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1.0 INTRODUCTION

1.1 PEAT HARVEST LICENCE AREA

Tourbières Lambert Inc. (Lambert) has a Peat Harvesting Licence (PHL; no. 21) for an area of peatland in southeast Manitoba approximately 4 km northeast of the town of Elm listed as the Northeast Elma Bog (NE Elma Bog; see Map 1). Other nearby communities include Whitemouth (5 km northwest), Seven Sisters (21 km north-northwest), Pinawa (24 km to the north), Hadashville (26 km south), and Rennie (26 km east-southeast). The proposed peat harvest area is southeast of the intersection of Provincial Trunk Highways #11 and #44 and approximately 13 km west of Whiteshell Provincial Park. The PHL encompasses all or parts of Sections 16-11-12, 15-11-12, 22-11-12, and 21-11-12 EPM and totals approximately 800 acres (324 ha).

The NE Elma Bog is within the Whitemouth Ecodistrict in the Lake of the Woods Ecoregion. The ecodistrict is part of the Winnipeg River watershed which is part of the Nelson River drainage system. The Whitemouth Ecodistrict is a vast peat-covered lowland consisting of fens and bogs with small islands of stone, till and sand (1). While no site investigations have been undertaken by Lambert, the bog area most likely consists of black spruce bog.

Lambert also has a PHL for a second bog in southern Manitoba (PHL no. 22). This second bog is located south of Whitemouth Lake and is discussed in a separate Peatland Management Plan (PMP).

1.2 PRELIMINARY ENGAGEMENT PLAN

The preliminary Engagement Plan (submitted separately) contains a list of scoped stakeholders. Stakeholders include First Nation and Métis communities, local administration, local landowners, the trapping community, lodges, outfitters, campgrounds, snowmobile groups, non-governmental organizations and relevant government departments.

While no First Nation communities are located within 50 km of the NE Elma Bog, it is still possible that the area is currently used for traditional activities (e.g. hunting, fishing, trapping and collection of medicinal plants). Scoped First Nation communities include Brokenhead No. 4,
Wabaseemoong First Nation, Swan Lake No. 29, Fort Alexander No. 3, and Shoal Lake First Nation No. 40, 34B2, 39A, 31J, 34B1, 37A, and 39. As the official representative for Métis in Manitoba, the Manitoba Metis Federation (MMF) would be included as a stakeholder.

The preliminary Engagement Plan also contains a project description to clearly explain the project to stakeholders and discusses typical adverse effects and concerns related to peat harvest operations. Different engagement strategies which may be employed are also discussed. When Lambert decides to move forward with harvesting at the NE Elma Bog, a comprehensive Engagement Plan would be prepared and submitted.

1.3 LAND USES AND INTERESTS

Land uses near the NE Elma Bog within the Lake of the Woods Ecoregion include forestry, camping, cottaging and water-oriented recreation (e.g. fishing and boating) (1). Hunting and trapping are also significant land uses, and of special importance to Indigenous people. Agriculture also occurs in limited areas within the ecoregion, mainly in lowlands along rivers and streams where drainage has been improved. Agriculture is present approximately 1 km west of the NE Elma Bog. Crops most likely to be grown include grains for livestock feed, oilseeds and hay crops (1).

1.4 PURPOSE OF PEATLAND MANAGEMENT PLAN

In 2015, Manitoba Sustainable Development (MSD) released the Peatland Stewardship Act (C.C.S.M. c.P31) and Regulations (82/2015). As part of this act, Lambert’s previously existing quarry lease was converted to a PHL. Peat companies which have a PHL must submit a PMP, Engagement Plan, and Peat Recovery Plan (PRP), as well as any other prescribed information to MSD within the prescribed time period of 3 years (by June 15 2018) to be in compliance with the new regulations and retain harvesting rights to the areas in question. The purpose of the PMP is to promote responsible economic development through proactive resource planning and long-term peat resource management strategies (2). The Peatland Stewardship Act and Regulations outline the regulatory requirements for the PMP.
Lambert has no plans to harvest peat at the NE Elma Bog in the near future. Detailed field investigations have not been conducted to confirm that peat depth and quality are sufficient for harvesting. Peat measurements were, however, taken at this location by the Manitoba Department of Energy and Mines \(^3\). As Lambert does not expect to begin development within the current licence term of 15 years, modified submission requirements were developed in consultation with the Peatlands Specialist at MSD, Forestry and Peatlands Management Branch. For the NE Elma Bog a preliminary PMP (this document) and preliminary Engagement Plan have been prepared for submission. A PRP is not required at this time because development is not expected within the 15-year term of the PHL.

Should Lambert choose to harvest peat sooner than currently planned, a comprehensive PMP, Engagement Plan, and PRP would have to be developed. The project would also require a *Manitoba Environment Act* Licence; therefore, a Manitoba Environment Act Proposal (EAP) would be submitted to MSD. An EAP would include baseline site investigations as well as Indigenous and stakeholder engagement. Similarly, should any other relevant Acts or Regulations change in the future they would have to be appropriately addressed.

### 1.5 KEY ISSUES AND CONSIDERATIONS

Based on previous experience and knowledge of environmental effects typical of peat harvesting projects, including concerns expressed by stakeholders, an overview of the primary potential adverse effects likely to be included in the EAP are discussed in the following sections.

#### 1.5.1 Loss of Wetlands

Public concern regarding the loss of wetlands as a function of wildlife habitat and other ecological functions has become acute in some regions in Canada. This is due to land use changes such as urban development, increased population and agricultural development, which has resulted in fewer wetlands remaining \(^4\). Overall, development has accounted for approximately 15% loss of Canadian wetlands \(^4\). Peatlands are one kind of wetland. Horticultural peat harvesting only accounts for 0.02% (17,000 ha) of Canada’s total peatland area \(^5,6\). Additionally, the Canadian Sphagnum Peat Moss Association (CSPMA) has research
from peatland restoration activities showing that a functioning wetland ecosystem can be restored **within 5 to 7 years following completion of restoration.**

### 1.5.2 Loss of Wildlife Habitat

Project activities have the potential to result in loss of wildlife habitat, particularly waterfowl nesting areas. The number of waterfowl and wildlife species and the total wildlife populations in bogs and fens are generally lower in comparison to other wetland classes or to mineral soil ecosystems (6). Project activities have the potential, albeit low, to adversely affect a few small mammal species such as muskrat and beaver and game species such as woodland caribou, moose and deer that utilize peatland habitat. However, there is evidence that disturbance to bogs has little effect to wildlife diversity as the natural use of the bogs by wildlife species is typically low due to limited vegetation productivity (6,7). Habitat loss can be mitigated by minimizing loss and disturbance of vegetation, limiting construction activities to designated areas, maintaining habitat around the harvest sites (buffers), limiting operation activities to areas disturbed during construction, and re-vegetating disturbed or reclaimed areas during and after operation to restore wildlife habitat.

### 1.5.3 Loss of Rare Vegetative Species

Protecting rare or endangered species and other vegetation has become a growing issue in regard to peat harvesting projects. Peat harvesting affects vegetation that is unique to peatland bog environments such as pitcher plants (*Sarracenia* spp.), bladderworts (*Utricularia* spp.) and sundews (*Drosera* spp.) that are not found in other mineral soil environments. Many of these species are widely distributed throughout Canada's boreal wetland regions. These types of species occupy a niche that few other species are suited to, and are found in many bog ecosystems. Several orchid species, some of which are rare, also occur in peatland environments (6). The composition of vegetation in bogs tends to have a typical association of species adapted to the regional conditions. As such, the potential effects of a peat harvesting project will depend on the regional environment. If there is a large area of undisturbed bog in the region that will still support the unique vegetation types, then harvesting a peat bog that is only a small portion of the area will have minimal effects on rare vegetative species. Mitigation measures include implementing buffer areas around waterbodies, limiting construction to
designated areas and re-vegetating disturbed or reclaimed areas during and after peat harvesting operations. Additional information about peat restoration is found in Section 1.5.9.

1.5.4 Loss of Productive Forest Land

Bogs are generally found in areas which also support forestry activity which can constitute a significant part of local economies. There may be a concern that peat harvesting could result in the loss of productive forest land. Peat bogs, however, have limited merchantable timber reserves as the trees are predominately stunted black spruce with some tamarack present. Additionally, the peat areas are assessed prior to clearing with any merchantable timber harvested. Any clearing of merchantable timber would be appropriately permitted and done in collaboration with the logging company, which holds the timber rights to the region. Mitigation measures include implementing buffer areas around waterbodies, limiting construction to designated areas and re-vegetating disturbed or reclaimed areas after peat harvesting operations.

1.5.5 Release of Greenhouse Gases

The release of greenhouse gas (GHG) emissions associated with peat harvesting is another environmental concern. As Sphagnum grows, carbon is stored in the plant material. The plant material accumulates as peat because of the anaerobic conditions (low oxygen levels) due to the high water table. Land use change from project activities, particularly from undisturbed peatland (which typically has a high water table and full vegetation cover) to peatland under extraction (which has a reduced water table and no vegetation cover), results in a net increase in GHG emissions \(^8\). The net increase is caused by an increase in the rate of decomposition.

Cleary et al. (2005) established a formula for estimating the GHG emissions from land use change, which includes a value for the standard flux of GHG per unit area within peatland under extraction (1061 t/km\(^2\)/yr) and within cutover peatland under restoration (1288 t/km\(^2\)/yr). The estimated GHG emissions calculations consist of contributions from each component of the life cycle of peat harvesting. Land use change accounted for 15%, peat harvesting and processing accounted for 4%, transport to market accounted for 10% and decomposition accounted for 71% \(^8\). GHG emissions from decomposition are associated with the end use (customer).
Mitigation includes minimizing the areas cleared and preparing and implementing a restoration plan that restores the area to a carbon sink condition. The latest research indicates that the annual carbon balance returns to values comparable to the natural environment between 10 and 15 years following restoration \(^{9,10,11,12}\).

1.5.6 Surface Water Quality

Good surface water quality is valued for consumption, agriculture and recreation, and is important for migratory birds and aquatic biota. Project activities have the potential to adversely affect surface water quality. Following the removal of groundcover vegetation, the exposed peat particles can be transported into the drainage system, thus increasing suspended particles and other chemical parameters in the water. Potential effects to surface water quality can be mitigated by directing drainage water into appropriately constructed and maintained sedimentation ponds with floating booms before discharging by an outlet to the existing drainage system. Settling ponds that slow down the flow of water enabling solids to settle out of the discharge water have become an integral part of peat harvesting operations. If monitoring identifies high Total Suspended Solids (TSS) concentrations, corrective action can be taken by closing the sedimentation pond gates temporarily to limit drainage.

1.5.7 Drainage Pattern Alteration

Project activities have the potential to adversely affect the existing drainage pattern. During initial drainage and subsequent ditch deepening, there is an increase in runoff, however, this is over a limited period of time and well below the runoff of large rain events. Once the drainage system is constructed at the peat harvesting site, the rate of runoff is slightly delayed (lag time) during a rain event and the peak is slightly lower in magnitude \(^{13,14}\). This appears to be due to the storage capacity of the constructed drainage and the increased absorption created by the drained peat. Mitigation measures include minimizing the area disturbed, formulating a drainage plan to maintain the natural drainage patterns with drainage integrated into the existing natural drainage system, maintaining water levels on the adjacent undisturbed land and restoring water levels to pre-harvest conditions upon restoration.
1.5.8 Increased Traffic

Transportation of peat from the harvest areas to the processing facility during operation will result in a seasonal increase in traffic volumes on roadways. Increased truck traffic will increase dust, will further degrade the road requiring more frequent road maintenance and has the potential to increase the number of vehicle accidents and vehicle-wildlife interactions. The volume of increased traffic associated with peat harvesting would likely be minor when considering other trucks that use the roads in the area. Mitigation measures to control the potential adverse project effects associated with increased traffic include dust control by using an approved suppressant, reducing the number of vehicles traveling on gravel highways during high wind events, directing all traffic associated with the project to drive according to road conditions and adhere to the posted speed limits and providing wildlife awareness information to drivers.

1.5.9 Restoration

Restoration focuses on the re-establishment of the site as a peatland, with a functional natural ecosystem with characteristics as close as possible to the pre-harvesting conditions. Restoration has become an integral part of peatland management. A concern from stakeholders relates to the success rate of peatland restoration. Restoration research and experience within the peat industry have led to the development of peatland restoration guides that outline the approach to restoration, which can be adapted to site specific conditions (e.g. Quinty and Rochefort 2003)\(^{(15)}\). Lambert is a member of the CSPMA which has funded research on peatland restoration and monitoring since 1992. The CSPMA’s mission statement includes the sustainable management of Canadian peatlands. Restoration would follow an approved restoration protocol (e.g. Quinty and Rochefort 2003). Methods used to ensure successful restoration include leaving 0.5 m of residual peat above the mineral soil, re-profiling the harvest area, re-introduction of plant species from appropriate donor sites nearby, and raising the water table to pre-harvest levels. Follow-up monitoring is conducted post-restoration to ensure successful re-establishment of the peatland.
1.5.10 Increased Hunter Access

A typical concern often held by stakeholders is that the construction of new access roads to the peat harvest sites will increase access for hunting. If the access is not controlled this has the potential to result in overhunting and subsequently negatively affect trapping activities. Access management along constructed access roads should be considered in collaboration with regulators to mitigate these concerns.

1.5.11 Peat Fire

The burning of peat deposits can result in smoke which may cause health concerns and traffic accidents. Fires may be started naturally or as a result of human activity. Peat fires can burn for long periods of time (months, years) propagating in a creeping fashion beneath the peat surface. Forest fires are a key element for ecosystem renewal within the boreal shield environment but also pose a threat to safety and health of workers and a risk to equipment and infrastructure. To mitigate the risk of forest fires, peat harvesting operations require appropriate fire response plans, fire suppression equipment, and training in accordance with provincial Acts and regulations.
2.0 CORPORATE OVERVIEW

Lambert was founded in 1928 and is still operating from its original location in Rivière-Ouelle, Québec along the south shore of the St-Lawrence River. Lambert is currently run by the fourth generation of Lamberts and has expanded to several bogs along the north shore of the St. Lawrence and near Lac St-Jean Quebec. Lambert offers a variety of screened and bagged peat moss products for professional and retail customers. Lambert ships peat products via ground transportation to distributors and commercial users throughout Canada, United States, and Mexico directly from the production plants, and from the distribution center in Beloeil near Montreal, Québec. Lambert also exports product via container shipments around the world to South America, the Caribbean, Asia, Middle East, and Europe.

Each of Lambert’s peat bogs currently being harvested in Quebec is run autonomously. Coordination of activities is assured by the headquarters in Rivière-Ouelle, Québec. This is the original Lambert location in use since 1928. The headquarters at Rivière-Ouelle also contain the corporate office, research laboratory, and the production plant. In addition to the headquarters, Lambert has a storage and distribution centre at Boleoi, as well as operations at Longue-Rive, Escoumins, Ascension-de-Notre Seigneur, and Labrecque. Lamberts harvesting capacity is rarely affected by adverse climatic conditions because the bogs are located in different regions.

Lambert abides by all provincial and federal requirements. Lambert is a member of the CSPMA that is devoted to promoting the sustainable management of Canadian peatlands and the industry. **Lambert is also certified by Veriflora**, a certification for sustainable horticulture and eco-labeling program. Veriflora demonstrates responsible management of peatlands through leadership in environmental protection, social responsibility, and quality performance.

2.1 CORPORATE PLANNING OBJECTIVES

Lambert plans to expand its peat harvesting operations into Manitoba in the future. At that time Lambert would also establish a processing plant that would process peat harvested from several peatlands. Developing peat harvest operations in Manitoba would allow Lambert to supply the western horticultural market.
2.2 ECONOMIC DEVELOPMENT

When Lambert begins peat harvesting at the NE Elma Bog, approximately 10 employees would be hired to work at the harvesting site. When harvesting begins at the Whitemouth Lake South Bog (PHL #22) an additional 10 employees would be hired to work at that site. The processing plant would additionally require approximately 15 employees (7 employees / shift for 2 shifts). In total Lambert expects to hire 35 employees in Manitoba once the NE Elma Bog, the Whitemouth Lake South bog and the processing plant are in operation.

Economic development opportunities created as part of the project include providing a supply of wood pallets, transportation companies for transporting bulk peat to the processing plant, fuel supply, and mechanical repair services for equipment. Lambert supports local purchasing as much as possible. The primary sector where economic opportunities would be created is the transportation of bulk peat moss.

2.3 FUTURE PROVINCIAL INTERESTS

In addition to the NE Elma Bog discussed in this document, Lambert also has a PHL for a bog south of Whitemouth Lake near Sprague Manitoba. Like the NE Elma Bog, Lambert has no plans to develop the Whitemouth Lake South Bog in the near future. Additionally, Lambert has interest in potential peat harvesting on the east side of Lake Winnipeg to the south of Berens River (see Map 1). Timelines for the development of Lambert’s peat interests in Manitoba are not known at this time.

Lambert plans to construct a processing plant in Manitoba in the future when peat harvesting sites are developed. The processing plant would be located in the eastern part of the province, however, the exact location is not known at this time. Timelines for the development of the processing plant are not known at this time.
3.0 OPERATIONS OVERVIEW

3.1 REQUIRED APPROVALS

Lambert has no plans to harvest peat at the NE Elma Bog within the 15 year PHL term. The timelines for any activity at the site are unknown. When Lambert decides to move forward with developing the NE Elma Bog in the future, site investigations would be conducted to confirm that the peat is of sufficient depth and quality to establish a harvesting operation. There are no plans for peat exploration at this time.

A list of licences and permits required to authorize a peat harvesting development are listed in Table 1.

<table>
<thead>
<tr>
<th>LICENCE/PERMIT</th>
<th>ISSUEING AUTHORITY</th>
<th>APPLICATION TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Permit</td>
<td>Crown Lands or Forestry and Peatlands (FPB within Provincial Forests)</td>
<td>&gt;15 years</td>
</tr>
<tr>
<td>Environment Act Licence</td>
<td>Environmental Approvals</td>
<td>&gt;15 years</td>
</tr>
<tr>
<td>Work Permit</td>
<td>Regional/District Offices</td>
<td>&gt;15 years</td>
</tr>
<tr>
<td>Licence to Construct Water Control Works</td>
<td>Water Stewardship</td>
<td>&gt;15 years</td>
</tr>
<tr>
<td>Timber Appraisal</td>
<td>Regional/District Offices</td>
<td>&gt;15 years</td>
</tr>
<tr>
<td>Peat Surface Lease</td>
<td>Crown Lands or Forestry and Peatlands (FPB within Provincial Forests)</td>
<td>&gt;15 years</td>
</tr>
</tbody>
</table>

The sections within Manitoba’s Submission Guidelines for Peatland Management Plans pertaining to Licence and Sub-Area Boundaries, Harvesting Schedule, Harvest Area and Bulk Peat Estimates, Structures, associated Maps 2 and 3, and Tables 2 and 3 are not applicable for the modified submission requirements developed with MSD as part of the current submission. These will be necessary for a future PMP submission when Lambert intends to develop the harvesting areas.
4.0 PRE-HARVEST ACTIVITIES

This section and sub-sections Timber Removal, Site Access and Drainage Works and the associated Map 4 within the Submission Guidelines for Peatland Management Plans are not applicable for the modified submission requirements. These will be necessary for a future PMP submission when Lambert intends to develop the harvesting areas.
5.0 FIRE PROTOCOLS

This section within the Submission Guidelines for Peatland Management Plans is not applicable for the modified submission requirements. This will be necessary for a future PMP submission when Lambert intends to develop the harvesting areas.
6.0 RESIDUAL PEAT DEPTHS

Lambert has not conducted peat exploration at the NE Elma Bog; however, existing information is available from Bannatyne (1980) (provided in Appendix A). Investigations conducted by Bannatyne (1980) show peat depths ranged from 2.4 m to 3.5 m. Peat quality was not classified with the Von Post scale, however, pH values in the peat ranged from 4.1 to 4.6 at the surface, and from 4.9 to 5.9 at the lowest depth measured. The percentage *Sphagnum* was high at the surface ranging from 60% to 94% and declined at depth with *Sphagnum* contents of 12% to 40%. Additional measurements such as absorptive value, moisture content, ash content, reed/sedge content, and peat colour are provided in Appendix A. If Lambert conducts peat exploration at this location in the future, an updated map/schematic will be provided at that time (Map 5 listed in the Submission Guidelines for Peatland Management Plans).

If future peat exploration confirms that peat depth and quality are adequate to establish a harvesting operation, a minimum residual peat thickness of 0.5 m will be left above the mineral soil. This is the recommended peat depth necessary for restoration\(^{(15)}\). The quality of peat generally decreases with depth. When peat quality is not sufficient to meet horticultural purposes, harvesting will be stopped at that depth which may result in a thicker layer of residual peat. Given that detailed exploration has not yet occurred and Lambert does not plan to harvest peat in the near future, planned residual peat depths will be confirmed with appropriate standards/protocols in the future and will be part of a future comprehensive PMP submission.
7.0 SENSITIVE SITES AND SPECIES PROTOCOLS

7.1 SURVEYS

When Lambert plans to develop the NE Elma Bog in the future a Manitoba EAP would be prepared and submitted to the Environmental Approvals Branch to obtain an Environment Act Licence. As part of an EAP, baseline site investigations would be conducted including biological surveys to identify the potential presence of rare and/or protected species. Surveys would be conducted for vegetation, birds, amphibians/reptiles, fish and fish habitat, and mammals, in accordance with approved protocols. Survey protocols identify specific survey requirements including the time of year, number of survey visits, length of transects, and number of survey stations in order to maximize the likelihood of detecting rare species which may be present. A request would also be made to the Manitoba Conservation Data Centre (MBCDC) to review the provincial rare species database to determine if any occurrences of rare or protected species have been recorded in the project area.

To investigate the potential presence of any heritage or archaeological sites at the bog location a request would be submitted to the Historic Resources Branch (HRB) of Manitoba Sport, Culture, and Heritage. HRB would search their database of known heritage resources and inform the proponent of any sites located within the projects study area and conduct a screening of the risk to affect heritage resources.

7.2 PROTOCOLS IF SENSITIVE SITES OR SPECIES ARE ENCOUNTERED

If a rare species is identified during peat harvesting activities, work would be stopped in that area and an area of no-work would be established. The appropriate department of MSD would be contacted. Appropriate action may include establishment of a buffer zone, transplantation, or other considerations, as directed by MSD.

If a potential heritage site is encountered during site clearing or harvesting activities, work would stop immediately and a buffer zone would be established. The HRB would be contacted for subsequent direction. Appropriate action may include a visit from an archeologist to assess the site and determine how work should process.
7.3 PROPOSED CONTACTS AND RESOURCES

The MBCDC Coordinator would be the primary contact regarding rare and protected species. Additional resources that would be used include the Manitoba Breeding Bird Atlas to evaluate if any rare or protected bird species have been encountered in the project area.

The Manitoba HRB, Heritage Resources Registrar would be the primary contact regarding heritage sites and cultural resources. Should the project proceed and have an EAP prepared, engagement with stakeholders may also identify heritage sites near the project area.
8.0 REFERENCES


9.0 STATEMENT OF LIMITATIONS AND CONDITIONS

9.1 THIRD PARTY USE OF REPORT

This report has been prepared for Tourbières Lambert Inc. to whom this report has been addressed and any use a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. KGS Group accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions undertaken based on this report.

9.2 ENVIRONMENTAL STATEMENT OF LIMITATIONS

KGS Group prepared the environmental conclusions and recommendations for this report in a professional manner using the degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. The information contained in this report is based on the information that was made available to KGS Group during the investigation and upon the services described, which were performed within the time and budgetary requirements of the Tourbières Lambert Inc. As the report is based on the available information, some of its conclusions could be different if the information upon which it is based is determined to be false, inaccurate or contradicted by additional information. KGS Group makes no representation concerning the legal significance of its findings or the value of the property investigated.
LEGEND:
- Existing Peat Harvest License
- Major Community
- Road Network
- Berens River Future Interest
- Provincial Boundary

NOTES:
1. Future processing plant would be located in eastern Manitoba (location currently unknown).

SCALE: 1:2,000,000 METRIC 8.5"x11"

All units are metric and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1985, Zone 14. Elevations are in metres above sea level (MSL).
APPENDIX A

PEAT MEASUREMENTS AT NORTHEAST ELMA BOG (BANNATYNE 1980)
FIGURE 27: Profiles of Northeast Elma bogs, showing percentage of Sphagnum.
<table>
<thead>
<tr>
<th>Bog</th>
<th>Sampling Site</th>
<th>Depth in m</th>
<th>Absorptive Value</th>
<th>Botanical Composition</th>
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<tr>
<td></td>
<td></td>
<td>Dry basis</td>
<td>250% moisture</td>
<td>Ash %</td>
</tr>
<tr>
<td>Northeast Elm</td>
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**Notes:**
- Lt+: Light brown
- Lt+ med: Light brown medium
- Med: Medium brown
- Med-dik: Medium brown dark
- Dk: Dark brown
- Very lt: Very light brown