species name/code	Cover class*	check here if					
Onoclea sensibilis	19			plot data are					
Athyrium angustum	19			attached					
Osumnda claytoniana	19			instead					
		No spring ephemerals were observed due to mid-summer site visit.							

BRYOID LAYER (all ground-layer non-vascular plants; do not include epiphytes)									
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70% 80% 90+%	DOMINANCE: bryophytes<5	%% lichens _	0%					
Species name/code	Cover class*	Species name/code	Cover class*	ahaak hara if					
No observed				check here if plot data are					
				attached					
				instead					

*cover classes (midpoint): < 2%=1, 2-5%=3, 6-12%=9, 13-24%=19, 25-49%=37, 50-74%= 63, 75-100%=87

ADDITIC taken	NAL SPECIES V	vithin area w	here vege	tation cover by	strata were	OTHER PLANT SPP seen in community (spp codes), for complete plant species list			
Stratum	Species code	Cover class	Stratum	Species code	Cover class	Dryopteris carthusiana			

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (rooting zone):	ELEVATION <mark>: 290 ft</mark>	ASPECT (TRUE): SLO	OPE : Include units! (45° = 100%)
Sample #	□m or ⊠ft?		<pre>(43 = 100%) (43 = 100\%) (43 = 100\%)</pre>
Depth to which soil examinedNA (soils not examined) Organic layer depth cm or $\Box >1 m$ Mineral layer below organic?depth Mottling in top 30 cm?depth Depth to water table: Depth to obstruction: nature of obstruction: Stoniness: \Box very little (<1%)/ \Box moderate (2-25%)/ \Box very (>25%) pH: measured in \Box soil or \Box interstitial water vonPost decomposition (peat substrates only) at deep	HYDROLOGIC REGIME:	HABITAT PATCHINESS (c present): Fairly uniform MICROTOPOGRAPHY: N	
AVERAGE TEXTURE: DRAINAGE & MOISTURE REGIME (see MAPPSS key): gravel very poorly drained sand poorly drained loamy sand / sandy loam somewhat poorly drained loam somewhat poorly drained silt loam well drained clay loams well drained sandy clay / clay somewhat excessively drained muck muck	BEDROCK TYPE: Igneous granite dioritic gabbroic Metamorphic slate/phyllite schist/gneiss Sedimentary limestone other details? Limy marine shale	TOPOGRAPHIC POSITION D drainage channe D drainage channe N narrow valley T toe of slope L lower slope M middle slope T hillside terrace U upper slope E cliff/ledge S ridge, summit, cr	Image:

THREATS TO COMMUNITY?

MANAGEMENT / PROTECTION NEEDS?

OTHER COMMENTS: animal use, species distribution notes, etc.

This community is a fairly small patch but is mature and has well-developed forest structure; there are few invasives.

Survey Area:

IV. SUMMARY AND RANKING Community name & EO#: Hardwood river terrace forest /Upper floodplain hardwood forest

Applicable National Type:	NVC CODE:	Comment re fit to type?									
	CEGL00										
COMMUNITY RA	NKING										
1. CURRENT CONDITION and quality of the community itself.											
• Comment on the species composition and biological structure of the community (species diversity, indicator species, development/maturity, etc.) For forests: Do you consider this to be old growth? If so, based on what?											
Not particularly enriched (no sugar maple, little basswood); nor particularly diverse (due to shading) but spring ephemeral community not assessed; not old growth although mature.											
 Natural and anthropogenic disturbance within the community (check off, then describe extent and how recent below) Logging – most recently cyrs ago Agriculture / pasture Fire Wind or ice damage Impoundment Exotic plants Agriculture / pasture Adjacent powerline corridor; snowmobile trail, otherwise seems fairly intact. 											
List disturbance(s): to what degree have these altered natural ecological pro	cesses, and/or do th	ney appear to effect the population?									
 A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor). B – Some signs of human disturbance or degradation, but community generally intact. C – Signs of human disturbance or degradation, community compromised in some significant way. D – Highly disturbed (multiple impacts causing community to be drastically altered). 											
2. SIZE / QUALITY: What is the approximate size of the community occurrence?	2-3	_ 🗌 acres / 🗌 hectares									
		ough adjacent land use									
Size / Quality Rank: 🗌 A – Excellent 🔲 B – Good 🗌] C – Fair 🛛	D – Poor									
3. LANDSCAPE CONTEXT of the area surrounding the community:											
What land uses and/or natural communities surround the observed area? D around the observed area, and to what degree this may affect the observed be protected from effects of adjacent land uses? Powerline; road (west); not fully assessed due to limited study area.											
 A – Community surrounded by >= 1000 acres of undisturbed landso B – Community surrounded by fairly intact landscape, though there C – Community surrounded by fragmented forest or rural landscape D – Surrounding area developed. 	may be cuts nearby										
OVERALL RANK for Community A – Excellent B based on your experience Comments: Small size, does not comport 100% with published description		ir <mark>□ D – Poor</mark> □ E – Extant									

NATURAL COMMU	INITY SURVEY	Survey Area:	Obs. Pt.
MNAP reviewed / ve	rified rank	□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – I	Extant
Date:	Reviewer:	Rationale:	

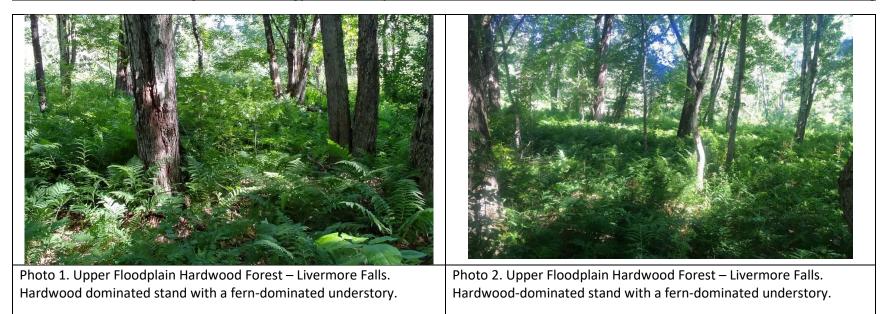
PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

LAYER	plot #									
TREE list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout!										
DEADWOOD (use tree plot)LARGE: (≥ 10cm dia); measurelength in plot & middle dia):LIST DOM. SPP (IF KNOWN)SMALL (< 10 cm diameter):1: < 5% 2: 6-24% 3: 25%+										
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius										
SHRUB cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius										
HERB cover class [*] by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall	Species			Species			Species			
QUAD SIZE: 1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember the zeros for spp present in some but not all herb quads.										
BRYOID ground-layer mosses, liverwort, lichens in herb quads.										
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus; identified to species.										
REMARKS:		 <u> </u>	1			<u> </u>		1	<u> </u>	

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330

Central Maine Power New England Clean Energy Connect Project



Project

I. IDENTIFIERS / LOCATION

Site Name Hardwood		on River Terrace Hardwood /Upper Floodplain	Obs. Pt. #:	Quadcode:	
Field-assigne	ed Community	Type: <mark>As above</mark>		USGS 7.5' Quad Name:	
		Madison West			
	n or classificati position is app	otion, although	Town: Anson		
MNAP REVI	EWED/EdITEI	County: Somerset			
		ION: for each landowner		Date: 27 July 2018	
Мар	Lot	Name (& address if new landowner)			
				Surveyors: A. V. Gilman	
				SourceCode: F	
				Biophysical Region:	

GPS Coordinates (X NAD 83, UTM Zone 19N; C Other-please specify) Lat. 44.853352, Long. -69.886138 Directions to occurrence:

Park under CMP powerlines on Madison Street, north of the Carrabasset Stream, and follow powerlines S across an agricultural field (in corn in 2018) to riverside; community is on the W side of the powerlines between the cornfield and the river.

Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:	Confidence Extent:
Areal delimited	Y - Confident full extent of feature IS known
☐ Mapped to within 12.5 m of actual location	N - Confident full extent is NOT known
Greater uncertainty (please indicate)	? - Uncertain whether full extent is known
50 m / ft / km / miles	

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

The community is on an upper terrace associated with Carrabasset Stream not for above its confluence with the Kennebec River (and likely back-flooded from the river at extremes). The riverside terrace is silver maple floodplain forest; this area is slightly upgradient and has a different community that is dominated by green ash and red oak with minor component of elm. The age structure is young except for a few large red oak and green ash. It is not an enriched community.

The forest is rather heavily invaded by invasive honeysuckles (much more so than when observed by the same surveyor in 2007); these comprise an understory of about 40%-50% cover overall. Understory herbs are typical, but lack elements of richness such as blue cohosh, wild leek, etc.

It is bounded south by silver maple floodplain forest, a narrow strip along river's edge (in the surveyor's judgement too narrow to consider as a natural community although containing some typically large trees). It is bounded north by cornfield

Note, as can be seen on aerial photos, the overall canopy is of small trees, vs. areas of larger trees upstream on the N side of the Carrabasset River.

SAMPLE TYPE:	Additional sampling recommended?
Brief descriptive – NOT SUFFICIENT FOR DOCUMENTING NEW EOS	🗌 <u>Yes</u> 🛛 No
X_ Generalized cover estimates & dbhs (p2)	Photos: 🗌 Yes 🗌 No
Nested plot samples (N =) (attach)	

II. VEGETATION BY STRATA

Community	name	&	EO#
Community	nunio	~	-0"

TREE LAYER (canopy plus emergents, everything ≥ 10 cm dbh)										
TOTAL COVER OF <5% 10% 20% 30	JM: 50% 60% 70% 80%	Total Basal Area: ft²/acre <mark>NC</mark>	Conifer %:0	Canopy height Supercanopy spp?						
Species name/code Quercus rubra Fraxinus penns Ulmus americana	Cover class* 9 63 9	Dbh range ⊠in ⊡cm 20"-24" 8"-14" 3"-16"	Core ages	Species name/code	Cover class*	Dbh range ☐in ☐cm				
At field edge: one basswood, some black cherry; on slightly higher elevation.										

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

TOTAL COVER OF STRATUM:	<mark><5%</mark> 10%	20% 30% 40% 50% 60% 70%	80% 90+%
Species name/code	Cover class*	Species name/code	Cover class*
Ulmus americana	<mark>3</mark>		check here if plot data are
Fraxinus pensilvanica	<mark>3</mark>		attached
			instead

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5%	10%	20%	30%	40%	50%	60%	<mark>70%</mark>	80%	90+%	
Species name/code	Cover cla	Spe	cies na	ame/co	de		Cov	er class*	ah a ah h ana if		
Lonicera cf. morrowii	<mark>37</mark>										check here if plot data are
											attached
											instead

TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%		cular plants <u>plus_</u> any woody plants < DOMINANCE: tree regen graminoid0_	%; shrub	
Species name/code	Cover class*	Species name/code	Cover class*	check here if
Onoclea sensibilis	<mark>19</mark>	Rosa multiflora	<mark>1</mark>	plot data are
Athyrium angustum	<mark>3</mark>			attached
Matteuccia struthiopteris 9		Note absence: cinnamon fern,		instead
Circaea canadensis 1		Interrupted fern		
Viola pensylvanica	1			
Solidago flexicaulis	1			
Geum canadense	1			
Carex cf. blanda	<mark>1</mark>			
		No spring ephemerals were observed due to mid-summer site visit.		

BRYOID LAYER (all ground-layer non-vascular plants; do not include epiphytes)							
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60% 70	0% 80% 90+% DOMINANCE: bryophytes_	<mark><5%%</mark> lichens	0%				
Species name/code C	Cover class* Species name/code	Cover class*	check here if				
None observed			check here if				

INA I	Survey Are	a.	UDS. P	τ.
			plot data are	
			attached	
			instead	

*cover classes (midpoint): < 2%= 1, 2-5%= 3, 6-12%= 9, 13-24%= 19, 25-49%= 37, 50-74%= 63, 75-100%= 87

	o D+
au	s. Pt.

ADDITIC taken	NAL SPECIES \	within area w	here vege	OTHER PLANT SPP seen in community (spp codes), for complete plant species list		
Stratum	Species code	Cover class	Stratum	Species code	Cover class	Black cherry

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (ro	ooting zone):	ELEVATION: 250 ft	ASPECT (TRUE):	SLOPE :	Include units! (45º = 100%)
Sampl	e #	🗌 m or 🖾 ft?		<mark>0%-2%</mark>	, estimated
				🗌 meas	ured 🛛 estimated
Depth to which soil examinedN	A (soils not examined)	HYDROLOGIC REGIME:			be zones or patches if
Organic layer depthcm	n or □>1 m	🛛 upland	present): Fairly un	nitorm	
Mineral layer below organic?	depth	nontidal wetland:			
Mottling in top 30 cm?depth	١	☐ perm flooded ☐ semiper flooded			
Depth to water table:		Seasonally fld.			
Depth to obstruction: natu	ure of obstruction:	🔲 tidal – irreg. fld.			ally level, with low
Stoniness: very little (<1%)/ m	noderate (2-25%)/ 🗌 very (>25%)	☐ tidal – reg. fld. ☐ saltwater	ridges parallel field.	to strear	n; rises gently to
pH: measured in 🗌 soil	I or interstitial water	brackish freshwater			
vonPost decomposition (peat substra	ates only) at deep	unknown			
					SURFICIAL DEPOSIT:
AVERAGE TEXTURE:	DRAINAGE & MOISTURE REGIME (see MAPPSS key):	BEDROCK TYPE:	TOPOGRAPHIC POS		_
☐ gravel	very poorly drained	☐ Igneous ☐ granite	D drainage cha		bedrock
☐ sand	poorly drained	dioritic	P low plain, lev	/el	☐ talus slope
Ioamy sand / sandy loam	_ , ,	gabbroic	□ N narrow valle	у	☐ glacial till
🗌 loam	somewhat poorly drained	Metamorphic Slate/phyllite	☐ T toe of slope		moraine
🔲 silt Ioam	moderately well drained	schist/gneiss	L lower slope		esker/outwash
🗌 clay loams	well drained	Sedimentary	☐ M middle slope	e	glacial delta
sandy clay / clay	somewhat excessively drained	☐ limestone □ other	T hillside terrad	ce	Iacustrine/fluvial
□ peat	excessively drained		U upper slope		marine
 □ muck		details? <mark>Limy marine</mark> shale	E cliff/ledge		🗌 aeolian
			🗌 S ridge, summ	iit, crest	other:

THREATS TO COMMUNITY?

MANAGEMENT / PROTECTION NEEDS?

OTHER COMMENTS: animal use, species distribution notes, etc.

	MARY AND RANKING			forest /Upper floodplain hardwood fores
pplicable	National Type:		NVC CODE: CEGL00	Comment re fit to type?
		COMMUN	NITY RANKING	
CURF	RENT CONDITION and quality	of the community itself.		
•			cal structure of the commu sider this to be old growth?	nity (species diversity, indicator species, If so, based on what?
	Not particularly enriched (r community not assessed; f			se (due to shading) but spring ephemera
•				scribe extent and how recent below)
	Logging – most recentl Agriculture / pasture	y c yrs ago	Animal effects (ins Erosion	ect outbreaks, browsing)
	☐ Fire ☐ Wind or ice damage		Dumping or Mining	
	Impoundment Exotic plants		Trails / roads	nt powerline corridor; adjacent farm field
				they appear to effect the population?
	ded by honeysuckle; this may a			
□ A □ B □ C		disturbance (or long enouge bance or degradation, but o or degradation, community	gh ago that effects are no lo community generally intact. y compromised in some sign	nger visible or are extremely minor).
□ A · □ B · □ C · □ D ·	– No apparent signs of human – Some signs of human disturt – Signs of human disturbance	disturbance (or long enouge bance or degradation, but o or degradation, community	gh ago that effects are no lo community generally intact. y compromised in some sign	nger visible or are extremely minor).
□ A □ B □ C □ D SIZE / 0 Wr	 No apparent signs of human Some signs of human disturt Signs of human disturbance Highly disturbed (multiple important) QUALITY: nat is the approximate size of the size	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community t ne community occurrence?	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered).	nger visible or are extremely minor). nificant way.
□ A · □ B · □ C · □ D · SIZE / (Wr (Ex	 No apparent signs of human Some signs of human disturb Signs of human disturbance Highly disturbed (multiple important of the approximate size of the approximate size of the acclusive of lands E, and exclusion 	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to ne community occurrence? sive of an island W). Only	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). ?7 acres observed in the project stu	nger visible or are extremely minor). hificant way. acres / hectares dy area.
□ A · □ B · □ C · □ D · SIZE / (Wr (Ex	 No apparent signs of human Some signs of human disturt Signs of human disturbance Highly disturbed (multiple important) QUALITY: nat is the approximate size of the size	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to ne community occurrence? sive of an island W). Only	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). ?7 acres observed in the project stu	nger visible or are extremely minor). nificant way.
A · B · C · D · SIZE / (Wr (Ex	 No apparent signs of human Some signs of human disturb Signs of human disturbance Highly disturbed (multiple important of the approximate size of the transition of lands E, and exclusion of lands E, and exclusion of the natural extent of the matural extent e	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to ne community occurrence? sive of an island W). Only	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 27 acres observed in the project stu Has been truncated th	nger visible or are extremely minor). hificant way. acres / hectares dy area.
□ A □ B □ C □ D SIZE/(Wr (Ex Size) Size)	 No apparent signs of human Some signs of human disturb Signs of human disturbance Highly disturbed (multiple important) QUALITY: nat is the approximate size of the approximate size of the clusive of lands E, and exclusion Covers the natural extent of the size of the	disturbance (or long enougo bance or degradation, but of or degradation, community bacts causing community t ne community occurrence? sive of an island W). Only is community type - Excellent B – Go	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres 0bserved in the project stu Has been truncated the od C – Fair	nger visible or are extremely minor). nificant way. acres / hectares dy area. irough adjacent land use
A - B - C - C - D - SIZE / (Wr (Ex Siz Siz LANDS hat land ound the protected	- No apparent signs of human - Some signs of human disturb - Signs of human disturbance - Highly disturbed (multiple im QUALITY: nat is the approximate size of the clusive of lands E, and excluse Covers the natural extent of the ze / Quality Rank: A	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to be community occurrence? sive of an island W). Only is community type - Excellent $\square B - Go$ surrounding the communit ies surround the observed degree this may affect the of d uses?	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres observed in the project stu DHas been truncated the od D C – Fair y: I area? Describe the types a observed community. To w	onger visible or are extremely minor). nificant way. □ acres / □ hectares dy area. urough adjacent land use] D – Poor and extent of anthropogenic disturbance hat degree can the observed community
A - B - C - D - SIZE / (Wr (Ex Siz Siz Siz LANDS hat land ound the protected	- No apparent signs of human - Some signs of human disturb - Signs of human disturbance - Highly disturbed (multiple im QUALITY: nat is the approximate size of the clusive of lands E, and excluse Covers the natural extent of the ze / Quality Rank: A	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to be community occurrence? sive of an island W). Only is community type - Excellent $\square B - Go$ surrounding the communit ies surround the observed degree this may affect the of d uses?	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres observed in the project stu DHas been truncated the od D C – Fair y: I area? Describe the types a observed community. To w	onger visible or are extremely minor). nificant way. acres / acres dy area. brough adjacent land use D – Poor and extent of anthropogenic disturbance
A B B C D SIZE / (Wr (Ex C) Siz Siz LANDS //hat land round the protected	- No apparent signs of human - Some signs of human disturb - Signs of human disturbance - Highly disturbed (multiple im QUALITY: nat is the approximate size of the clusive of lands E, and excluse Covers the natural extent of the ze / Quality Rank: A	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to be community occurrence? sive of an island W). Only is community type - Excellent $\square B - Go$ surrounding the communit ies surround the observed degree this may affect the of d uses?	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres observed in the project stu DHas been truncated the od D C – Fair y: I area? Describe the types a observed community. To w	onger visible or are extremely minor). nificant way. □ acres / □ hectares dy area. urough adjacent land use] D – Poor and extent of anthropogenic disturbance hat degree can the observed community
A B B C D SIZE / (Wr (Ex C) Siz Siz LANDS hat land ound the protected	- No apparent signs of human - Some signs of human disturb - Signs of human disturbance - Highly disturbed (multiple im QUALITY: nat is the approximate size of the clusive of lands E, and excluse Covers the natural extent of the ze / Quality Rank: A	disturbance (or long enough bance or degradation, but of or degradation, community bacts causing community to be community occurrence? sive of an island W). Only is community type - Excellent $\square B - Go$ surrounding the communit ies surround the observed degree this may affect the of d uses?	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres observed in the project stu DHas been truncated the od D C – Fair y: I area? Describe the types a observed community. To w	onger visible or are extremely minor). nificant way. □ acres / □ hectares dy area. urough adjacent land use] D – Poor and extent of anthropogenic disturbance hat degree can the observed community
A - B - D - C - D - SIZE / C Wr (Ex C SIZE / C Wr (Ex C SIZE / C Wr (Ex C SIZE / C C Wr C SIZE / C C SIZE / C SIZE	- No apparent signs of human - Some signs of human disturb - Signs of human disturbance - Highly disturbed (multiple im QUALITY: nat is the approximate size of the clusive of lands E, and excluse Covers the natural extent of the ze / Quality Rank: A	disturbance (or long enougo or degradation, community pacts causing community to acts causing community to be community occurrence? sive of an island W). Only is community type - Excellent $ \mathbf{B} - \mathbf{Go} $ surrounding the communities surround the observed degree this may affect the of d uses? use to limited study area. T	gh ago that effects are no lo community generally intact. y compromised in some sign to be drastically altered). 7 acres 7 acres 0bserved in the project stu Has been truncated the od $\Box C - Fair$ y: I area? Describe the types a observed community. To w there appear to be larger co	onger visible or are extremely minor). hificant way. ☐ acres / ☐ hectares dy area. brough adjacent land use] D – Poor and extent of anthropogenic disturbance hat degree can the observed community mmunities both upstream and down.

- **C** Community surrounded by fragmented forest or rural landscape.
- D Surrounding area developed.

OVERALL RANK for Community

□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant

based on your experience Comments: Does not fully comport with published description (too much green ash, lack of diversity), young age, invaded by honeysuckle

MNAP reviewed / ve	rified rank	□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant
Date:	Reviewer:	Rationale:

PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

LAYER	plot #										
TREE list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout!											
DEADWOOD (use tree plot)											
LARGE: (≥ 10cm dia); measure length in plot & middle dia): LIST DOM. SPP (IF KNOWN) SMALL (< 10 cm diameter): 1: < 5% 2: 6-24% 3: 25%+											
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius											
SHRUB											
cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius											
HERB	Species				Species			Species			
cover class [*] by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall											
QUAD SIZE: 1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember the zeros for spp present in some but not all herb quads.											
BRYOID ground-layer mosses, liverwort, lichens in herb quads.											
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus; identified to species.											
REMARKS:		-1	<u> </u>	1			I		1	1 1	

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330

Central Maine Power New England Clean Energy Connect Project



Photo 1. Upper Floodplain Hardwood Forest – North Anson. Community is on an upper terrace associated with Carrabassett Stream. Forest structure is young. Photo 2. Upper Floodplain Hardwood Forest – North Anson. Young hardwood stand with fern and other typical understory herbs, but lacking in indicators of rich soil.

Project _____

I. IDENTIFIERS / LOCATION

Site Name	e: Robinson	Quadcode:		
Field-assigne	ed Community	Type: Enriched Hardwood Forest		USGS 7.5' Quad Name:
				The Forks
		ion difficulties? Describe: Forest matches natural community descrid wetland, which required review of both forested wetland and upland		Town: Moxie Gore
types		- · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
MNAP REVI	EWED/EdITEI	D TYPE:	Occurrence #:	County: Somerset
			Occurrence #.	County. Comerset
LANDOWNE		ION: for each landowner		Date: 7/26/18
Мар	Lot	Name (& address if new landowner)		
				Surveyors: M. Lin
		SourceCode: F		
		Biophysical Region:		

GPS Coordinates (☑ NAD 83, UTM Zone 19N; □ Other-please specify) Lat. 45.35697517, Long. -69.89488551 Directions to occurrence: Enriched Hardwood community is located between Robinson's Way and Moxie Lake Road. The community is just east of Robinson's Way and approximately 0.2 mile north of Moxie Lake Road. The community extended south, beyond the Project Area delineated for the survey effort

Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:	Confidence Extent:
Areal delimited	Y - Confident full extent of feature IS known
Mapped to within 12.5 m of actual location	□ N - Confident full extent is NOT known
Greater uncertainty (please indicate)	? - Uncertain whether full extent is known
50 m / ft / km / miles	

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

The forest is dominated by Black Ash, American Elm, and Ironwood. Sugar Maple and Yellow Birch were also common. Maiden hair fern and silver spleenwort are common. Wetter areas contained jewel weed and dwarf enchanters nightshade as well as other herbaceous species. Basswood was observed, though infrequent.

The community is on a generally north-facing slope with a low gradient of 0-10% slope. Loamy soils ranged from silty sandy loam to silty loam. The soils were rich and contained well developed structure in the more upland areas.

The community extended beyond the boundaries of our survey area, to the south and was therefore not mapped beyond that point

SAMPLE TYPE:	Additional sampling recommended?
X Brief descriptive – NOT SUFFICIENT FOR DOCUMENTING NEW EOS	□ <u>Yes</u> □ No
Generalized cover estimates & dbhs (p2)	Photos: 🗌 Yes 🔲 No
Nested plot samples (N =) (attach)	

Community name & EO#:

II. VEGETATION BY STRATA

VEGETATION D			.,					
TREE LAYER (ca	nopy plu	s emergents, every	thing \geq	10 cm dbh)				
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60 % 70% 80% 90+%			Total Basal Area: ft²/acre <mark>NC</mark>	Conifer %:0	Canopy height Supercanopy spp?		or <mark>ft</mark>	
Species name/code	Cover class*	Dbh range ∐in ⊠cm	Core ages	Species name/code	Cover class*	Dbh range □in □cm	Core ages	Check
Acer saccharum	19	10-60	NA					here if plot data are
Fraxinus nigra	19	10-50	NA					attached
Ulmus americana	9	10-25	NA					instead
Carpinus caroliniana	9	10-20						

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

TOTAL COVER OF STRATUM:	<5% 10%	20% <mark>30</mark> % 40% 50% 60% 70%	80% 90+%
Species name/code	Cover class*	Species name/code	Cover class*
Ulmus americana	9		check here if plot data are
Acer saccharum	19		attached
Carpinus caroliniana	19		instead
Tilia americana	1		

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5%	10%	<mark>20%</mark>	30%	40%	50%	60%	70%	80%	90+%	
Species name/code	Cover cla	ass*	Spe	cies na	ime/co	de			Cov	er class*	ahaak hara if
Acer saccharum	9										 check here if plot data are
Viburnum lantanoides	3										attached
Fraxinus nigra	9										instead

HERB / DWARF SHRUB LAYER (all herbaceous vascular plants <u>plus</u> any woody plants < 1 m tall)

TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% <mark>50</mark> % 60%	6 70% 80% 90+%	DOMINANCE : tree regen%; shrub%; graminoid0%; forb75%							
Species name/code	Cover class*	Species name/code	Cover class*	ahaak hara if					
Adiantum pedatum	19			check here if plot data are					
Deparia acrostichoides	19			attached					
Matteuccia struthiopteris	9			instead					
Aralia nudicaulis	9								
Polystichum acrostichoides	3								

BRYOID LAYER (all ground-layer nor	n-vascular plants	; do not include epiphytes)		
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70% 80% 90+%	DOMINANCE: bryophytes<5%	% lichens	0%
Species name/code	Cover class*	Species name/code	Cover class*	check here if
Minimal and not keyed out	1			plot data are
				attached
				instead

*cover classes (midpoint): < 2%=1, 2-5%=3, 6-12%=9, 13-24%=19, 25-49%=37, 50-74%= 63, 75-100%=87

ADDITIC taken	NAL SPECIES v	vithin area w	here vege	OTHER PLANT SPP seen in community (spp codes), for complete plant species list		
Stratum	Species code	Cover class	Stratum	Species code	Cover class	Enchanters nightshade, maple, white ash, yellow birch, small component of balsam fir, knapweed,
						jewelweed and sedges (in wetter areas), jack in the
						pulpit, woodfern

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (rooting zone): Only brief	inspection of soils conducted	ELEVATION: 1000	ASPECT (TRUE):	SLOPE :	Include units! (45º = 100%)
Sample	e #	🗌 m or <mark> ft?</mark>	North	0%-5	
				🗌 meası	ured 🛛 estimated
□ gravel (see MAPPSS key): □ sand □ very poorly drained □ loamy sand / sandy loam □ poorly drained □ loam ⊠ somewhat poorly drained ⊠ silt loam ⊠ moderately well drained □ clay loams □ well drained		HYDROLOGIC REGIME:			e zones or patches if
Organic layer depthcm	or 🔲 >1 m	🛛 upland			reas with jewelweed damp silty loam and
Mineral layer below organic?	_depth	nontidal wetland:	evidence of surface Higher elevation a		
Mottling in top 30 cm?depth		☐ perm flooded ☐ semiper flooded	mineral soil with a	sandy loar	n texture
Depth to water table:		☑ seasonally fld. ☐ saturated			
Depth to obstruction: natu	re of obstruction:	🔲 tidal – irreg. fld.	MICROTOPOGRAPH		low hill with here wetland and
Stoniness: 🛛 very little (<1%)/ 🗌 m	oderate (2-25%)/ 🗌 very (>25%)	☐ tidal – reg. fld. ☐ saltwater	upland soils m		
pH: measured in 🗌 soil	or 🗌 interstitial water	☐ brackish ☐ freshwater			
vonPost decomposition (peat substra	ates only) at deep	unknown			
AVERAGE TEXTURE:	DRAINAGE & MOISTURE REGIME	BEDROCK TYPE:	TOPOGRAPHIC POS	BITION	SURFICIAL DEPOSIT:
☐ gravel			🗌 D drainage cha	annel	bedrock
□ sand		granite	🗌 P low plain, lev	vel	☐ talus slope
🛛 loamy sand / sandy loam	_ , ,	gabbroic	□ N narrow valle	у	☐ glacial till
🗌 loam		Metamorphic Slate/phyllite	T toe of slope		moraine
🔀 silt loam		schist/gneiss	L lower slope		esker/outwash
🗌 clay loams	—	Sedimentary	🛛 M middle slope	e	glacial delta
🔲 sandy clay / clay	somewhat excessively drained	☐ limestone ☐ other	T hillside terra	се	Iacustrine/fluvial
🗆 peat	☐ excessively drained	details?	U upper slope		marine
🔲 muck			E cliff/ledge		🗌 aeolian
			🗌 S ridge, summ	nit, crest	other:

THREATS TO COMMUNITY? Logging potential, evidence of past logging

MANAGEMENT / PROTECTION NEEDS?

OTHER COMMENTS: The forest is relateively well delineated based on the distribution of the Northern maindenhair fern and silvery spleenwort. There is a mix of upland and wetland areas but an overall dominance of the enriched hardwood characteristics.

/. SUMMARY AND RANKING Community name & EO#:	Hardwood river terr	ace forest /Upper floodplain hardwood fores
Applicable National Type:	NVC CODE: CEGL00	Comment re fit to type?
COMMUNITY	(RANKING	I
I. CURRENT CONDITION and quality of the community itself.		
 Comment on the species composition and biological s development/maturity, etc.) For forests: Do you consider Second- or third-growth forest, some larger trees, but of developing nicely, though. Indicator species for this has species were minimum 	r this to be old growt dominated by mid-s	h? If so, based on what? ized trees and saplings. Forest structure i
 Natural and anthropogenic disturbance within the comm Logging – most recently c>50 yrs ago Agriculture / pasture Fire Wind or ice damage Impoundment Exotic plants 		(insect outbreaks, browsing)
ist disturbance(s): to what degree have these altered natural ecologic	al processes, and/or	do they appear to effect the population?
Past logging likely had a large impact on the population, however it uppear to be within healthy ranges. Wind damage was evident though		
ogging has occurred in the past, as evidenced by decaying stumps. I		
 A – No apparent signs of human disturbance (or long enough a B – Some signs of human disturbance or degradation, but com C – Signs of human disturbance or degradation, community co D – Highly disturbed (multiple impacts causing community to be 	munity generally inta mpromised in some	act. significant way.
SIZE / QUALITY: What is the approximate size of the community occurrence?	3-5	🛛 acres / 🗌 hectares
		d through adjacent land use
Size / Quality Rank: $\Box \mathbf{A}$ – Excellent $\boxtimes \mathbf{B}$ – Good	C – Fair	D – Poor
3. LANDSCAPE CONTEXT of the area surrounding the community: What land uses and/or natural communities surround the observed are around the observed area, and to what degree this may affect the observed be protected from effects of adjacent land uses?	a? Describe the typ	

Area is near roads, powerline corridor and houses, however there is fairly contiguous forest, in different stages of development, nearby

\Box A – Community surrounded by >= 1000 acres of undisturbed landscape.	
\boxtimes B – Community surrounded by fairly intact landscape, though there may be cuts nearby.	
C – Community surrounded by fragmented forest or rural landscape.	
D – Surrounding area developed.	

NATURAL COMMUN	NITY SURVEY	Survey Area:	Obs. Pt.
OVERALL RANK for based on your experi Comments: Nice com limits of survey area. hardwood matrix fore	ence imunity with typical indicato Within	\square A – Excellent \square B – Good \square C – Fair \square D – Poor \square E – Extant or species present; appears to be relatively small, although entire extent is not	
MNAP reviewed / ver	ified rank	□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant	
Date:	Reviewer:	Rationale:	

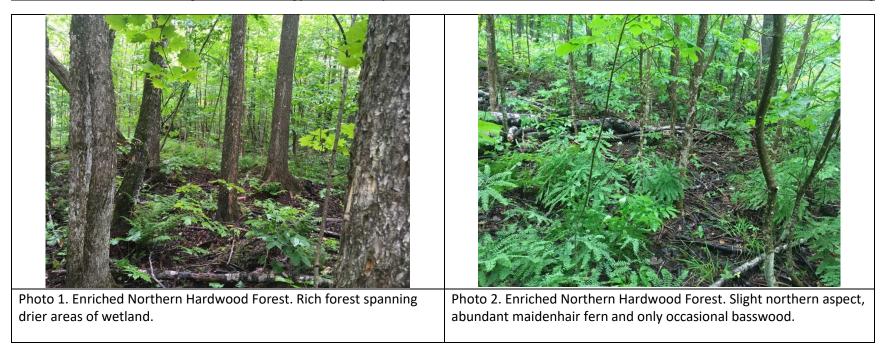
PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

Community type:										EOnum:		
LAYER	plot #											
TREE list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout!												
DEADWOOD (use tree plot)												
<u>LARGE</u> : (≥ 10cm dia); measure length in plot & middle dia): LIST DOM. SPP (IF KNOWN) <u>SMALL</u> (< 10 cm diameter): 1 : < 5% 2 : 6-24% 3 : 25%+												
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius												
SHRUB												
cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius												
HERB	Species				Species					Species		
cover class [*] by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall												
QUAD SIZE: 1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember the zeros for spp present in some but not all herb quads.												
BRYOID ground-layer mosses, liverwort, lichens in herb quads.												
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus;												
identified to species. REMARKS:												
In box on p.3, list plant spp. pre	esent in the commu	nity bu	t not in	the sa	ample plots so we hav	e a c	ompl	ete sp	beci	es list. 75-100% 87		

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330

Central Maine Power New England Clean Energy Connect Project



Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC Segment 1					vey Site:	FII	FID #14 GALKAM001DMC			
Quad name:	Tumbledown Mountain Quadrangle					ad code:	US	USGS X24K45909			
County:	Somerse	et		Tov	vn:	Ap	Appleton Township				
Plant Name: Galium Kamtschaticum Image: Constraint of the second sec											
Date: 7/11/18	Surve	yor(s): Duane (Choque	tte & Tom F	Errico			Sourcecode ()	MNAP assigns):		
						eone: 518-222-1383 Email: dchoquette			uette@trcsolutions.com		
GPS Datum WGS 84 NAD 83 NAD 27 Other GPS Coordinates UTM Zone 19N Decimal Degrees (dd.ddd) Deg Min Sec (dd mm ss) GPS (dd mm.mm) Other North West Additional Coordinates Lat: 45.46625971 Long: -70.46817762 Directions to Occurrence: North slope of Tumbledown Mountain, access from Appleton Road to the west. Image: Constant Science of Tumbledown Mountain, access from Appleton Road to the west.											
Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.											
MAP: Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation.											
Locational Uncertainty (how closely can you map the feature to its actual location?) \square mapped to w/in 12.5 m of actual location; \square greater uncertainty (estimate = $\square m / \square ft / \square km / \square miles$); \square aerial delimited											
\square mapped to w/in 12.5 m of actual location; \square greater uncertainty (estimate = $\square m / \square ft / \square km / \square miles$); \square aerial delimited Confidence in Observation of Population Extent											
Confidence in Observation of Population Extent Confident full extent of feature IS known; Confident full extent is NOT known; Uncertain whether full extent is known											
EO DATA		Phenology		Population Area			Vigor? 🖾 Normal 🗌 Other than normal Explain:				
# of Plants 506	ıre	 ☐ In leaf ☐ In bud ☐ In flower ☐ Immature ☐ Mature from Seed disposed 	ıit	1 square yard1 - 5 square yards5 - 20 square yards20 - 100 square yards100 sq yds to 1 acre1 acre +			Evidence disease, predation, etc? Explain: Browsing damage to tips of plants Yes				
80 % Vegetative 20 % Reproductiv	e	Dormant		 13 sq yds~area actual habita 30 sq yds~ area potential hal 			Type of reproduction? Explain: Fruit present Sexual Asexual Not Observed				
Other Comments:		1		1		1					
GENERAL DESCRIPTION											
Associated natural community: Northern Hardwood forest											
Associated plant species: Acer saccharum, Betula alleghaniensis, Acer pensylvanicum, Glyceria striata, Impatiens capensis, Thalictrum polygamin, Oxalis montana, Galium palustre, Circaea alpina, sambucus raecemosa Substrate/soil type: Mucky Mineral											
Threats to Population: Damage caused by moose wallowing and moose trails. Logging											
Conservation/Management/Research needs:											
Elevation	As	pect	% Slo	ope	Light	Tor	ograp	ohic Position	Moisture		
Min 2200 ft / m Max 2310 ft / m			☐ Fla □ 0- ⊠ 10 □ 35	at 10)-35	Open Partial Filtered Shade		Crest Upper Mid-sl	Slope ope Slope n	 ☐ Inundated ☐ Saturated (wet mesic) ☑ Moist (mesic) ☐ Dry-mesic ☐ Dry (xeric) 		

Project (MNAP assigns)

			1								
Photograph taken?	Specimen collected? ⊠ No □ Yes		Do other members of this genus occur at this site? \Box No \boxtimes Yes								
□ No	Collection #		If yes, are there hybridization issues? \boxtimes No; \square Yes; Explain								
Yes Yes	Repository		Are there identification issues? 🛛 No; 🗌 Yes; Explain								
Landowner name/address owner information on a se	for entire population (attach addi parate sheet):	itional	Phone		Is landowner aware of plant?						
			Tax map # (if known)		Is landowner protecting plant?						
		Lot # (if known)		Comments							
EO RANKING											
CURRENT CONDITION of the plant's immediate habitat. Is the habitat pristine or degraded? Note any disturbances within the plant habitat (check off, describe below to what degree these have altered natural ecological processes, or if they have any negative or positive effects on the population). Note how the disturbance(s) may influence success of the plant at the site.											
 ☐ Logging-most recently ☐ Agriculture / Pasture ☑ Animal effects (insect ☐ Wind or ice damage 			□ Dumping or mining □ ORV / Vehicle disturbance c plants on □ Other □ No Evidence of disturbance								
Describe: site is an old logging road, with a moose trail running down it. Plants are located on edge of moose trail.											
Condition A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor) Rank B – Some signs of human disturbance or degradation, but habitat generally intact C – Signs of human disturbance or degradation, and habitat compromised in some significant way D – Highly disturbed (multiple impacts causing habitat to be drastically altered) C Other / Habitat disturbed, consistent with needs of species / Explain:											
SIZE / QUALITY: How large is this population relative to typical populations of this species? unknown Does it appear to be capable of maintaining itself if its habitat remains basically intact? 🖾 Yes 🗌 No											
Size / Quality Rank \Box A – Excellent \boxtimes B – Good \Box C – Fair \Box D – Poor <u>Comments</u> : dense population flanking an old logging road. Surrounding habitat was logged 25+ years ago.											
LANDSCAPE CONTEXT of the area surrounding the plant habitat. What land uses and/or natural communities surround the observed area? Is the habitat fragmented? To what degree can the population be protected from effects of adjacent land uses?											
<u>Comments</u> : The surrounding land is all utilized for logging and is currently in a regenerative state from the last logging cycle.											
Landscape											
OVERALL RANK for EO based on your experience $\square \mathbf{A}$ – Excellent $\square \mathbf{B}$ – Good $\square \mathbf{C}$ – Fair $\square \mathbf{D}$ – Poor $\square \mathbf{E}$ – Extant											
<u>Comments</u> : Under current conditions the population will likely continue to expand, with occasional damage from moose wallowing in the wetter portions of the habitat.											
MNAP reviewed / verifie	_	A – Exce	ellent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	$\mathbf{D} - Poor \qquad \square \mathbf{E} - Extant$						
Date: Rev	viewer: R	ationale:									



Photo #1- Overview of multiple stems of *Galium kamtschaticum* in old logging trail/actively used moose path GALKAM001DMC.



Photo #2- Stem of flowering *Galium kamtschaticum* GALKAM001DMC.



Photo #3- Galium kamtschaticum GALKAM001DMC.



Photo #4- Habitat overview of *Galium kamtschaticum* for GALKAM001DMC.

Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	Segment 1			Survey Site: FID #14 GALKAM002DMC			KAM002DMC	
Quad name:	Tumble	lown Moun	tain Quadra	ngle	Quad cod	e:	USGS X24K45909		
County:	Somerse	t			Town:	_	Appleto	n Towr	ıship
Plant Name: Gal	ium Kamtso	haticum			New Dupdate Occurrence #:				
Date: 7/11/18	Surve	yor(s): Duane C	Choquette & To	m Errico			Source	cecode (N	INAP assigns):
Primary Surveyor maine 04072	Address: 6 A	Ashley Drive, S	carborough,	Ph	one: 518-22	2-1383	3 Emai	l: dchoqu	ette@trcsolutions.com
GPS Coordinates North Directions to Occu	GPS Datum □WGS 84 □NAD 83 □ NAD 27 □ Other GPS Coordinates □ UTM Zone 19N □ Decimal Degrees (dd.ddd) □ Deg Min Sec (dd mm ss) □ GPS (dd mm.mm) □ Other North West Additional Coordinates Lat: 45.46604628 Long: -70.46943957 Directions to Occurrence: North slope of Tumbledown Mountain, access from Appleton Road to the west. ☑ Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.								
	MAP:	Please attach a	a map, preferab	ly 1:24,0	00 scale top	o map	, showing th	he location	n of the observation.
Locational Uncertainty (how closely can you map the feature to its actual location?)									
EO DATA		Phenology	Popula	tion Area	a			Normal [Other than normal
# of Plants 16 ☐ Individuals ☐ Ramets Population Structs	ure	 ☐ In leaf ☐ In bud ☑ In flower ☐ Immature ☑ Mature fru 	a leaf \boxtimes 1 square yasa bud \square 1 – 5 squarea flower \square 5 – 20 squaren mature fruit \square 20 – 100 sq		e yards are yards quare yards		Explain: Evidence disease, predation, etc? Explain: Yes No		
95 % Vegetative 5 % Reproductive		Seed dispe	0.9 sq	yds~area	rea actual habitat		Type of reproduction? Explain: Fruit present ☑ Sexual □ Asexual □ Not Observed		
Other Comments:		1	50 sq 9	/ds~ area	potential h				
<u> </u>			(GENERA	AL DESCR	IPTIC	ON		
Associated natura	l community	: Northern Hard							
Circaea alpina, sa	Associated plant species: Acer saccharum, Betula alleghaniensis, Acer pensylvanicum, Glyceria striata, Impatiens capensis, Galium palustre, Circaea alpina, sambucus raecemosa, Corylus cornuta, Nabalus altissimus, Carex utriculata, Osmunda claytonia, Trillium undulatum Substrate/soil type: Mucky Mineral								
Threats to Popula	-		jacent to clearci	ut activiti	ies.				
Conservation/Mar			·····						
Elevation Min 2300 ft / m Max 2320 ft / m		pect N □ NE E ⊠ NW S □ SE W □ SW Flat or NA	% Slope ☐ Flat ⊠ 0-10 ☐ 10-35 ☐ 35+ ☐ Vertical	🛛 Fi			graphic Pos rest pper Slope id-slope ower Slope ottom	sition	Moisture Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic Dry (xeric)
							evel Plain		

			-		ussigns)					
Photograph taken?	Specimen collected? ⊠ No □ Yes		Do other membe	ers of this genus of	occur at this site?					
□ No	Collection #		If yes, are there l	hybridization iss	ues? 🛛 No; 🗌 Y	es; Explain				
Yes Yes	Repository		Are there identif	ication issues?	🛛 No; 🗌 Yes; E	xplain				
Landowner name/address owner information on a se	for entire population (attach a parate sheet):	dditional	Phone		Is landowner aware of plant?					
			Tax map # (if kno	own)	n) Is landowner protecting pl					
			Lot # (if known)		Comments					
	EO RANKING									
CURRENT CONDITION of the plant's immediate habitat. Is the habitat pristine or degraded? Note any disturbances within the plant habitat (check off, describe below to what degree these have altered natural ecological processes, or if they have any negative or positive effects on the population). Note how the disturbance(s) may influence success of the plant at the site.										
 ☐ Logging-most recently ☐ Agriculture / Pasture ☑ Animal effects (insect ☐ Wind or ice damage 			oundment ORV / Vehicle disturbance tic plants Image: Constraint of the second							
Describe: site is a junction of two old logging roads, with a hillside seep upslope										
Condition A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor) Rank B – Some signs of human disturbance or degradation, but habitat generally intact C – Signs of human disturbance or degradation, and habitat compromised in some significant way D – Highly disturbed (multiple impacts causing habitat to be drastically altered) Other / Habitat disturbed, consistent with needs of species / Explain:										
Does it appear to be capab Size / Quality Rank	large is this population relatively of maintaining itself if its line \mathbf{A} – Excellent \mathbf{A} forest was logged 25+ years a	nabitat remain B – Good	s basically intact? $\Box C - Fair$							
	KT of the area surrounding the ented? To what degree can the					nd the observed				
Comments: The surround	ling land is all utilized for log	ging and is cu	rrently in a regener	rative state from	the last logging c	ycle.				
Landscape A – Population surrounded by > = 1000 acres of undisturbed landscape Rank B – Population surrounded by fairly intact landscape, though there may be cuts nearby C – Population surrounded by fragmented forest or rural landscape D – Surrounding area developed Other / Explain:										
OVERALL RANK for F	EO based on your experience	A – Exce	llent $\square \mathbf{B} - \operatorname{Goot}$	od 🗌 C – Fair	D – Poor	\Box E – Extant				
MNAP reviewed / verifie	ed rank	A – Exce	llent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	$\Box \mathbf{E}$ – Extant				
Date: Rev	viewer:	Rationale:								

Photo #2- Stem of <i>Galium kamtschaticum</i> GALKAM002DMC and
surrounding herbaceous community.

Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	C Segment 1				Survey Site: FID #14 GALKAM003DMC			M003DMC		
Quad name:	Tumble	down Moun	tain Q	Juadran	gle	Quad cod	e:	USG	USGS X24K45909		
County:	Somers	et				Town:		Appl	Appleton Township		
Plant Name: Gali	ium Kamts	chaticum				\boxtimes	🛛 Ne	ew 🗌	Update	Occ	currence #:
Date: 7/11/18	Surv	eyor(s): Duane (Choquet	tte & Tom	Errico				Sourcecode	(MN/	AP assigns):
Primary Surveyor maine 04072						e: 518-22	2-13				e@trcsolutions.com
GPS Datum WGS 84 NAD 83 NAD 27 Other GPS Coordinates UTM Zone 19N Decimal Degrees (dd.ddd) Deg Min Sec (dd mm ss) GPS (dd mm.mm) Other North West Additional Coordinates Lat: 45.46598048 Long: -70.46956785 Directions to Occurrence: North slope of Tumbledown Mountain, access from Appleton Road to the west. Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.											
	MAP	Please attach	a map, p	preferably	1:24,000	scale top	o maj	ıp, showi	ing the locat	ion o	f the observation.
Locational Uncertainty (how closely can you map the feature to its actual location?)											
EO DATA		Phenology		Populatio	on Area						Other than normal
# of Plants 85	ıre	 ☐ In leaf ☐ In bud ☑ In flower ☐ Immature ☑ Mature from 		$\square 1 - 5$ $\square 5 - 20$ $\square 20 - 1$) square 100 squa	ard re yards are yards quare yards to 1 acre actual habitat		Explain Evidenc Yes No	Evidence disease, predation, etc? Explain:		
90 % Vegetative 10 % Reproductiv		Seed dispondent	ersing	☐ 1 acre 7 sq yds~ 50 sq yds	area act			Sexu Asex	Type of reproduction? Explain: Fruit present Sexual Asexual Not Observed		
Other Comments:				JU SY YUS	~ aica p		aun		observed		
				GE	NERAI	DESCR	ІРТІ	ION			
Associated natural	l community	y: Northern Hard	lwood f		-						
Associated plant s Osmunda claytoni Substrate/soil type	a, Carex gy	nandra	tula alle	eghaniensis	s, Acer p	ensylvani	cum,	,Glyceria	a striata, Imp	oatien	s capensis, Carex utriculata,
Threats to Populat	ion: Old Lo	ogging Road, Ad	jacent to	o clearcut a	activities	•					
Conservation/Mar	agement/Re	esearch needs:									
Elevation Min 2300 ft / m Max 2325 ft / m		spect N □ NE E ⊠ NW S □ SE W □ SW	35 🗌	at 10 0-35 5+	Light ☐ Ope ⊠ Part ☐ Filte ☐ Shae	n ial ered		Crest Upper Slo Mid-slop Lower Sl	e		oisture Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic
		Flat or NA	L Ve	ertical				Bottom Level Pla	uin		Dry (xeric)

			1		ussigns)		
Photograph taken?	Specimen collected? ⊠ No □ Yes		Do other membe	rs of this genus of	occur at this site?		
No	Collection #		If yes, are there hybridization issues? 🖾 No; 🗌 Yes; Explain				
Yes			Are there identif	cation issues?	🛛 No; 🗌 Yes; E	vnlain	
	Repository					xpiani	
Landowner name/address	for entire population (attach a	dditional	Phone		Is landowner aware of plant?		
owner information on a se	owner information on a separate sheet):					No	
			Tax map # (if kno	own)	Is landowner protecting plant		
			Lot # (if known)		Comments		
		EO RA	NKING		1		
CURRENT CONDITIO	N of the plant's immediate ha			graded? Note a	ny disturbances w	vithin the plant	
	e below to what degree these Note how the disturbance(s)				ey have any negat	tive or positive	
	20	□ E:		□ D			
Logging-most recently	~ 30 yrs ago	Fire	ndment	Dumping of ORV / Veh	icle disturbance		
Animal effects (insect		plants	Trails / Roa				
Wind or ice damage		Erosio					
Describe: The site is on an old logging road.							
Condition A – No ap	parent signs of human disturb	ance (or long	enough ago that ef	fects are no long	er visible or are e	xtremely minor)	
	signs of human disturbance of	-	-	•			
-	of human disturbance or degr		-	-	icant way		
	y disturbed (multiple impacts abitat disturbed, consistent wi	-	-	altered)			
		un neeus or sp	ecies / Explain.				
	large is this population relatively ble of maintaining itself if its h						
Size / Quality Rank		B – Good		\mathbf{D} – Poor			
Comments: Surrounding	forest was logged 25+ years a	igo, open log	ging cut located 75	to the west			
	KT of the area surrounding the nented? To what degree can th					nd the observed	
<u>Comments</u> : The surround	ling land is all utilized for log	ging and is cu	rrently in a regener	ative state from	the last logging c	ycle.	
Landscape 🗌 A – Popu	lation surrounded by $> = 1000$	0 acres of und	isturbed landscape				
	lation surrounded by fairly int	•	•	be cuts nearby			
-	lation surrounded by fragmen	ted forest or r	ural landscape				
	ounding area developed						
Other / E	explain:						
OVERALL RANK for H	EO based on your experience	A – Exce	llent $\mathbf{X} \mathbf{B} - \mathbf{Good}$	d 🗌 C – Fair	D – Poor	\mathbf{E} – Extant	
Comments: t.		—			_	_	
MNAP reviewed / verifie	ed rank	A – Exce	llent $\square \mathbf{R} - \mathbf{Good}$	d 🗌 C – Fair	D – Poor	E – Extant	
Date: Rev	viewer:	Rationale:					



Photo #1- Overview of multiple stems of *Galium kamtschaticum* in old logging trail drainage PEM wetland GALKAM003DMC.



Photo #2- Galium kamtschaticum GALKAM003DMC.



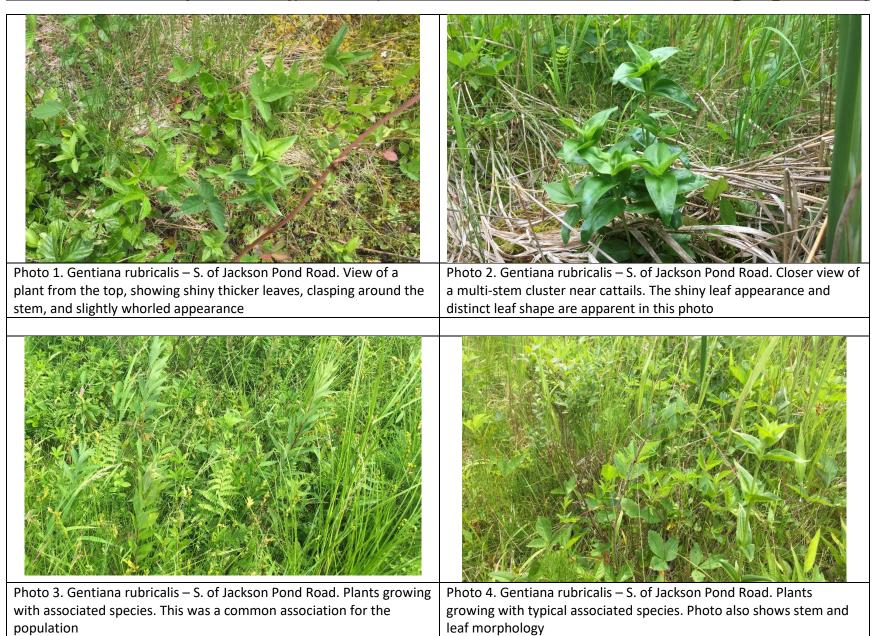


Photo #3- Galium kamtschaticum GALKAM003DMC displaying fruiting bodies. Photo #4- Galium kamtschaticum GALKAM003DMC leaf structure

	Project (MNAP assigns)
SPECIAL PLANT SURVEY	FORM

Site:	NECEC	CMP Power	Survey Site:	S. of Jackson Pond Road		
Quad name:	Binghar	n	Quad code:	45069A8		
County:	Somerse	et	Town:	Concord		
Plant Name: Ger	ntiana rubri	caulis	□ N	New 🛛 Update Occurrence #:		
Date: 6July2018	Surve	eyor(s): Art Gilman and Anna Ritch	ie	Sourcecode (MNAP assigns):		
Primary Surveyor 1 Conti Cir # 5, B		ilman and Briggs Environmental 541	Phone: (802) 479-7	7480 Email: avgilman@together.net		
GPS Datum □WGS 84 ⊠NAD 83 □ NAD 27 □ Other GPS Coordinates □ UTM Zone 19N ⊠ Decimal Degrees (dd.ddd) □ Deg Min Sec (dd mm ss) □ GPS (dd mm.mm) □ Other North West Additional Coordinates Lat. 45.023784, Long69.883264 Directions to Occurrence: From Me, Rte. 16 in Concord, take Jackson Pond Road to CMP powerlines. On foot, follow powerlines S over knoll: access/woods road diverges E from open corridor, but follow this around E side of marshy wetland and re-enter open corridor. Plants are at marsh edge mostly along E side of open corridor but extending around powerline structure and across corridor on the side of the marsh and somewhat uphill. Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.						
				ap, showing the location of the observation.		
Locational Uncertainty (how closely can you map the feature to its actual location?) \square mapped to w/in 12.5 m of actual location; \square greater uncertainty (estimate = \square m / \square ft / \square miles); \square confidence in Observation of Population Extent \square Confident full extent of feature IS known; \square Confident full extent is NOT known;						
EO DATA		Phenology Population	Area	Vigor? 🛛 Normal 🗌 Other than normal		
# of Plants 150 ☐ Individuals ☐ Ramets Population Structu 100 % Vegetative 0 % Reproductive	:	$ \begin{array}{ c c c c c c } \hline & In flower & \hline & 5 - 20 s \\ \hline & Immature fruit & \hline & 20 - 10 \\ \hline & Mature fruit & \hline & 100 sq \\ \hline & Seed dispersing & \hline & 1 acre - \\ \hline & Dormant & & \\ \hline & & \\ \hline \end{array} $	quare yards square yards 00 square yards yds to 1 acre	Explain: Evidence disease, predation, etc? Explain: Yes No Type of reproduction? Explain: Sexual Asexual Not Observed		
Other Comments:						
		GEN	ERAL DESCRIPT	TION		
Associated natura	l community	: Shallow marsh - sloping edge	<i></i>			
Associated plant s	species: Pack	kera shweinitziana, Geum aleppicun	n, Thelypteris palustr	ris, Platanthera psycodes,		
Substrate/soil type	e: Mapped as	s Berkshire f.s.l				
Threats to Popula	tion:					
Conservation/Mai	nagement/Re	esearch needs:				
Elevation Min 450ft ft / m Max ft / m			Open Image: Constraint of the second sec	pographic PositionMoistureCrestInundatedUpper SlopeSaturated (wet mesic)Mid-slopeMoist (mesic)Lower SlopeDry-mesicBottomDry (xeric)Level PlainDry (xeric)		

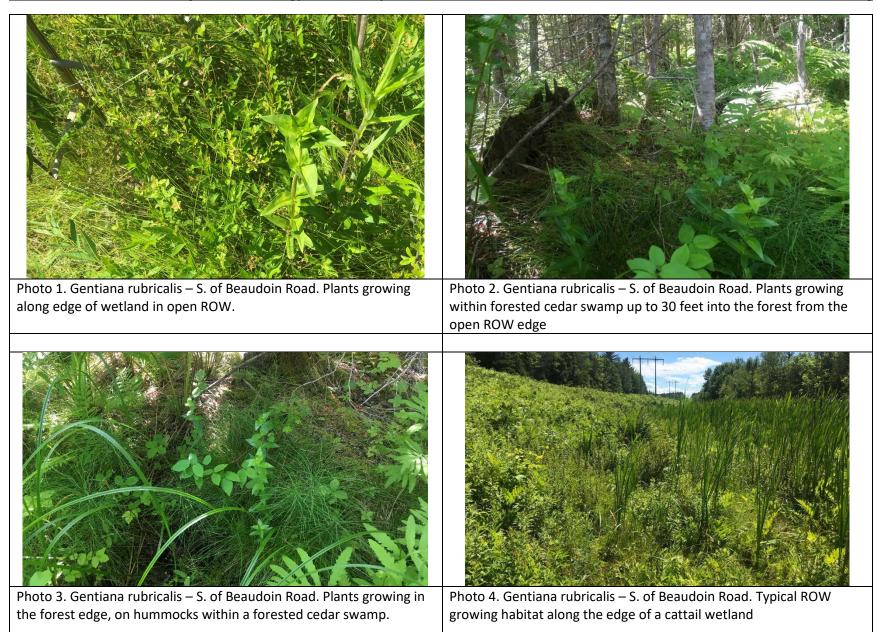
Photograph taken?	Specimen collected?		Do other membe	rs of this genus	occur at this site?				
	\boxtimes No \square Yes		\square No \square Yes	is of this genus	occur at this site.				
□ No	Collection #		If yes, are there l	nybridization iss	ues? 🛛 No; 🗌 Y	es; Explain			
🖾 Yes			Are there identif	ication issues?	🛛 No; 🗌 Yes; E:	xplain			
	Repository				 , , , _ _, _ , _ , _ , _ , _ _, _ , _ _, _ , _ , _ _, _ _, _ , _ _, _ , _ _, _ _, _ _, _ , _ _, _ , _	-F			
	1								
Landowner name/address owner information on a se	for entire population (attach a eparate sheet):	dditional	Phone		Is landowner av	ware of plant? No			
			Tax map # (if kno	own)	wn) Is landowner protecting Yes No				
			Lot # (if known)		Comments				
EO RANKING									
CURRENT CONDITIO	N of the plant's immediate ha			graded? Note a	ny disturbances w	ithin the plant			
	be below to what degree these								
	. Note how the disturbance(s)					- -			
Logging-most recently		☐ Fire		Dumping o	r mining				
Agriculture / Pasture	y ~ yrs ago		undment		nicle disturbance				
Animal effects (insect	outbreaks, browsing)	Exoti	c plants	Trails / Roa					
Wind or ice damage		🗌 Erosi							
Describe: Powerline corr	Describe: Powerline corridor								
Condition A – No ap	oparent signs of human disturb	ance (or long	g enough ago that ef	fects are no long	ger visible or are e	xtremely minor)			
	signs of human disturbance of	-	-	•					
-	of human disturbance or degr		-	-	ïcant way				
-	ly disturbed (multiple impacts	-			6 1	1			
Other / H	labitat disturbed, consistent wi	th needs of s	pecies / Explain: Po	werline maintai	ns non-forested co	ondition			
	large is this population relative ble of maintaining itself if its h								
Size / Quality Rank		\mathbf{B} – Good		$\square \mathbf{D} - Poor$) 				
	imilar to when obsvered in 20				r shrot-lived peren	nial, they seem			
to maintain numbers and	vigor over time.								
LANDSCAPE CONTE	XT of the area surrounding the	e plant habita	t. What land uses a	nd/or natural coi	mmunities surroun	d the observed			
area? Is the habitat fragm	nented? To what degree can th	e population	be protected from e	ffects of adjacen	nt land uses?				
Comments:									
Landscape $\Box A$ – Popu	lation surrounded by $> = 1000$) acres of und	listurbed landscape						
	lation surrounded by fairly int		-	be cuts nearby					
-	lation surrounded by fragmen	ted forest or	rural landscape						
	\square D – Surrounding area developed								
Other / I	Explain: Cleared powerline con	rridor							
OVERALL RANK for	EO based on your experience	$\mathbf{A} - \mathbf{Exc}$	ellent $\mathbf{\overline{M}} \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	r 🔲 D – Poor	E – Extant			
<u>Comments</u> :	jour experience								
<u></u>									
MNAP reviewed / verifi	ed rank	$\square \mathbf{A} - \text{Exc}$	ellent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	r 🔲 D – Poor	E – Extant			
Date: Re	viewer:	Rationale:							



Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP Powe	er	Survey Site:	Survey Site: S. of Beaudoin Road		
Quad name:	Pleasan	t Ridge Pit		Quad code:	45	069A8	
County:	Somerse	et		Town:	Mo	oscow	
Plant Name: Ger	ntiana rubri	caulis			New	Update	Occurrence #:
Date: 11July2018	Surv	eyor(s): Art Gili	man and Anna Rit	chie		Sourcecode	(MNAP assigns):
Primary Surveyor 1 Conti Cir # 5, E			gs Environmental	Phone: (802) 479	-7480	Email: avgil	man@together.net
GPS Datum □WGS 84 ⊠NAD 83 □ NAD 27 □ Other GPS Coordinates □ UTM Zone 19N ⊠ Decimal Degrees (dd.ddd) □ Deg Min Sec (dd mm ss) □ GPS (dd mm.mm) □ Other North West Additional Coordinates Lat. 45.094096, Long69.878232 Directions to Occurrence: Drive north out of Bingham,take stream road and the a left onto Beaudoin road, follow until you reach the existing R Population extends from just south of the road to approximately 800 feet south, along the edges of the wetland along the west side of the clearir extending into the forest for approximately 30 feet. ⊠ Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.							
	MAP	: Please attach	a map, preferably	1:24,000 scale topo n	nap, sho	owing the locat	tion of the observation.
				ture to its actual locat			
			-	ertainty (estimate =	L	_m /ft /	km / \square miles); \square aerial delimited
Confidence in				full extent is NOT kr	own.	🗌 Uncertain	whether full extent is known
EO DATA # of Plants 150		Phenology		are yard	Expl		Other than normal
☐ Individuals ☐ Ramets		In bud In flower	fruit $\begin{bmatrix} 1 & -5 \\ 5 & -2 \\ 20 & -2 \end{bmatrix}$	square yards 0 square yards 100 square yards		es	redation, etc? Explain:
Population Struct		Mature fr		q yds to 1 acre e +		of reproduction	on? Explain:
100 % Vegetative		Dormant	-	rea actual habitat		exual .sexual	
0 % Reproductive				area potential habitat	2 N	ot Observed	
Other Comments are located on hu				vetland, rarely extend	ing into	the supersatur	rated areas, however, in the forest, th
			GI	ENERAL DESCRIP	ΓΙΟΝ		
Associated natura	l community	y: Shallow mars	h - sloping edge a	nd cedar swam humm	ocks		
Associated plant	species: Care	ex flava, Typha	latifolia, Salix dis	color			
Substrate/soil typ	e:						
Threats to Popula							
Conservation/Ma	nagement/Re	esearch needs:					
ElevationMinft / mMaxft / m		spect N NE E NW S SE W SW Flat or NA	% Slope ☐ Flat ⊠ 0-10 ☐ 10-35 ☐ 35+ ☐ Vertical	☑ Open □ □ Partial □ ☑ Filtered □	pograp Crest Upper Mid-sl Lower Bottor Level	lope Slope n	Moisture □ Inundated ⊠ Saturated (wet mesic) □ Moist (mesic) □ Dry-mesic □ Dry (xeric)

Photograph taken?	Specimen collected? ⊠ No □ Yes		Do other membe ⊠ No □Yes	rs of this genus of	occur at this site?					
□ No	Collection #		If yes, are there h	ybridization issu	ıes? 🛛 No; 🗌 Y	es; Explain				
X Yes	Repository		Are there identif	ication issues?	🛛 No; 🗌 Yes; E:	xplain				
Landowner name/address owner information on a se	for entire population (attach ad parate sheet):	lditional	Phone		Is landowner aware of plant?					
			Tax map # (if kno	own)		rotecting plant? No				
			Lot # (if known)		Comments					
	EO RANKING									
habitat (check off, describ	N of the plant's immediate hab e below to what degree these h Note how the disturbance(s)	nave altered n	atural ecological pr	rocesses, or if the						
Logging-most recently Agriculture / Pasture Animal effects (insect Wind or ice damage		ndment plants n								
Describe: Powerline corridor										
Condition □ A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor) Rank □ B – Some signs of human disturbance or degradation, but habitat generally intact □ C – Signs of human disturbance or degradation, and habitat compromised in some significant way □ D – Highly disturbed (multiple impacts causing habitat to be drastically altered) ○ Other / Habitat disturbed, consistent with needs of species / Explain: Powerline maintains non-forested condition										
	large is this population relative ole of maintaining itself if its h A – Excellent Z B		s basically intact?							
	KT of the area surrounding the ented? To what degree can the					ad the observed				
Comments:										
Landscape A – Population surrounded by > = 1000 acres of undisturbed landscape Rank B – Population surrounded by fairly intact landscape, though there may be cuts nearby ⊠ C – Population surrounded by fragmented forest or rural landscape □ D – Surrounding area developed ☑ Other / Explain: Cleared powerline corridor and second growth cedar swamp										
OVERALL RANK for E <u>Comments</u> :	EO based on your experience	A – Exce	llent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	$\mathbf{D} \mathbf{E} - \mathbf{E} \mathbf{x} \mathbf{t} \mathbf{a} \mathbf{n} \mathbf{t}$				
MNAP reviewed / verifie	ed rank	A – Exce	llent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	E – Extant				
Date: Rev	iewer:	Rationale:								



Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP Powe	er		Survey S	ite: V	Wyman Dam Access Road		
Quad name:	Binghan	n			Quad cod	le: 4	45069A8		
County:	Somerse	et			Town:	Ν	loscow		
Plant Name: Hou	istonia long	ifolia			C	New	Update	Occurrence #:	
Date: 6 July2018	Surve	eyor(s): Art Giln	nan and Anna	Ritchie			Sourcecode	(MNAP assigns):	
Primary Surveyor 1 Conti Cir # 5, B			s Environment	al Ph	one: (802) 4	79-7480	Email: avgili	man@together.net	
GPS Datum WGS 84 NAD 83 NAD 27 Other GPS Coordinates UTM Zone 19N Decimal Degrees (dd.dddd) Deg Min Sec (dd mm ss) GPS (dd mm.mm) Other North West Additional Coordinates Lat. 45.067711, Long69.898568 Directions to Occurrence: Located to the south side of the Wyman Dam access road, where the current powerline ROW crosses the road as it co south from the dam Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.									
	MAP	Please attach a	a map, preferat	oly 1:24,0	00 scale top	o map, s	howing the locat	ion of the observation.	
0 % Reproductive			y (estimate attent is NO a rd e yards re yards uare yards to 1 acre tual habitat otential hab	' known; Exj mic (lic Evi Evi ∑ Tyj	Uncertain or? Normal olain: Normal in rrohabitats, vigor henized) microh dence disease, pr Yes No be of reproductio Sexual Asexual Not Observed	Other than normal recently (<10 years) disturbed depressed in more stabilized abitats redation, etc? Explain:			
Other Comments: Number of individ				n. Individ	luals were v	ery scatte	ered; sometimes of	clumped and sometimes disperse.	
				GENER	AL DESCR	IPTION	I		
Associated natura Associated plant s					rus commu	iis, Dryn	ocallis arguta, L	echea intermedia	
Substrate/soil type		ivium/ topsoil re	emoved/scrape	d					
Threats to Popular		·····							
Conservation/Mar	-		0/ 61			T	1		
Elevation Min ft / m Max ft / m		pect N □ NE E ⊠ NW S □ SE W □ SW Flat or NA	% Slope ☐ Flat ⊠ 0-10 ☐ 10-35 ☐ 35+ ☐ Vertical	F		Cres Cres Uppe Mid- Low Botte	er Slope slope er Slope	Moisture Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic Dry (xeric)	

Photograph taken?	Specimen collected?				occur at this site?				
□ No	No Yes		☐ No ⊠Yes If yes, are there h		ulea (a few) ues? 🛛 No; 🗌 Y	es; Explain			
🛛 Yes	Collection #								
	Repository		Are there identified Plant habit of two		X No; Yes; Ez	xplain			
Landowner name/address	for entire population (attach a	dditional	Phone		Is landowner av	ware of plant?			
owner information on a se	uuntionai			Yes 🗌	No				
			Tax map # (if kno	own)		rotecting plant? No			
			Lot # (if known)		Comments				
EO RANKING									
	N of the plant's immediate hal								
	be below to what degree these l				ey have any negat	ive or positive			
effects on the population).	. Note how the disturbance(s)	may influence	success of the pla	int at the site.					
Logging-most recently	√~ yrs ago	Fire		Dumping or	r mining				
Agriculture / Pasture		Impour		ORV / Vehi	icle disturbance				
Animal effects (insect Wind or ice damage	outbreaks, browsing)	Exotic Erosion		Trails / Roa	ıds				
			L		e of disturbance				
Describe: Powerline corri	idor near dam operations on riv	ver terrace		_					
Condition \square A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor)									
	signs of human disturbance or	-	-	•					
-	of human disturbance or degra		-	-	cant way				
-	y disturbed (multiple impacts of abitat disturbed, consistent with the second state of	-	-		us in groos disturb	ad for polo			
intallation a few years ago		ui needs of spe	cies / Explain. Fi	ants most vigoro	us in areas distuit	bed for pore			
		1	1	· • • •					
	large is this population relative ble of maintaining itself if its h								
Size / Quality Rank		B – Good		$\mathbf{D} - \text{Poor}$					
Comments: When first of	bserved this was a very large,	very vigoorus	opulation but is n	ow much smalle					
	stabilization of the habitat, es	specially by lic	hens (which acidif	y habitat conditi	ions and suppress	plant growth,			
seeedlign survival, etc,).									
LANDSCAPE CONTEX area? Is the habitat fragm	KT of the area surrounding the nented? To what degree can the	e plant habitat. e population b	What land uses an e protected from e	nd/or natural con ffects of adjacen	nmunities surroun t land uses?	nd the observed			
Comments:									
Landscape 🗌 A – Popu	lation surrounded by $> = 1000$) acres of undis	turbed landscape						
	lation surrounded by fairly int			be cuts nearby					
	lation surrounded by fragment	ted forest or ru	ral landscape						
 D – Surrounding area developed Other / Explain: Not a natural habitat; maintained by powerline maintenance 									
	Expraint not a natural nabilal;	mannamed by	powernite mainter	lalle					
OVERALL RANK for I	EO based on your experience	A – Excel	ent $\mathbf{\boxtimes} \mathbf{B} - \mathbf{Goo}$	d 🗌 C – Fair	$\mathbf{D} - Poor$	\Box E – Extant			
	shing but still a large populati								
MNAP reviewed / verifie	ed rank	A – Excel	ent $\square \mathbf{B} - \mathbf{Goo}$	d 🗌 C – Fair	\mathbf{D} - Poor	E – Extant			
Date: Rev	viewer:	Rationale:							

Photo 1. Houstonia longifolia. Plant in flower, growing in lichen cover.	Photo 2. Houstonia longifolia. Plants in flower and in leaf. Photo shows the typical growing conditions and view of area on upper river
	terrace.
Photo 3. Houstonia longifolia. Close up view of flower shape and leaf	Photo 4. Houstonia longifolia. Robust clump of flowering stems
shape; growing in typical substrate.	growing in open gravel.

Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP Powe	er		Survey	Site:	NECE - CMP Corridor West			
Quad name:	Lake Au	Lake Auburn East			Quad c	ode:	440	44070B2		
County:	Androscoggin			Town:		Gre	eene			
Plant Name: Isot	ria medeolo	bides				N N	ew [Update	Occurrence #: 1	
Date: 5 July2018	Surve	eyor(s): Art Gilı	nan and	Anna Ritcl	hie			Sourcecode (I	MNAP assigns):	
Primary Surveyor 1 Conti Cir # 5, Ba			s Enviro	onmental	Phone: (802) 479-7	7480	Email: avgiln	nan@together.net	
GPS Datum WGS 84 NAD 83 NAD 27 Other GPS Coordinates UTM Zone 19N Decimal Degrees (dd.dddd) Deg Min Sec (dd mm ss) GPS (dd mm.mm) Other North West Additional Coordinates Lat. 44.221891, Long70.168584 Directions to Occurrence: S of Allen Pond Campground Road, W side of CMP corridor, in forest ca. 90" W of treeline. Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.										
	MAP	Please attach	a map, p	preferably 1	:24,000 scale t	opo ma	ap, sho	wing the location	on of the observation.	
Locational Uncertainty (how closely can you map the feature to its actual location?)										
EO DATA		Phenology		Population	n Area					
# of Plants 1 Individuals Ramets Population Structu	ıre	In leaf	In bud 1 – 5 square In flower 5 – 20 squar Immature fruit 20 – 100 squ			5	Explain: Moderate to robust Evidence disease, predation, etc? Explain: Yes No			
100 % Vegetative % Reprodu	ctive	Seed dispondent	ersing		ea actual habit			sexual	? Explain:	
Other Comments:		<u> </u>		~ ar	ea potential ha	abitat	K No	ot Observed		
				CF	NERAL DESC	RIPT	ION			
Associated natural	community	: Moderate mix	ed fores				1011			
Associated plant species: Trees 30'=TSUEA 30%, Red oak 40%, Red Maple 15%, Yellow Birch 15%, no understory vegetation in immediate vicinity; no herbs within 2 feet Substrate/soil type: mineral soil covered by 2 inches of leaf litter and duff (red oak, yellow birch, beech, pine)										
Threats to Population: just outside proposed clearing limits for the proposed corridor										
Conservation/Management/Research needs:										
ElevationMinft / mMaxft / m		pect N ☐ NE E ☐ NW S ☐ SE W ☐ SW Flat or NA	35	at 10 -35	Light ☐ Open ☐ Partial ☐ Filtered ⊠ Shade		oograp Crest Upper S Mid-slo Lower S Bottom Level F	ope Slope	Moisture ☐ Inundated ☐ Saturated (wet mesic) ⊠ Moist (mesic) ⊠ Dry-mesic ☐ Dry (xeric)	

			1					
Photograph taken?	en? Specimen collected? ⊠ No □ Yes			Do other members of this genus occur at this site? \square No \square Yes				
□ No	Collection #		If yes, are there hybridization issues? 🖾 No; 🗌 Yes; Explain					
Xes Yes	Repository			ication issues? v it might be I. ver ant in Maine.				
Landowner name/address	for entire population (attach add	litional	Phone		Is landowner av	ware of plant?		
owner information on a se						No		
			Tax map # (if kno	own)	Is landowner pi	rotecting plant? No		
			Lot # (if known)		Comments			
		EO RA	NKING		1			
habitat (check off, describ	N of the plant's immediate habite below to what degree these has. Note how the disturbance(s) m	tat. Is the have altered r	abitat pristine or de natural ecological p	rocesses, or if the				
Logging-most recently Agriculture / Pasture Animal effects (insect Wind or ice damage	undment Dumping or mining c plants Drrails / Roads on Other No Evidence of disturbance							
	90ft into the forest from edge of	-	-					
Rank \Box B – Some \Box C – Signs \Box D – Highl	Condition							
Does it appear to be capal Size / Quality Rank	large is this population relative ole of maintaining itself if its hal $\square A$ – Excellent $\square B$ gorous but no flowers this year.	bitat remain – Good	s basically intact?	pecies? Low Yes No D – Poor				
	KT of the area surrounding the p nented? To what degree can the p					d the observed		
Comments:								
Landscape A – Population surrounded by > = 1000 acres of undisturbed landscape Rank B – Population surrounded by fairly intact landscape, though there may be cuts nearby C – Population surrounded by fragmented forest or rural landscape D – Surrounding area developed Other / Explain:								
OVERALL RANK for I	EO based on your experience	A – Exce	ellent $\Box \mathbf{B} - Good$	od 🛛 C – Fair	D – Poor	E – Extant		
Comments:						_		
MNAP reviewed / verifie	ed rank	A – Exce	ellent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	\Box E – Extant		
Date: Rev	viewer:	Rationale:						



Photo 1. Isotria medeoloides growing along a steep embankment in leaf litter.

Photo 2. Photo showing habitat Isotria mediolodes was growing in; just up and to the right of the tree on the left side of the photo, with the yellow flagging wrapped around it.



Photo 3. Isotria medeoloides growing on steep hillslope leading to small forested stream.



Photo 4. Photo showing hillslope plant was growing on, the stream below, and the forest community it is growing within.

I. IDENTIFIERS / LOCATION

Site Name	e: NECEC FI	D #11	Obs. Pt. #: JACKPINEWO OD004DMC	Quadcode:
Field-assigne	ed Community	USGS 7.5' Quad Name: Spencer Lake Quadrangle		
Identificatior	n or classificat	Town: Bradstreet Township T4 R7		
MNAP REVI	EWED/EdITEI	D TYPE:	Occurrence #:	County: Somerset
LANDOWNE Map	R INFORMAT Lot	Date: 7/18/18		
				Surveyors: Duane Choquette & Tom Errico
				SourceCode: F
				Biophysical Region: Western Mountains

GPS Coordinates (X NAD 83, UTM Zone 19N; Other-please specify) centerpoint Lat: 45.49568, Long: -70.25400 Directions to occurrence: From the Town of Jackman, Maine: Take State Route 201 south to Spencer Road. Spencer Road west to Moore Pond, Proceed north to Egg Pond. Jack Pine woodland is northwest of Egg pond, between egg pond and Bitter Brook.

Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:None	Confidence Extent:
Areal delimited	Y - Confident full extent of feature IS known
Mapped to within 12.5 m of actual location	N - Confident full extent is NOT known
Greater uncertainty (please indicate)	? - Uncertain whether full extent is known
50 m / ft / km / miles	

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

Predominately Jack pine (70%), with mixed white pine, red pine and red spruce in the canopy. The understory is dry and open, with lowbush blueberries and laurels found sporadically in patches. The Jack Pine woodland abuts regenerating clear-cuts to both the east and west, which are dominated by young red spruce, though scattered young jack pines can be found throughout.

NATURAL COMMUNITY SURVEY	Survey Area: FID # 11 JackPir	neWood004DMC	Obs. Pt.
SAMPLE TYPE:		Additional sampling recommended?	
Brief descriptive – NOT SUFFICIENT FOR	R DOCUMENTING NEW EOS	X Yes 🗌 No	
Generalized cover estimates & dbhs (p2))	Photos: X Yes 🗌 No	
Nested plot samples (N =) (attach)		• –	

II. VEGETATION BY STRATA

TREE LAYER (canopy plus emergents, everything \geq 10 cm dbh)								
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60% 70% 80% 90+%			Total Basal Area: ft²/acre	Conifer %:100	Canopy height _50 Supercanopy spp?		m or ft	
Species name/code	Cover class*	Dbh range X⊡in □ cm	Core ages	Species name/code	Cover class*	Dbh range □in □cm	Core ages	Check here if
Pinus banksiana	87							plot data
Pinus strobus	9	6-8						are
Picea rubens	9	6-8						attached
Pinus resinosa	1	4-8						instead
		6-8						

Community name & EO#:

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

<5% 10%	20% 30% 40% 50% 60% 70%	80% 90+%	
Cover class*	Species name/code	Cover class*	ahaak hara if
3			check here if
9			plot data are
			attached instead

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5% 10%	20% 30% 40% 50%	60% 70%	80% 90+%	
Species name/code	Cover class*	Species name/code		Cover class*	ahaak hara if
Kalmia angustifolia	19				check here if
Vaccinium angustifolium	19				plot data are
					attached
					instead

HERB / DWARF SHRUB LAYER (all herbaceous vascular plants plus any woody plants < 1 m tall) DOMINANCE : tree regen_ TOTAL COVER OF STRATUM: __10_ _%; shrub__10_ _%; <5% 10% 20% 30% 40% 50% 60% 70% 80% 90+% graminoid_ 0 _%; forb___ 20 % Species name/code Cover class* Cover class* Species name/code check here if Pteridium aquilinum 37 plot data are 19 Gaultheria procumbens attached Cornus canadensis 19 instead

BRYOID LAYER (all ground-layer non-vascular plants; do not include epiphytes)

TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70% 80% 90+%	DOMINANCE: bryophytes100	% lichens _	%
Species name/code	Cover class*	Species name/code	Cover class*	ah a ah h ana lif
Pleurozium schreberi 87				check here if plot data are
Huperzia lucidula	19			attached
				instead

*cover classes (midpoint): < 2%= 1, 2-5%= 3, 6-12%= 9, 13-24%= 19, 25-49%= 37, 50-74%= 63, 75-100%= 87

ADDITIONAL SPECIES within area where vegetation cover by strata were taken						OTHER PLANT SPP seen in community (spp codes), for complete plant species list
Stratum	Species code	Cover class	Stratum	Species code	Cover class	

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (rooting zone): Sample #_004 Depth to which soil examined25cm Organic layer depth12cm or □ >1 m Mineral layer below organic?yesdepth12cm Mottling in top 30 cm?Nodepth Depth to water table:unknown	ELEVATION:1200ft m or ft? HYDROLOGIC REGIME: upland nontidal wetland: perm flooded semiper flooded seasonally fld.	Immore South (45° = 100) 10% = 25% Immore Immore YDROLOGIC REGIME: HABITAT PATCHINESS (describe zones or patcher present): Immore Dense central stand, outer edges border logging clearcuts with regenerating spuce being dominant.				
Depth to obstruction: 25cm nature of obstruction: Depth to obstruction: bedrock Stoniness: very little (<1%)/ moderate (2-25%)/ very (>25%) pH:unknown measured in soil or vonPost decomposition (peat substrates only) at deep	☐ saturated ☐ tidal – irreg. fld. ☐ saltwater ☐ brackish ☐ freshwater ☐ unknown	MICROTOPOGRAPHY: Jack Pine Forest is on a small hill overlooking regenerating clear cuts on West, North and East sides.				
AVERAGE TEXTURE: DRAINAGE & MOISTURE REGIME (see MAPPSS key): gravel very poorly drained sand poorly drained loamy sand / sandy loam somewhat poorly drained loam somewhat poorly drained clay loams well drained sandy clay / clay somewhat excessively drained muck muck	BEDROCK TYPE: lgneous granite dioritic gabbroic Metamorphic slate/phyllite schist/gneiss Sedimentary limestone other details?	TOPOGRAPHIC POS D drainage cha D drainage cha D low plain, lev D N narrow valle T toe of slope L lower slope M middle slope M middle slope T hillside terrat U upper slope E cliff/ledge S ridge, summ	annel Dedrock vel Dedrock y Dedrock I talus slope glacial till moraine e esker/outwash e glacial delta Dedrock glacial till Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash Desker/outwash			

THREATS TO COMMUNITY? Logging

OTHER COMMENTS: animal use, species distribution notes, etc.

Jack pine forest northwest of Egg pond. The stand is bordered by three large logging cuts, to the north east, and west. The Jack pine Forest extends south outside of the study corridor. An examination of aerial photography and field reconnaissance shows the jack pine forest ending in a spruce bog community.

IV. SUMMARY AND RANKING Community name & EO#:

Applicable National Type:	NVC CODE:	Comment re fit to type?								
	CEGL00									
COMMUNITY RANKING										
1. CURRENT CONDITION and quality of the community itself.										
 Comment on the species composition and biological structure of the community (species diversity, indicator species, development/maturity, etc.) For forests: Do you consider this to be old growth? If so, based on what? 										
 Natural and anthropogenic disturbance within the community 	(check off then de	scribe extent and how recent below)								
		ect outbreaks, browsing)								
Agriculture / pasture	Erosion									
	Dumping or Mining ORV / vehicle distu	rbance								
Impoundment Exotic plants	Trails / roads									
List disturbance(s): to what degree have these altered natural ecological pro-	Other, list									
The surrounding area has been heavily logged, and is not dominated by re younger trees (<10 dbh), and in the past likely extended into another s JACKPINE WOOD005DMC).	egenerating spruce	stands. The Jack Pine forest is primarily								
 A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor). B – Some signs of human disturbance or degradation, but community generally intact. C – Signs of human disturbance or degradation, community compromised in some significant way. D – Highly disturbed (multiple impacts causing community to be drastically altered). 										
2. SIZE / QUALITY:										
What is the approximate size of the community occurrence?	2.8 acres	💶 acres / 🗌 hectares								
□ Covers the natural extent of this community type ■Ha	s been truncated th	rough adjacent land use								
Size (Quality Bank, A Evallant D B Cood		D Poor								
Size / Quality Rank: A – Excellent B – Good	C – Fair	D – Poor								
3. LANDSCAPE CONTEXT of the area surrounding the community:										
What land uses and/or natural communities surround the observed area? I around the observed area, and to what degree this may affect the observed be protected from effects of adjacent land uses?										
Upwards of 80% of the surrounding community has been directly impacted from logging activities. To the north, east and west, recent activities have cleared the pre-existing forest terrain, and the area is regenerating with mixed conifers, mainly spruce. To the south the Jack pine forest extends outside the survey area. From aerial imagery it appears the entire stand may encompass approximately 6 acres, though less than 3 acres is located within the project's survey area.										
\Box A – Community surrounded by >= 1000 acres of undisturbed landscape.										
□ B – Community surrounded by fairly intact landscape, though there		/.								
C – Community surrounded by fragmented forest or rural landscape	э.									
D – Surrounding area developed.										
OVERALL RANK for Community A – Excellent B based on your experience Comments:	– Good 🌒 C – Fa	air 🔲 D – Poor 🔛 E – Extant								

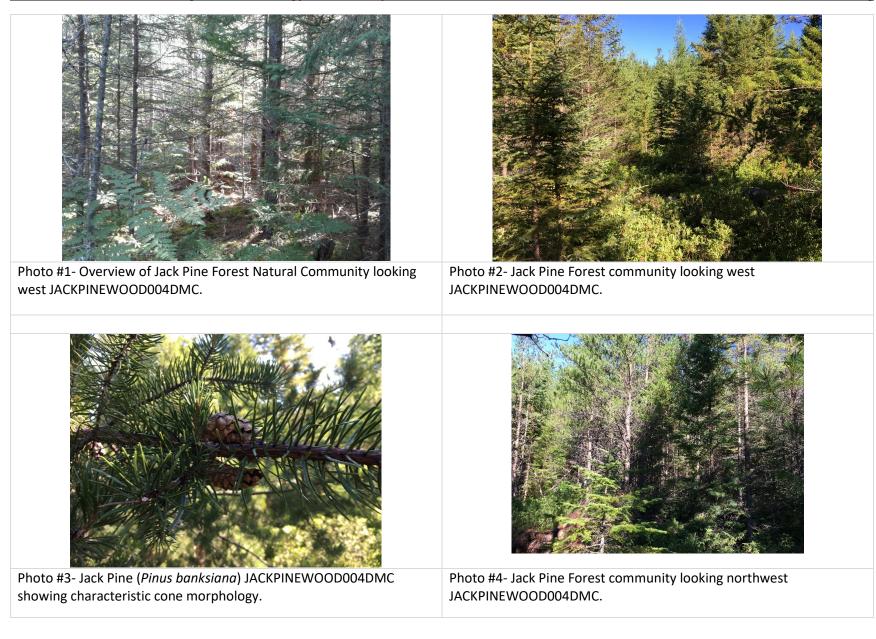
NATURAL COMM	UNITY SURVEY	Survey Area: FID # 11 JackPineWood004DMC	Obs. Pt.
MNAP reviewed / v	erified rank	□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant	:
Date:	Reviewer:	Rationale:	

PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

Community type:										EOnum:			
LAYER	plot #												
TREE list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout!													
DEADWOOD (use tree plot)													
LARGE: (> 10cm dia); measure length in plot & middle dia): LIST DOM. SPP (IF KNOWN) <u>SMALL</u> (< 10 cm diameter): 1: < 5% 2 : 6-24% 3 : 25%+													
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius													
SHRUB													
cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius													
HERB	Species					Species					Species		
cover class' by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall <u>QUAD SIZE:</u> 1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember													
the zeros for spp present in some but not all herb quads.													
BRYOID ground-layer mosses, liverwort, lichens in herb quads.													
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus; identified to species.													
REMARKS: In box on p.3, list plant spp. pre	cont in the commun			in th			0.0.0	oma			os list		

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330



I. IDENTIFIERS / LOCATION

Site Name	: NECEC FI	D #11	Obs. Pt. #: JACKPINEWO OD005DMC	Quadcode:
Field-assigne	d Community	Type: Jack Pine Forest		USGS 7.5' Quad Name: Spencer Lake Quadrangle
Identification	or classificati	Town: Bradstreet Township T4 R7		
MNAP REVIE	EWED/EdITEI	D TYPE:	Occurrence #:	County: Somerset
LANDOWNE Map	R INFORMAT Lot	ION: <u>for each landowner</u> Name (& address if new landowner)		Date: 7/18/18
				Surveyors: Duane Choquette & Tom Errico
				SourceCode: F
				Biophysical Region: Western Mountains

GPS Coordinates (X NAD 83, UTM Zone 19N; Other-please specify) centerpoint Lat: 45.49638, Long: -70.25782 Directions to occurrence: From the Town of Jackman, Maine: Take State Route 201 south to Spencer Road. Spencer Road west to Moore Pond, Proceed north to Egg Pond. Jack Pine woodland is west-northwest of Egg pond, between egg pond and Bitter Brook.

Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:None	Confidence Extent:
Areal delimited	Y - Confident full extent of feature IS known
Mapped to within 12.5 m of actual location	N - Confident full extent is NOT known
Greater uncertainty (please indicate)	- Uncertain whether full extent is known
50 m / ft / km / miles	

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

Predominately Jack pine (90%), with mixed red pine and red spruce in the canopy. The understory is dry and open, with lowbush blueberries, laurels, and snowberries found sporadically in patches, with bracken fern present in areas where the canopy thins. The Jack Pine woodland abuts regenerating clear-cuts to both the east and west, which are dominated by young red spruce, though scattered young jack pines can be found throughout.

	NATURAL COMMUNITY SURVEY	Survey Area:FID #11 JackPineV	Vood005DMC	Obs. Pt.
I	SAMPLE TYPE:		Additional sampling recommended?	
	Brief descriptive – NOT SUFFICIENT F	OR DOCUMENTING NEW EOS	🗶 Yes 🗌 No	
	Generalized cover estimates & dbhs	(p2)	Photos: X Yes 🗌 No	
	Nested plot samples (N =) (attac		• –	

II. VEGETATION BY STRATA

TREE LAYER (canopy plus emergents, everything \geq 10 cm dbh)											
TOTAL COVER OF STRATUM: <5%				Total Basal Area: ft²/acre	Conifer %:100	Canopy height _60 Supercanopy spp?	ft	m or ft			
Species name/code	Cover class*	Dbh range in cm		Core ages	Species name/code	Cover class*	Dbh range ∐in ∏cm	Core ages	Check here if		
Pinus banksiana	87	8-10							plot data		
Pinus strobus	1	8-10							are		
Picea rubens	9	6-8							attached		
Pinus resinosa	1	6-8							instead		

Community name & EO#:

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

TOTAL COVER OF STRATUM:	<5% 10%	20% 30% 40% 50% 60% 70%	80% 90+%
Species name/code	Cover class*	Species name/code	Cover class*
Picea rubens	19		check here if
Pinus banksiana	63		plot data are
			attached
			instead

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5% 10%	20% 30% 40% 50% 60% 70%	80% 90+%	
Species name/code	Cover class*	Species name/code	Cover class*	ahaak hara if
Kalmia angustifolia	19			check here if
Vaccinium angustifolium	19			plot data are
				attached
				instead

HERB / DWARF SHRUB LAYER (all herbaceous vascular plants plus any woody plants < 1 m tall) TOTAL COVER OF STRATUM: DOMINANCE : tree regen_ __10_ _%; shrub__10_ _%; <5% 10% 20% 30% 40% 50% 60% 70% 80% 90+% graminoid_ 0 _%; forb___ 20 % Species name/code Cover class* Cover class* Species name/code check here if Pteridium aquilinum 37 plot data are 19 Gaultheria procumbens attached Cornus canadensis 19 instead Gaultheria hispidula 9

BRYOID LAYER (all ground-layer non-vascular plants; do not include epiphytes)

TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70%_80%_90+%	DOMINANCE: bryophytes100	% lichens _	%
Species name/code	Cover class*	Species name/code	Cover class*	ah a ah h ana lif
Pleurozium schreberi	87			check here if
Huperzia lucidula	9			plot data are attached
				instead

*cover classes (midpoint): < 2%= 1, 2-5%= 3, 6-12%= 9, 13-24%= 19, 25-49%= 37, 50-74%= 63, 75-100%= 87

ADDITIC taken	NAL SPECIES	within area w	here vege	OTHER PLANT SPP seen in community (spp codes), for complete plant species list		
Stratum	Species code	Cover class	Stratum	Species code	Cover class	

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (ro	ooting zone):	ELEVATION:1250ft	ASPECT (TRUE): South	SLOPE :	Include units!	
Sample	#005	🗆 m or 🕈 ft?	South	10%	(45° = 100%) = 25%	
				🗌 meas	ured 🔁 estimated	
Depth to which soil examined36	cm	HYDROLOGIC REGIME:		ss (describ	e zones or patches if	
Organic layer depth150	cm or □>1 m	🗌 upland	present):	atond o	utor odgoo	
Mineral layer below organic?ye	esdepth21 cm		Dense central stand, outer edges border logging clearcuts with			
Mottling in top 30 cm?Node	pth	☐ perm flooded ☐ semiper flooded	regenerating s	spuce bei	ng dominant.	
Depth to water table:unknown		seasonally fld. saturated				
Depth to obstruction:36 cm obstruction:bedrock	_ nature of	☐ tidal – irreg. fld. ☐ tidal – reg. fld.				
Stoniness: 🗌 very little (<1%)/ 🖠 mo	oderate (2-25%)/	saltwater	MICROTOPOGRAPH	HY:		
pH:unknown measured			Jack Pine Forest is surrounded by			
	ates only) at deep	unknown	regenerating clear cuts on West, North and East sides. A depression containing a Black spruce bog is located within the Jack Pine forest along the southern survey limit.			
AVERAGE TEXTURE:	DRAINAGE & MOISTURE REGIME (see MAPPSS key):	BEDROCK TYPE:	TOPOGRAPHIC POS	SITION	SURFICIAL DEPOSIT:	
☐ gravel	very poorly drained	Igneous granite	D drainage cha		bedrock	
□ sand	poorly drained	dioritic	P low plain, lev		☐ talus slope	
loamy sand / sandy loam		gabbroic	□ N narrow valle	y	☐ glacial till —	
🗌 loam	 somewhat poorly drained moderately well drained 	Metamorphic slate/phyllite	T toe of slope		☐ moraine	
🔲 silt Ioam	well drained	Schist/gneiss	L lower slope		esker/outwash	
🗌 clay loams	 somewhat excessively drained 	Sedimentary	M middle slope		☐ glacial delta —	
Sandy clay / clay	excessively drained	☐ other	T hillside terra		lacustrine/fluvial	
🗋 peat		details?	U upper slope			
muck			E cliff/ledge	nit creat	aeolian	
			S ridge, summ	in, crest	other:	

THREATS TO COMMUNITY? Logging

MANAGEMENT / PROTECTION NEEDS?

OTHER COMMENTS: animal use, species distribution notes, etc.

This Jack Pine Forest is located approximately 1500 ft west-northwest of Egg Pond, and extends both north and south from the survey area. In the Southern segment, the Jack Pine Forest surrounds a large depression containing a Black Spruce bog. Heavy logging has occurred to the east and west of the Jack Pine Forest, and scattered jack pine saplings can be found in these regenerating clear-cuts. The clear cuts are spruce dominant.

IV. SUMMARY AND RANKING Community name & EO#:

Applicable National Type:	NVC CODE:	Comment re fit to type?						
	CEGL00							
1. CURRENT CONDITION and quality of the community itself.								
 Comment on the species composition and biological structure of the community (species diversity, indicator species, development/maturity, etc.) For forests: Do you consider this to be old growth? If so, based on what? 								
Agriculture / pasture Fire Wind or ice damage	ty (check off, then describe extent and how recent below) Animal effects (insect outbreaks, browsing) Erosion Dumping or Mining ORV / vehicle disturbance Trails / roads Other, list							
List disturbance(s): to what degree have these altered natural ecological processes, and/or do they appear to effect the population? The surrounding area has been heavily logged, and is not dominated by regenerating spruce stands. The Jack Pine forest is primarily younger trees (<10 dbh), and in the past likely extended into another stand of Jack Pine approximately 500 ft to the west (See JACKPINE WOOD004DMC).								
 A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor). B – Some signs of human disturbance or degradation, but community generally intact. C – Signs of human disturbance or degradation, community compromised in some significant way. D – Highly disturbed (multiple impacts causing community to be drastically altered). 								
2. SIZE / QUALITY:								
What is the approximate size of the community occurrence?								
Covers the natural extent of this community type	s been truncated thi	rough adjacent land use						
Size / Quality Rank: 🗌 A – Excellent 🗌 B – Good 🥊] C – Fair 🛛	D – Poor						
3. LANDSCAPE CONTEXT of the area surrounding the community:								
What land uses and/or natural communities surround the observed area? I around the observed area, and to what degree this may affect the observed be protected from effects of adjacent land uses?								
Upwards of 80% of the surrounding community has been directly impacted from logging activities. To the north, east and west, recent activities have cleared the pre-existing forest terrain, and the area is regenerating with mixed conifers, mainly spruce. To the south the Jack pine forest extends outside the survey area. From aerial imagery it appears the entire stand may encompass approximately 20 acres, though less than 5 acres is located within the project's survey area.								
 A – Community surrounded by >= 1000 acres of undisturbed lands B – Community surrounded by fairly intact landscape, though there C – Community surrounded by fragmented forest or rural landscape D – Surrounding area developed. 	may be cuts nearby	<i>į</i> .						
OVERALL RANK for Community A – Excellent B based on your experience Comments:	– Good D C – Fa	air D – Poor □ E – Extant						

NATURAL COMMUNITY SURVEY Survey Area:FID #11 JackPineWood005DMC		Survey Area:FID #11 JackPineWood005DMC	Obs. Pt.
MNAP reviewed / v	verified rank	□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant	t
Date:	Reviewer:	Rationale:	

PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

Community type:					EOnum:						
LAYER	plot #										
TREE list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout!											
DEADWOOD (use tree plot)											
LARGE: (≥ 10cm dia); measure length in plot & middle dia): LIST DOM. SPP (IF KNOWN) <u>SMALL</u> (< 10 cm diameter): 1: < 5% 2: 6-24% 3: 25%+											
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius											
SHRUB											
cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius											
HERB	Species			Species				Species			
cover class [*] by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall											
1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember the zeros for spp present in some but not all herb quads.											
BRYOID ground-layer mosses, liverwort, lichens in herb quads.											
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus; identified to species.											
REMARKS:		1	· ·			- I					
In hox on n.3. list plant spn_pre	cont in the commun	itv hut n	at in the	sample plots so we ba	NO 2 COM	nlata c	noci	oe liet			

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330



I. IDENTIFIERS / LOCATION

Site Name	e: NECEC FI	D #12	Obs. Pt. #: JACKPINEWO OD006DMC	Quadcode:		
Field-assigne	ed Community	Type: Jack Pine Forest		USGS 7.5' Quad Name: Enchanted Pond Quadrangle		
Identificatior	n or classificati	Town: Bradstreet Township T4 R7				
MNAP REVIEWED/EdITED TYPE: Occurrence				County: Somerset		
LANDOWNE Map	R INFORMAT Lot	ION: <u>for each landowner</u> Name (& address if new landowner)		Date: 7/18/18		
				Surveyors: Duane Choquette & Tom Errico		
				SourceCode: F		
				Biophysical Region: Western Mountains		

GPS Coordinates (X NAD 83, UTM Zone 19N; Other-please specify) centerpoint Lat: 45.49638, Long: -70.25782 Directions to occurrence: From the Town of Jackman, Maine: Take State Route 201 south to Spencer Road. Spencer Road approximately 7 miles west. Turn north onto logging road and bear left. The road ends in a log landing at the start of the Jack Pone Forest. Proceed west into the Jack pine Forest.

Strongly recommend use of air photos and USGS topographic maps for relocation of the site on the ground.

FEATURE MAP. Please attach a map, preferably 1:24,000 scale topo map, showing the location of the observation. Locational uncertainty refers to any uncertainty there is as to where the actual observation occurred. Confidence extent indicates how confident you are that the observed area represents the full extent of the feature.

Locational Uncertainty:None	Confidence Extent:
Areal delimited	Y - Confident full extent of feature IS known
Mapped to within 12.5 m of actual location	N - Confident full extent is NOT known
Greater uncertainty (please indicate)	? - Uncertain whether full extent is known
50 m / ft / km / miles	

GENERAL DESCRIPTION OF COMMUNITY (See instructions for guidelines):

Predominately Jack pine (70%), with mixed red pine, red spruce, and balsam fir in the canopy. The understory is dry and open, with brackenfern and bunchberry found throughout. The Jack Pine Forest is fairly extensive, extending outside of the survey area to the north and south. The Forest also spans a large alder-dominant stream valley and two smaller wetland seeps. The Jack Pine gives way to a spruce and fir dominant forest to the south. Sugar maples saplings appear sporadically in the understory in the western edge of the Jack Pine Forest.

NATURAL COMMUNITY SURVEY	Survey Area: FID #12 Jack PineV	Vood006DMC	Obs. Pt.
SAMPLE TYPE:		Additional sampling recommended?	
Brief descriptive – NOT SUFFICIENT F	OR DOCUMENTING NEW EOS	🗶 Yes 🗌 No	
Generalized cover estimates & dbhs (p	o2)	Photos: X Yes 🗌 No	
Nested plot samples (N =) (attack	h)	→ –	

II. VEGETATION BY STRATA

TREE LAYER (canopy plus emergents, everything \geq 10 cm dbh)									
TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60% <u>70%</u> 80% 90+%				Total Basal Area: ft²/acre	Area: Conifer Canopy height _80ft m o %:100 Supercanopy spp?			m or ft	
Species name/code	Cover class*	Dbh range Din Cm	Core ages	Species name/code	Cover class*	Dbh range □in □cm	Core ages	Check here if	
Pinus banksiana	87	10-14						plot data	
Pinus strobus	3	12-16						are	
Picea rubens	19	8-10						attached	
Abies balsamea	9							instead	

Community name & EO#:

SAPLING / TALL SHRUB LAYER (> 3 m tall and < 10 cm dbh)

TOTAL COVER OF STRATUM:	<5% 10%	20% 30% 40% 50% 60% 70%	80% 90+%	
Species name/code	Cover class*	Species name/code	Cover class*	ahaali hara if
Picea rubens	19			check here if
Pinus banksiana	37			plot data are attached
Abies balsamea	19			instead

SHRUB LAYER (woody plants ~1 - 3 m tall)

TOTAL COVER OF STRATUM:	<5% 10%	20% 30% 40% 50% 60% 70%	80% 90+%
Species name/code	Cover class*	Species name/code	Cover class* check here if
Kalmia angustifolia	3		plot data are
Vaccinium angustifolium	3		attached
-			instead

HERB / DWARF SHRUB LAYER (all herbaceous vascular plants plus any woody plants < 1 m tall) TOTAL COVER OF STRATUM: DOMINANCE : tree regen_ __10_ _%; shrub__10_ _%; <5% 10% 20% 30% 40% 50% 60% 70% 80% 90+% graminoid_ 0 20 % _%; forb___ Cover class* Cover class* Species name/code Species name/code check here if Pteridium aquilinum 37 plot data are 19 Gaultheria procumbens attached Cornus canadensis 37 instead Gaultheria hispidula 9

BRYOID LAYER (all ground-layer non-vascular plants; do not include epiphytes)

TOTAL COVER OF STRATUM: <5% 10% 20% 30% 40% 50% 60%	70% 80% 90+%	DOMINANCE: bryophytes100	% lichens _	%
Species name/code	Cover class*	Species name/code	Cover class*	ah a ah h ana lif
Pleurozium schreberi	87			check here if
Huperzia lucidula	9			plot data are attached
				instead

*cover classes (midpoint): < 2%= 1, 2-5%= 3, 6-12%= 9, 13-24%= 19, 25-49%= 37, 50-74%= 63, 75-100%= 87

ADDITIONAL SPECIES within area where vegetation cover by strata were taken					OTHER PLANT SPP seen in community (spp codes), for complete plant species list	
Stratum	Species code	Cover class	Stratum	Species code	Cover class	

III. ENVIRONMENTAL SETTING Community name & EO#:

SOILS (rooting zone): Sample #006 Depth to which soil examined45 cm Organic layer depth18cm or □ >1 m Mineral layer below organic?yesdepth27 cm Mottling in top 30 cm?Nodepth Depth to water table:unknown Depth to obstruction:None_encountered nature of obstruction: Stoniness: □ very little (<1%)/ Imoderate (2-25%)/ □ very (>25%) pH:unknown measured in □ soil or □ interstitial water vonPost decomposition (peat substrates only) at deep	ELEVATION:1240ft m or ft? HYDROLOGIC REGIME: Upland perm flooded semiper flooded seasonally fld. tidal – irreg. fld. tidal – reg. fld. saltwater brackish freshwater unknown Stream valley and seepage wetlands within Forest.	present): Large Jack Pir Horse Brook a the east. The s to a spruce an and a spruce, to the west. MICROTOPOGRAPH Jack Pine Fore northwestern f descends in el eastern and w	SLOPE : Include units! (45° = 100%) 10% = 25% ■ measured estimated SS (describe zones or patches if the stand located between and one of its tributaries to Jack pine Forest convert d fir forest to the south, fir and sugar maple forest AY: est is mid-slope on a facing hillside, and levation on both the estern sides as it stream valleys.
AVERAGE TEXTURE: DRAINAGE & MOISTURE REGIME (see MAPPSS key): gravel very poorly drained sand poorly drained loamy sand / sandy loam poorly drained loam somewhat poorly drained silt loam well drained clay loams somewhat excessively drained peat excessively drained muck muck	BEDROCK TYPE: lgneous granite dioritic gabbroic Metamorphic slate/phyllite schist/gneiss Sedimentary limestone other details?	TOPOGRAPHIC POS D drainage cha D drainage cha P low plain, lev N narrow valler T toe of slope L lower slope M middle slope T hillside terrad U upper slope E cliff/ledge S ridge, summ	annel Dedrock vel Dedrock vel Ialus slope glacial till moraine esker/outwash glacial delta I acustrine/fluvial aeolian

Maine Natural Areas Program, Maine Department of Agriculture, Conservation and Forestry

THREATS TO COMMUNITY? Logging

MANAGEMENT / PROTECTION NEEDS?

OTHER COMMENTS: animal use, species distribution notes, etc.

This community is located on triangular swath of habitat bounded on the south by a spruce/fir forest bordering Spencer Road, the northwestern side by Horde Brook and on the northeastern side by an unnamed tributary of Horse Brook. The site drain northward and into the Moose river.

IV. SUMMARY AND RANKING Community name & EO#:

Applicable National Type:	NVC CODE:	Comment re fit to type?								
	CEGL00									
COMMUNITY RANKING										
1. CURRENT CONDITION and quality of the community itself.										
 Comment on the species composition and biological structure development/maturity, etc.) For forests: Do you consider this 	ure of the commun to be old growth?	ity (species diversity, indicator species, f so, based on what?								
 Natural and anthropogenic disturbance within the community (check off, then describe extent and how recent below) Logging – most recently c30+ yrs ago Agriculture / pasture Fire Wind or ice damage Impoundment Exotic plants Other, list 										
List disturbance(s): to what degree have these altered natural ecological processes, and/or do they appear to effect the population? The surrounding area has been heavily logged, and is not dominated by regenerating spruce stands. The Jack Pine forest is primarily younger trees (<10 dbh), and in the past likely extended into another stand of Jack Pine approximately 500 ft to the west (See JACKPINE WOOD005DMC).										
 A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor). B – Some signs of human disturbance or degradation, but community generally intact. C – Signs of human disturbance or degradation, community compromised in some significant way. D – Highly disturbed (multiple impacts causing community to be drastically altered). 										
2. SIZE / QUALITY: What is the approximate size of the community occurrence?1	1.4 acres	en acres / hectares								
Covers the natural extent of this community type	s been truncated thr	ough adjacent land use								
Size / Quality Rank: 🔲 A – Excellent 🕑 B – Good 🗌	C – Fair 🗌	D – Poor								
3. LANDSCAPE CONTEXT of the area surrounding the community:		1								
What land uses and/or natural communities surround the observed area? If around the observed area, and to what degree this may affect the observed be protected from effects of adjacent land uses?										
This natural community is located between two large stream valleys. Loggir a large contingent of Jack Pine Forest remains. To the south the Jack pine f										
 A – Community surrounded by >= 1000 acres of undisturbed lands B – Community surrounded by fairly intact landscape, though there 	-	,								
■ Community surrounded by ramy intact landscape, though there □ C – Community surrounded by fragmented forest or rural landscape										
D – Surrounding area developed.										
OVERALL RANK for Community A – Excellent B based on your experience Comments: B	– Good 🗨 C – Fa	ir D – Poor ⊡ E – Extant								

NATURAL COMM	IUNITY SURVEY	Survey Area:FID #12 JackPineWood006DMC	Obs. Pt.
MNAP reviewed / verified rank		□ A – Excellent □ B – Good □ C – Fair □ D – Poor □ E – Extant	t
Date:	Reviewer:	Rationale:	

PART II (con't): VEGETATION DATA from PLOT SAMPLING (replacing spp lists on p. 2, in cases where plots are taken)

TREElist species and dbh for all trees>= 10 cm dbh; count standingdead as 1 species.note units:QUAD SIZE:note which size used5.64 m radius for 1/100th ha7.98 m radius for 2/100th hause same size throughout!DEADWOOD (use tree plot)LARGE: (> 10cm dia); measurelength in plot & middle dia):	lot #							
list species and dbh for all trees >= 10 cm dbh; count standing dead as 1 species. note units: QUAD SIZE: note which size used 5.64 m radius for 1/100th ha 7.98 m radius for 2/100th ha use same size throughout! DEADWOOD (use tree plot) LARGE: (≥ 10cm dia); measure length in plot & middle dia):								
<u>LARGE</u> : (\geq 10cm dia); measure length in plot & middle dia):								
LIST DOM. SPP (IF KNOWN) <u>SMALL</u> (< 10 cm diameter): 1: < 5% 2: 6-24% 3: 25%+								
SAPLING cover class by species of: trees/shrubs > 3 m tall but < 10 cm dbh; <u>PLOT SIZE</u> : 2.8 m radius								
SHRUB cover class by species of woodies > 1 m tall but < 3 m tall; <u>PLOT SIZE</u> : 2.8 m radius								
HERB S/ cover class* by species for all herbaceous plants <u>plus</u> any woodies < 1 m tall	pecies		Species			Species		
QUAD SIZE: 1 m ² , 4 herb quads per tree plot. Enter individual cover values in right-hand columns Remember the zeros for spp present in some but not all herb quads.								
BRYOID ground-layer mosses, liverwort, lichens in herb quads.								
resolution (check one): moss"/"liverwort"/"lichen" only; identified to major group ("peat mosses, broom mosses, feather mosses", etc.); identified to genus; identified to species.								
REMARKS:		 1 1			1		<u> </u>	

* cover classes (record midpoint): < 2 1 2-5% 3 6-12% 9 13-24% 19 25-49% 37 50-74% 63 75-100% 87

Please send completed form to: Information Manager, Maine Natural Areas Program, State House Station #93, Augusta, ME 04330

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Photo #1- Overview of Jack Pine Forest Natural Community looking east JACKPINEWOOD006DMC with bracken fern understory.



Photo #2- Jack Pine Forest community looking north along logging road JACKPINEWOOD006DMC.



Photo #3- Jack Pine Natural community looking west JACKPINEWOOD006DMC.



Photo #4- Jack Pine Forest community looking northwest at forest opening JACKPINEWOOD006DMC.

Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP		Survey Site:	S o	S of Plaisted Road				
Quad name:	Wilton			Quad code:	44	4407000				
County:	Franklin	1		Town:	Jay	/				
Plant Name: Lin	dernia dubi	a var. anagallio	lea		New Dupdate Occurrence #:					
Date: 28 July 201	8 Surve	eyor(s): Art Gilr	nan			Sourcecode (MNAP assigns):			
Primary Surveyor 1 Conti Cir # 5, B			s Environmental	Phone: 802-479-7-	480	Email: avgilr	nan@together.net			
North Directions to Occ gravel pit, or follo puddle area in dis	UTM Zo Wes urrence: In a ow snowmob turd/abandor	ne 19N 🖾 Dec st Add bandoned grave ile trail downslo ned pit floor	imal Degrees (dd.d itional Coordinates l pit area S of Plais ppe from Plaisted R	Lat. 44.54054, Long ted Road, under exis	g70.1 ting po left on	63594 werlines: either old road into p	(dd mm.mm) Other			
				-			on of the observation.			
⊠ mapped to ware to ware to ware to ware to ware the mapped to ware the ware the mapped to ware the mapped	certainty /in 12.5 m of Observation	(how closely can factual location; on of Populat	n you map the featu ;] greater uncert ion Extent	are to its actual locati tainty (estimate =	ion?)]m /ft /]	xm / □miles); □ aerial delimited whether full extent is known			
EO DATA		Phenology	Population	n Area			\square Other than normal			
# of Plants 15-20	ure	In leaf In bud In flower Immature Mature fru	fruit $\begin{array}{ c c c c c c c c c c c c c c c c c c c$	quare yards square yards 00 square yards yds to 1 acre	Evide	Explain: Starved/small Evidence disease, predation, etc? Explain: Yes No Type of reproduction? Explain:				
40 % Vegetative		Seed dispe	-	+ ea actual habitat	$\boxtimes S$	Type of reproduction? Explain:				
60 % Reproductiv	/e			rea potential habitat		Asexual Not Observed				
Other Comments:	Very limite	d availabel habi	tat (mud-puddle da	mp, vs. dry sand surr	roundin	g)				
L			GEN	NERAL DESCRIPT	FION					
Associated natural community: NA/ general forest/powerline/gravel pit										
Associated plant s	species: Junc	us tenuis, Agali	lnis tenuifolia							
Substrate/soil type	e: sandy, slig	ht mud surface								
Threats to Popula										
Conservation/Ma	nagement/Re	search needs:								
Elevation Min 590' ft / m Max ft / m	\square N \square NE \boxtimes Flat \boxtimes C $590'$ ft / m \square E \square NW \square 0-10 \square P \square S \square SE \square 10-35 \square F					bhic Position Slope ope Slope n Plain	Moisture Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic Dry (xeric)			

Project (MNAP assigns)

P	1											
Photograph taken?	Specimen collected?		Do other members of this genus occur at this site? \square No \square Yes									
D No	Collection # Gilman18031		If yes, are there hybridization issues? 🗌 No; 🗌 Yes; Explain									
X Yes	Repository avg		Are there identification issues? 🗌 No; 🛛 Yes; Explain Depauperate									
Landowner name/address owner information on a se	for entire population (attach a parate sheet):	dditional	Phone		Is landowner a	ware of plant? No						
			Tax map # (if kn	own)	Is landowner protecting plant?							
			Lot # (if known)		Comments							
	EO RANKING											
habitat (check off, describ	N of the plant's immediate has below to what degree these . Note how the disturbance(s)	have altered	natural ecological p	rocesses, or if the								
Logging-most recently Agriculture / Pasture Animal effects (insect Wind or ice damage			undment c plants on	⊠ Trails / Roa ⊠ Other	icle disturbance							
Describe: Gravel quarry												
Rank B - Some C - Signs D - Highl	parent signs of human disturb signs of human disturbance or of human disturbance or degr y disturbed (multiple impacts abitat disturbed, consistent wi	r degradation adation, and l causing habit	, but habitat genera habitat compromise at to be drastically	lly intact d in some signifi altered)	cant way	-						
Does it appear to be capal Size / Quality Rank	large is this population relativ ble of maintaining itself if its h A – Excellent I ation, depauperate plants; not s	nabitat remain B – Good	ns basically intact?									
	KT of the area surrounding the nented? To what degree can th					nd the observed						
Comments:												
Rank \square B – Popu \square C – Popu \square D – Surro	lation surrounded by > = 1000 lation surrounded by fairly int lation surrounded by fragment bunding area developed Explain: Gravel pit/quarry	act landscape	e, though there may	be cuts nearby								
OVERALL RANK for I Comments:	EO based on your experience	$\mathbf{\Box} \mathbf{A} - \mathbf{Exc}$	ellent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	$\mathbf{\Sigma} \mathbf{E}$ – Extant						
MNAP reviewed / verifie	ed rank	$\square \mathbf{A} - \mathbf{Exc}$	ellent $\square \mathbf{B} - \mathbf{Good}$	od 🗌 C – Fair	D – Poor	E – Extant						
Date: Rev	viewer:	Rationale:										

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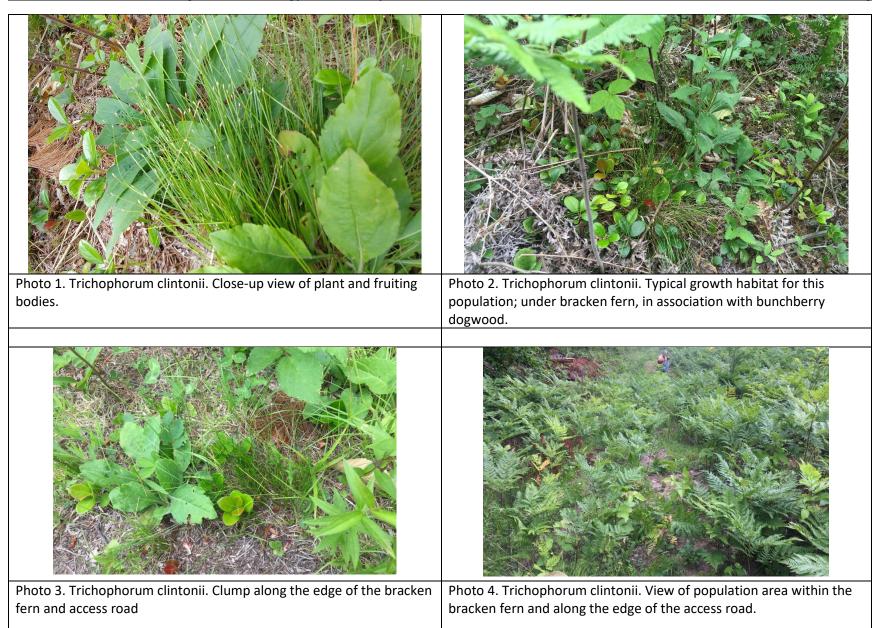
Project (MNAP assigns) ______ SPECIAL PLANT SURVEY FORM

Site:	NECEC	CMP		Survey Site:	N.	N. of Bassett Lane/Chase Stream					
Quad name:	Mahone	y Hill		Quad code:	450	45069A7					
County:	Somerse	et		Town:	Mo	Moscow					
Plant Name: Trie	chophorum	clintonii			New Update Occurrence #:						
Date: 12 July 201	8 Surve	eyor(s): Art Gilt	nan and Anna Ritch	nie		Sourcecode	(MNAP assigns):				
Primary Surveyor 1 Conti Cir # 5, B			s Environmental	Phone:		Email: avgil	man@together.net				
North Directions to Occu the east side of the	UTM Zo Wes urrence: Nor e access road	one 19N 🖾 Dec st Add rth of Bassett La d, under the brac	imal Degrees (dd.d itional Coordinates ne on the west side ken fern, with some	Lat. 45.101345, Lor	ng69.8 g, abou and alo	72975 t 100 ft up the ng the west sid					
	MAP	: Please attach	a map, preferably 1:	:24,000 scale topo m	ap, sho	wing the locat	ion of the observation.				
Locational Uncertainty (how closely can you map the feature to its actual location?) M mapped to w/in 12.5 m of actual location; greater uncertainty (estimate =m /ft /km /miles); aerial delimited Confidence in Observation of Population Extent Confident full extent of feature IS known; Confident full extent is NOT known; Uncertain whether full extent is known											
EO DATA		Phenology	Population	n Area	Vigor? \Box Normal \boxtimes Other than normal						
# of Plants 15+/- ☐ Individuals ⊠ Ramets Population Structu	170	 ☐ In leaf ☐ In bud ☐ In flower ☐ Immature ☑ Mature fru 	fruit $\boxed{5-20}{20-10}$	re yard quare yards square yards 00 square yards yds to 1 acre	rds \square No						
40 % Vegetative 60 % Reproductive		Seed dispe	ersing 1 acre		al habitat Type of reproduction? Explain: ☐ Sexual ☐ Asexual						
Other Comments: found adjacent to				ea potential habitat f observed clumps; u		ot Observed ntional habitat	for species, which is typically				
			GEN	NERAL DESCRIPT	TION						
Associated natura	l community	/: Dry sandy soil	l in and adjacent to	access road/powerlin	ne corri	dor					
Associated plant s	pecies: Pteri	idium aquilinum	n, Juncus tenuis								
Substrate/soil type	e: sandy loar	n with gravel									
Threats to Popula	tion:										
Conservation/Mar	nagement/Re	esearch needs:									
Elevation Min 650' ft / m Max ft / m	tionAspect% SlopeLight \square N \square NE \square Flat \boxtimes 050' ft / m \square E \square NW \square 0-10 \square 1 \boxtimes S \square SE \boxtimes 10-35 \square 1				pograp Crest Upper Mid-sle Lower Bottom Level H	ope Slope 1	Moisture Inundated Saturated (wet mesic) Moist (mesic) Dry-mesic Dry (xeric)				

Project (MNAP assigns)

Photograph taken?	Specimen collected?			rs of this genus of	occur at this site?							
🗌 No	🗌 No 🛛 Yes		If yes, are there hybridization issues? □ No; □ Yes; Explain									
	Collection # Gilman18024		Are there identification issues? No; Yes; Explain Somewhat depauperate; fruit already dispersed, and unusual habitat									
X Yes	Repository avg											
Landowner name/address owner information on a se	for entire population (attach a parate sheet):	dditional	Phone		Is landowner a	ware of plant? No						
			Tax map # (if kno	own)		rotecting plant? No						
			Lot # (if known)		Comments							
		EO RA	NKING		1							
habitat (check off, describ	N of the plant's immediate ha e below to what degree these Note how the disturbance(s)	have altered 1	natural ecological p	ocesses, or if the								
Logging-most recently Agriculture / Pasture Animal effects (insect Wind or ice damage			undment c plants on									
Describe: Powerline corri	dor			No Evidenc	ce of disturbance							
Rank B – Some C – Signs D – Highly Other / Ha	Condition A – No apparent signs of human disturbance (or long enough ago that effects are no longer visible or are extremely minor) Rank B – Some signs of human disturbance or degradation, but habitat generally intact C – Signs of human disturbance or degradation, and habitat compromised in some significant way D – Highly disturbed (multiple impacts causing habitat to be drastically altered) Ø Other / Habitat disturbed, consistent with needs of species / Explain: Managed powerline corridor											
Does it appear to be capab Size / Quality Rank	large is this population relatively of maintaining itself if its horizontal and the formulation of the second seco	nabitat remain B – Good	is basically intact? $\square \mathbf{C} - \text{Fair}$									
	KT of the area surrounding the ented? To what degree can th					nd the observed						
Comments:												
Rank B – Popul C – Popul D – Surro	lation surrounded by > = 1000 lation surrounded by fairly int lation surrounded by fragmen unding area developed xplain: Cleared powerline con	act landscape ted forest or 1	e, though there may rural landscape									
	EO based on your experience pears stable but may decline o		ellent $\square \mathbf{B} - \mathbf{Goc}$	d 🛛 C – Fair	D – Poor	$\mathbf{D} \mathbf{E} - \mathbf{Extant}$						
MNAP reviewed / verifie	ed rank	$\mathbf{X} \mathbf{A} - \mathbf{Exce}$	ellent $\square \mathbf{B} - \mathbf{Good}$	d 🗌 C – Fair	D – Poor	\Box E – Extant						
Date: Rev	riewer:	Rationale:										

Central Maine Power New England Clean Energy Connect Project



ATTACHMENT PRELIMINARY DATA PACKAGE SUMMARY SPREADSHEET

		Lead Surveyor	Quad Code						Number of	Phenology (in leaf, bud, flower, fruit,	Associated Natural		
GIS CODE	Date	Name	Numeric	Quad Names	Town	Latitude	Longitude	Plant Name	Individutals	etc.)	Community/Habitat	Associated Plant Species	Comments
	//2//2018	Art Gilman				NA	NA	Allium tricoccum		NA	Diverbank		No plants found during revisit.
CASI01AR CASI02AR	7/3/2018	Art Gilman	44070A2	Lewiston	Lewiston	44.023698	-70 175755	Carex siccata	100 3000	in leaf, fruit	River bank	Rubus flagellaris, Elymus repens	Two distinct areas of same population.
	//5/2018		44070A2		Lewiston	44.023038	-70.175755		5000			Impatiens capensis, sedges, Betula	Small area near open ROW, seepage area follows
DRGO01AR	7/12/2018	Art Gilman	45069A7	Mahoney Hill	Moscow	45.117098	-69.861951	Dryopteris goldiana		in leaf, fruit	Hardwood Seepage Forest	alleghaniensis	what appears to be an old logging road.
	.,											Adiantum pedatum, Deparia acrostichoides,	Rich forest spanning drier areas of wetland, with
												Fraxinus nigra, Carpinus caroliniana, Ulmus	loamy soils ranging from silty to sandy. Slight
								Enriched Northern			Maple - Basswood - Ash	americana, Athyrium angustum, Impatiens	northern aspect, abundant maidenhair fern and
EA03AR	7/26/2018	Mao Lin	45069C8	The Forks	Moxie Gore	45.356975	-69.894886	Hardwood Forest	NA	NA	Forest	capensis	only occasional basswood.
NA	7/27/2018	Art Gilman				NA	NA	Fimbristylis autumnalis	NONE	NA			No plants found during revisit.
GALKAM001DMC	7/11/2018	Duane Choquette	45070D4	Tumbledown Mountain	Appleton Township	45.466260	-70.468178	Galium kamtschaticum	506	leaf, bud, flower, imn	nNorthern Hardwood Forest	Acer saccharum, Betula alleghaniensis, Acer pensylvanicum, Glyceria striata, Impatiens capensis, Thalictrum polygamin, Oxalis montana, Galium palustre, Circaea alpina, Sambucus racemosa	Large population along the edge of an old logging road and active moose trail. The surrounding land is all utilized for logging and is currently in a regenerative state from the last logging cycle.
GALKAM002DMC	7/11/2018	Duane Choquette	45070D4	Tumbledown Mountain	Appleton Township	45.466046	-70.469440	Galium kamtschaticum	16	leaf, flower, mature f	Northern Hardwood Forest	Acer saccharum, Betula alleghaniensis, Acer pensylvanicum, Glyceria striata, Impatiens capensis, Galium palustre, Circaea alpina, Sambucus racemosa, Corlus cornuta, Nabalus altissimus, Carex utriculata, Osmunda claytonia, Trillium undulatum	Small population. Site is a junction of two old logging roads, with a hillside seep upslope.
	.,,												Small population. The surrounding land is all
GALKAM003DMC	7/11/2018	Duane Choquette	45070D4	Tumbledown Mountain	Appleton Township	45.465980	-70.469568	Galium kamtschaticum	85	leaf, flower, mature f	Northern Hardwood Forest	Acer saccharum, Betula alleghaniensis, Acer pensylvanicum, Glyceria striata, Impatiens capensis, Carex utriculata, Osmunda claytonia, Carex gynandra	utilized for logging and is currently in a regenerative state from the last logging cycle. A recent clearcut is located <100 feet to the west of the sample site.
									29				Four distinct areas of same population. Plants
GERU01AR									120				were growing along edge of cattail areas and up
GERU02AR									4				into the upland semi-forested areas along the
GERU03AR	7/6/2018	Art Gilman	45069A8	Bingham	Concord Twp	45.023784	-69.883264	Gentiana rubricaulis	1	in leaf	Mixed Graminoid - Shrub M	psycodes	edge of the ROW.
									200				Two distinct areas of same population. Northern
	7/11/2010	Ant Cilmon	4500040	Discourt Distan Dit	N	45 00 4000	CO 070222	Continue multi-	300	in leaf	Mixed Graminoid - Shrub	Carey flave Typhe latifalia Caliy discalar	area goes about 30 ft into cedar swamp forested
GERU04AR	//11/2018	Art Gilman	45069A8	Pleasant Ridge Pit	Moscow	45.094096	-69.878232	Gentiana rubricaulis	300	in leaf	Marsh	Carex flava, Typha latifolia, Salix discolor	area west of the cleared ROW.
EA01AR	7/7/2018	Art Gilman	44070D2	Livermore Falls	Livermore Falls	44.403416	-70.148538	Hardwood River Terrace Forest	NA	NA	Upper Floodplain Hardwood Forest	Querus rubra, Betula alleghaniensis, Acer rubrum, Onoclea sensibilis, Athyrium angustum, Matteuccia struthiopteris, Osmunda claytoniana (interrupted fern)	Previously characterized as Maple-Basswood- Ash. Located on a river floodplain terrace. Presence of at least one butternut tree and trees are of large size with good forest structure and few invasives.
								Hardwood River Terrace			River Terrace Hardwood/Upper	Quercus rubra, Fraxinus pennsylvanica, Ulmus americana, Lonicera morrowii, Onoclea sensibilis, Athyrium angustum, Matteuccia	On an upper terrace associated with Carrabasset Stream not for above its confluence with the Kennebec River (and likely back-flooded from the river at extremes). The community is dominated by green ash and red oak with minor component of elm. The age structure is young except for a few large red oak and green ash. The forest is rather heavily invaded by invasive honeysuckles (about 40%-50% cover overall, which is substantially more than observed in 2007). Understory herbs are typical, but lack elements of richness such as blue cohosh, wild
EA02AR	7/27/2018	Art Gilman	44069G8	Madison West	Anson	44.853352	-69.886138		NA	NA	Floodplain Hardwood Fores		leek, etc.
HOLO01AR		Art Gilman	45069A8	Bingham	Moscow	45.067711		Houstonia longifolia	500	in leaf, bud, flower	Powerline ROW/Shallow marsh - sloping edge	Danthonia spicata, Centaurea stoebe, Juniperus communis, Drymocallis arguta, Lechea intermedia	Located on high river terrace, within the cleared powerline corridor on bare gravel soil; where lichens and juniper encroach, the plants are much less robust.
												Tsuga Canadensis, Quercus rubra, Acer	No herbs in immediate vicinity. Plant was growing on steep embankment leading to a small seasonal stream. Closed forest canopy, with thick litter layer and very little understory
ISME01AR	7/5/2018	Art Gilman	44070B2	Lake Auburn East	Greene	44.221891	-70.168584	Isotria medeoloides	1	in leaf	Oak - Pine Forest	rubrum, Betula alleghaniensis	or groundcover.

	Dete	Lead Surveyor	Quad Code	Quad Namos	Taura	Latituda	Longitudo	Diant Nama	Number of	Phenology (in leaf, bud, flower, fruit,	Associated Natural	Accession and Diamat Constitution	Commonte
GIS CODE	Date	Name	Numeric	Quad Names	Town	Latitude	Longitude	Plant Name	Individutals	etc.)	Community/Habitat	Associated Plant Species	Comments Jack pine forest northwest of Egg pond. The
													stand is bordered by three large logging cuts, to the north east, and west. The Jack pine Forest
												Pinus resinosa, Huperzia lucidula, Vaccinium	extends south outside of the study corridor. An
													examination of aerial photography and field
					Bradstreet							Gaultheria procumbens, Cornus canadensis,	reconnaissance shows the jack pine forest
JackPineWood004DMC	7/18/2018	Duane Choquette	45070D3	Spencer Lake	Township T4 R7	45.495680	-70 25/000	Jack Pine Forest	NA	NA	Jack Pine Forest		ending in a spruce bog community.
JackFille WOOd004DIVIC	7/10/2010		4307003		1001131110 14107	43.495080	-70.234000	Jack Fille Forest	NA NA		Jack Fille Forest		Predominately Jack pine (90%), with mixed red
													pine and red spruce in the canopy. The
													understory is dry and open, with lowbush
													blueberries, laurels, and snowberries found
													sporadically in patches, with bracken fern
													present in areas where the canopy thins. The
													Jack Pine woodland abuts regenerating clear-
												Pinus resinosa, Huperzia lucidula, Vaccinium	cuts to both the east and west, which are
													dominated by young red spruce, though
					Bradstreet							Gaultheria procumbens, Cornus canadensis,	scattered young jack pines can be found
JackPineWood005DMC	7/18/2018	Duane Choquette	45070D3	Spencer Lake	Township T4 R7	45.496380	-70.257820	Jack Pine Forest	NA	NA	Jack Pine Forest	Pleurozium schreberi	throughout.
JackPineWood006DMC	7/18/2018	Duane Choquette	45070D2	Enchanted Pond	Bradstreet Township T4 R7	45.495550	-70.226780	Jack Pine Forest Lindernia dubia var.	NA	NA in leaf, mature fruit,	Jack Pine Forest	Pinus banksiana, Picea rubens, Pinus strobus,	Predominately Jack pine (70%), with mixed red pine, red spruce, and balsam fir in the canopy. The understory is dry and open, with bracken fern and bunchberry found throughout. The Jack Pine Forest is fairly extensive, extending outside of the survey area to the north and south. The Forest also spans a large alder-dominant stream valley and two smaller wetland seeps. The Jack Pine gives way to a spruce and fir dominant forest to the south. Sugar maples saplings appear sporadically in the understory in the western edge of the Jack Pine Forest. Very limited availabel habitat (mud-puddle
LINDU01AG	7/28/2018	Art Gilman	4407000	Wilton	Jay	44.54054	-70.163594		15-20	seed dispersing	s	Juncus tenuis, Agalilnis tenuifolia	damp, vs. dry sand surrounding).
TRCL01AR	7/12/2018		45069A7	Mahoney Hill	Moscow	45.101345		Trichophorum clintonii		in leaf, bud, fruit		Pteridium aquilinum, Chamaepericlymenum canadense	Upslope from very actively eroding stream, on dry-gravely soils under bracken fern and in access road.

NA = Not Applicable

ATTACHMENT NECEC OVERVIEW AND OCCURRENCE MAPS

