

Gouvernement du Québec

**O.C. 114-2019, 13 February 2019**

Natural Heritage Conservation Act  
(chapter C-61.01)

Permanent status of the Réserve de biodiversité de la Moraine-d'Harricana, the Regulation respecting that reserve and its conservation plan

WHEREAS, under the first paragraph of section 43 of the Natural Heritage Conservation Act (chapter C-61.01), the Minister of Environment and the Fight Against Climate Change may recommend to the Government that all or part of land set aside under section 27 of the Act be assigned a permanent protection status as biodiversity reserve;

WHEREAS, under the second paragraph of section 43 of the Act, the Minister is to submit at the same time to the Government for its approval the conservation plans for the land;

WHEREAS, by Order in Council 484-2004 dated 19 May 2004, the Government authorized the Minister of the Environment to assign the status of proposed biodiversity reserve to the territories of the Decelles reservoir and the Piché-Lemoine forest and approved the plan of those areas and the proposed conservation plans for those areas;

WHEREAS, by Minister's Order dated 17 June 2004 (2004, *G.O.* 2, 2301), the Minister of the Environment assigned the status of proposed biodiversity reserve to the territories of the Decelles reservoir biodiversity reserve and the Piché-Lemoine forest, for a period of 4 years beginning on 14 July 2004;

WHEREAS, by Order in Council 136-2008 dated 20 February 2008, the Government approved the amendments to the conservation plans of those reserves;

WHEREAS the setting aside of those territories was extended for 4 years under the Order of the Minister of Sustainable Development, Environment and Parks dated 19 June 2008 (2008, *G.O.* 2, 2561) and 8 years under the Order of the Minister of Sustainable Development, Environment and Parks dated 11 May 2012 (2012, *G.O.* 2, 709);

WHEREAS, in accordance with the first paragraph of section 39 of the Natural Heritage Conservation Act, the Minister of Sustainable Development, Environment and Parks entrusted the mandate to hold a public consultation on the proposed Decelles reservoir biodiversity reserve and the proposed Piché-Lemoine forest biodiversity reserve to

the Bureau d'audiences publiques sur l'environnement and its inquiry and public hearing report was made public on 17 July 2008;

WHEREAS the report deals with the feasibility of enlarging the territories of the proposed Decelles reservoir biodiversity reserve and the proposed Piché-Lemoine forest biodiversity reserve and concludes, among other things, that permanent protection status should be assigned to them;

WHEREAS the limits of the proposed Decelles reservoir biodiversity reserve and those of the proposed Piché-Lemoine forest biodiversity reserve were reassessed by the Minister, amalgamated and changed after the public consultation to ensure increased protection to a portion of the Harricana moraine and associated ecosystems, and to rely on natural elements easily visible on the site to facilitate management;

WHEREAS the new plan of the reserve resulting from that amalgamation, that is, the Réserve de biodiversité de la Moraine-d'Harricana, its conservation plan and its technical description of the territory have been prepared;

WHEREAS the land included in the territory forms part of the domain of the State and is not part of a reserved area or an agricultural zone established under the Act respecting the preservation of agricultural land and agricultural activities (chapter P-41.1);

WHEREAS, in accordance with the first paragraph of section 151 of the Act respecting land use planning and development (chapter A-19.1), the Minister of Sustainable Development, the Environment and the Fight Against Climate Change notified an opinion describing the planned intervention to the council of Ville de Rouyn-Noranda and to the council of Municipalité régionale de comté de La Vallée-de-l'Or;

WHEREAS, in accordance with the first paragraph of section 152 of that Act, the council of Ville de Rouyn-Noranda, by resolution No. 2017-928 dated 27 November 2017, and the council of Municipalité régionale de comté de La Vallée-de-l'Or, by resolution No. 087-02-18 dated 21 February 2018, confirmed that the project for the establishment of the Réserve de biodiversité de la Moraine-d'Harricana complies with the objectives of the land use planning and development plan in force in their territory;

WHEREAS the Commission de toponymie sent to the Minister its approval of the name "Réserve de biodiversité de la Moraine-d'Harricana" to designate that permanent biodiversity reserve;

WHEREAS, under subparagraph *f* of paragraph 1 of section 46 of the Natural Heritage Conservation Act, in an aquatic reserve and a biodiversity reserve, any activity which the Government may prohibit by regulation is prohibited;

WHEREAS, under subparagraph *g* of paragraph 1 of section 46 of the Act, in an aquatic reserve and a biodiversity reserve, subject to measures in the conservation plan authorizing the activities and specifying the conditions on which they may be carried on, any allocation of a right to occupy land for vacation resort purposes, earthwork, backfilling or construction work and commercial activities are prohibited;

WHEREAS, under paragraph 2 of section 46 of the Act, all other activities are permitted, in addition to those prohibited by paragraph 1 of that section, subject to the applicable conditions;

WHEREAS, in accordance with sections 10 and 11 of the Regulations Act (chapter R-18.1), the draft Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana was published in Part 2 of the *Gazette officielle du Québec* of 10 May 2017 with a notice that it could be made by the Government on the expiry of 45 days following that publication;

WHEREAS it is expedient to make the Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana with amendments, in particular to include the technical description of the territory and to make technical adjustments;

WHEREAS, under paragraph 3 of section 44 of the Natural Heritage Conservation Act, the establishment of a biodiversity reserve and a change in its limits, or its abolishment, is effected by order of the Government, on a proposal by the Minister, subject to the publication of a notice of the decision of the Government to establish a biodiversity reserve in the *Gazette officielle du Québec* with the plan of the area and the conservation plan;

WHEREAS the publication in the *Gazette officielle du Québec* of this Order in Council, of the Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana and of its conservation plan constitutes the notice required by that paragraph, including the documents that must accompany it;

WHEREAS, under section 45 of the Natural Heritage Conservation Act, permanent protection status for land, conservation plans and applicable agreements, and amendments or revocations take effect on the date of publication of the order in the *Gazette officielle du Québec* or on any later date specified in the order;

IT IS ORDERED, therefore, on the recommendation of the Minister of Environment and the Fight Against Climate Change:

THAT permanent biodiversity reserve status be assigned to the territory described in the Regulation attached to Schedule I to this Order in Council, under the name "Réserve de biodiversité de la Moraine-d'Harricana";

THAT the Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana, attached to Schedule I to this Order in Council, be made;

THAT the conservation plan applicable to the Réserve de biodiversité de la Moraine-d'Harricana, attached to Schedule II to this Order in Council, be approved;

THAT permanent status of the Réserve de biodiversité de la Moraine-d'Harricana and its conservation plan take effect on the fifteenth day following the date of their publication in the *Gazette officielle du Québec*.

YVES OUELLET,  
*Clerk of the Conseil exécutif*

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## SCHEDULE I

### Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana

Natural Heritage Conservation Act  
(chapter C-61.01, s. 43 and s. 46, par. 1, subpars. *e, f* and *g*, and par. 2)

1. The Réserve de biodiversité de la Moraine-d'Harricana is constituted in the territory described in the Schedule.

2. For the purpose of this Regulation

(1) the words or terms "high-water mark", "littoral zone", "floodplain", "lakeshore" and "riverbank" have the same meaning as the meaning given in the Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains (chapter Q-2, r. 35);

(2) the term "wetlands and bodies of water" has the same meaning as the meaning given in section 46.0.2 of the Environment Quality Act (chapter Q-2);

(3) the term "forest development activity" has the same meaning as the meaning given in the Sustainable Forest Development Act (chapter A-18.1).

**DIVISION I**  
**PROTECTION OF RESOURCES AND**  
**THE NATURAL ENVIRONMENT**

3. Subject to the prohibition in the second paragraph, no person may introduce any individuals of a native or non-native species of fauna into the biodiversity reserve, including by stocking, unless the person has been authorized by the Minister.

No person may stock a lake or watercourse for aquaculture, commercial fishing or any other commercial purpose.

Except with the authorization of the Minister, no person may introduce non-native species of flora into the biodiversity reserve.

4. No person may use fertilizers in the biodiversity reserve. Compost for domestic purposes is however permitted if it is used at least 20 metres from a lake or watercourse, measured from the high-water mark.

5. No person may remove from the biodiversity reserve species of flora, small fruits or any other non-timber forest product by mechanical means.

6. No person may in the biodiversity reserve, unless the person has been authorized by the Minister,

(1) intervene in a wetland area, in particular a marsh, swamp or peat bog;

(2) modify the natural drainage or water regime, including by creating or developing lakes and watercourses;

(3) dig, fill, obstruct or divert a lake or watercourse;

(4) installation or erect any construction, infrastructure or new works in the littoral zone, on the banks or shores or the floodplains of a lake or watercourse; no authorization is however required for minor works — quay or platform, boat shelter — installed for private purposes and may be free of charge under section 2 of the Regulation respecting the water property in the domain of the State (chapter R-13, r. 1);

(5) carry on an activity other than those referred to in paragraphs 1 to 4 likely to directly and substantially affect the biochemical characteristics or quality of wetlands and bodies of water in the biodiversity reserve, including by discharging or dumping residual materials or contaminants into the wetlands or bodies of water;

(6) carry out soil development work or an activity likely to degrade the soil or a geological formation, or to damage the vegetation cover, in particular by stripping, the digging of trenches or excavation work, including any burial, earthwork, removal or displacement of surface materials or vegetation cover, for any purpose;

(7) install or construct a structure, infrastructure or new works;

(8) reconstruct or demolish a structure, infrastructure or works;

(9) use a pesticide; no authorization is required for the use of personal insect repellent;

(10) carry on educational or research-related activities if the activities are likely to directly or significantly damage or disturb the natural environment, in particular because of the nature or size of the samples taken or the invasive character of the method or process used; or

(11) hold a sports event, tournament, rally or any other similar event where

(a) fauna or flora species are taken or are likely to be taken; or

(b) motor vehicles or craft are used.

7. Despite paragraphs 6, 7 and 8 of section 6, if the requirements provided for in the second paragraph are met, no authorization is required to carry out the following work:

(1) the maintenance, repair or improvement of any construction, infrastructure or works, including a camp, a cabin, a road or a trail, including an ancillary facility such as a lookout or stairs;

(2) the construction or installation

(a) of a dependency or a facility ancillary to a trapping camp, a rough shelter, a shelter or a cabin, including a shed, a water withdrawal facility or a discharge and disposal of waste water, grey water and toilet effluents; or

(b) of a trapping camp, a rough shelter, a shelter or a cabin if, on the date of coming into force of this Regulation, such a building was allowed under the right of use or occupancy granted, but was not yet carried out; or

(3) the demolition or reconstruction of a trapping camp, a rough shelter, a shelter or a cabin, including a dependency or a facility ancillary to such a construction, including a shed, a water withdrawal facility or a discharge and disposal of waste water, grey water and toilet effluents.

The carrying out of the work referred to in the first paragraph must comply with the following:

(1) the work involves a construction, infrastructure or works whose presence is allowed in the biodiversity reserve;

(2) the work is carried out within the area of the land or right of way covered by the right of use or occupancy in the biodiversity reserve, whether the right results from a lease, a servitude or another form of title, permit or authorization;

(3) the nature of the work or elements erected by the work will not operate to increase the area of land that may remain deforested beyond the limits allowed by the provisions applicable to the sale, lease and granting of immovable rights under the Act respecting the lands in the domain of the State (chapter T-8.1) and, if applicable, the limits set under an authorization issued in connection with that construction, works or infrastructure;

(4) the work is carried out in accordance with the prescriptions of any permit or authorization issued for the work or in connection with the construction, infrastructure or works to which they are related, as well as in compliance with the applicable legislative and regulatory measures;

(5) in the case of forest roads, the work must not result in altering or exceeding the existing right of way, enlarging the driving roadway or converting the road into a higher class road.

For the purposes of this section, repair and improvement work includes work to replace or install structures or facilities with a view to complying with the requirements of environmental regulations.

**8.** No person may bury, incinerate, abandon or dispose of residual materials or snow, except if they are disposed of in waste disposal containers, facilities or sites determined by the Minister or, in other cases, with the authorization of the Minister.

Despite the first paragraph, an outfitter holding a lease for accommodation purposes in the reserve does not need an authorization to use a disposal facility or site, in compliance with the Environment Quality Act (chapter Q-2) and its regulations, if the outfitter was already using the facility or site on the date of coming into force of this Regulation.

## **DIVISION II**

### **RULES OF CONDUCT FOR USERS**

**9.** No person may enter, carry on an activity or operate a vehicle in a given sector of the biodiversity reserve if the signage erected by the Minister restricts access, traffic or certain activities in the sector in order to protect the public from a danger or to avoid placing the fauna, flora or other components of the natural environment at risk, unless the person has been authorized by the Minister.

**10.** No person may destroy, remove, move or damage any poster, sign, notice or other type of signage posted by the Minister within the biodiversity reserve.

## **DIVISION III**

### **ACTIVITIES REQUIRING AN AUTHORIZATION**

**11.** No person may, for a period of more than 90 days in the same year, occupy or use the same site of the biodiversity reserve, unless the person has been authorized by the Minister.

For the purposes of the first paragraph,

(1) the occupation or use of a site includes

(a) staying or settling in the biodiversity reserve, for instance for vacation purposes;

(b) setting up a camp or a shelter; and

(c) installing, burying or abandoning any property in the reserve, including equipment, a device or a vehicle; and

(2) the expression “same site” includes any other site within a radius of 1 kilometre from the site.

Despite the first paragraph, an authorization is not required if a person,

(1) on the date of coming into force of this Regulation, was a party to a lease or had already obtained another form of right or another authorization allowing the person to legally occupy the land under the Act respecting the lands in the domain of the State (chapter T-8.1) or, if applicable, the Act respecting the conservation and development of wildlife (chapter C-61.1), and whose right to occupy the land is renewed or extended on the same conditions, subject to possible changes in fees; or

(2) in accordance with the law, has entitlement under a sublease, an assignment of a lease or a transfer of a right or authorization referred to in subparagraph 1, and whose right to occupy the land is renewed or extended on the same conditions, subject to possible changes in fees.

**12.** No person may carry on forest management activities to meet domestic needs or for the purpose of maintaining biodiversity, unless the person has been authorized by the Minister.

Despite the first paragraph, persons staying or residing in the biodiversity reserve and who collect wood required to make a campfire are not required to obtain the authorization of the Minister.

No such authorization is required if a person collects firewood to meet domestic needs to supply a trapping camp or a rough shelter permitted within the reserve in the following cases and on the following conditions:

(1) the wood is collected by a person in compliance with the conditions set out in the permit for the harvest of firewood for domestic purposes issued under the Sustainable Forest Development Act (chapter A-18.1);

(2) the quantity of wood collected does not exceed 7 apparent cubic metres per year.

In addition, no authorization to carry on a forest management activity is required if a person authorized by lease to occupy land within the biodiversity reserve in accordance with this Regulation carries on the forest management activity for the purpose of

(1) clearing, maintaining or creating visual openings, and any other similar removal work permitted under the provisions governing the sale, lease and granting of immovable rights under the Act respecting the lands in the domain of the State (chapter T-8.1), including for access roads, stairs or other trails permitted under those provisions; or

(2) clearing the necessary area for the installation, connection, maintenance, repair, reconstruction or improvement of power, water, sewer or telecommunication lines, facilities and mains.

If the work referred to in subparagraph 2 of the fourth paragraph is carried on for or under the responsibility of an enterprise providing any of those services, the work requires the prior authorization of the Minister, other than in the case of the exemptions provided for in sections 14 and 16.

**13.** No person may carry on commercial activities in the biodiversity reserve, except with the authorization of the Minister.

Despite the first paragraph, no authorization is required

(1) if the activity does not involve the taking of fauna or flora resources, or the use of a motor vehicle; or

(2) to carry on commercial activities if, on the date on which protection status as a biodiversity reserve takes effect, the activities were the subject of a right of use of the land for such purpose, whether or not the right results from a lease or another form of title, permit or authorization, within the limits of what the right allows.

#### **DIVISION IV** **AUTHORIZATION EXEMPTIONS**

**14.** Despite the preceding provisions, an authorization is not required for an activity or other form of intervention within the biodiversity reserve if urgent action is necessary to prevent harm to the health or safety of persons, or to repair or prevent damage caused by a real or apprehended catastrophe. The person concerned must, however, immediately inform the Minister of the activity or intervention that has taken place.

**15.** The members of a Native community who, for food, ritual or social purposes, carry on an intervention or an activity within the biodiversity reserve are also exempted from obtaining an authorization.

**16.** Despite the preceding provisions, the following activities and interventions carried out by Hydro-Québec (hereinafter the “Société”) or by any other person for Hydro-Québec do not require the prior authorization of the Minister under this Regulation:

(1) any activity or intervention required within the biodiversity reserve to complete a project for which express authorization had previously been given by the Government and the Minister, or only by the latter, in accordance with the requirements of the Environment Quality Act (chapter Q-2), if the activity or intervention is carried out in compliance with the authorizations issued;

(2) any activity or intervention necessary for the preparation and presentation of a pre-project report for a project requiring an authorization under the Environment Quality Act;

(3) any activity or intervention relating to a project requiring the prior authorization of the Minister under the Environment Quality Act if the activity or intervention is in response to a request for a clarification or for additional information made by the Minister to the Société and it is carried out in accordance with the request.

The Société informs the Minister of the various activities or interventions referred to in this section it proposes to carry out before the work is begun in the reserve.

For the purposes of this section, the activities and interventions of the Société include but are not restricted to pre-project studies, analysis work or field research, work

required to study and monitor the impact of power transmission and distribution line corridors and rights of way, geological or geophysical surveys and survey lines, and the opening and maintenance of roads required for the purpose of access, construction or traffic incidental to the work.

## DIVISION V FINAL

17. This Regulation comes into force on the fifteenth day following the date of its publication in the *Gazette officielle du Québec*.

## SCHEDULE

### TECHNICAL DESCRIPTION

#### RÉSERVE DE BIODIVERSITÉ DE LA MORAINÉ-D'HARRICANA

(s. 1)

[Translation of the technical description filed in French only in the office of the Surveyor-General of Québec of the Ministère de l'Énergie et des Ressources naturelles.]

A territory of irregular shape in the townships of Fournière, Dubuisson, Béraud, Desroberts, Laubanie, Chabert, Laudanet, Mazérac and Jourdan, in the territory of Municipalité de Rivière-Héva, Ville de Val-d'Or and Ville de Rouyn-Noranda, registration divisions of Rouyn-Noranda and Abitibi. The perimeter of the territory may be described as follows, namely:

#### PARCEL A

Starting from a point situated at the intersection of the eastern bank of rivière Piché (excluded from the biodiversity reserve) and the limit between ranges VII Nord and VIII Sud of Canton de Fournière, that is, point 1 (5 329 816 m north, 414 252 m east);

Thence, easterly, along the limit between ranges VII Nord and VIII Sud of Canton de Fournière, to the intersection of the limit between Canton de Fournière and Canton de Dubuisson, that is, point 2 (5 329 850 m north, 416 106 m east);

Thence, southerly, along the limit between Canton de Fournière and Canton de Dubuisson, to point 3 (5 329 329 m north, 416 116 m east);

Thence, easterly following a straight line having a bearing of 98°49'19" over a distance of about 584 metres, to the intersection of the southwestern right of way of an unnamed road, that is, point 4 (5 329 240 m north, 416 693 m east);

Thence, in an average southeasterly direction, along the southwestern right of way of an unnamed road and an impassible road, to the extremity of the said impassible road, that is, point 5 (5 328 712 m north, 417 669 m east);

Thence, southerly following a straight line having a bearing of 125°16'11" over a distance of about 765 metres, to the intersection of the southern right of way of an unnamed road, that is, point 6 (5 328 270 m north, 418 293 m east);

Thence, in an average easterly direction, along the southern right of way of an unnamed road and the western right of way of another unnamed road, to the intersection of the limit between ranges VI and VII of Canton de Dubuisson, that is, point 7 (5 328 252 m north, 418 432 m east);

Thence, in an average easterly direction, along the limit between ranges VI and VII of Canton de Dubuisson, to the intersection of the western right of way of chemin de la Baie-de-la-Paix, that is, point 8 (5 328 358 m north, 423 075 m east);

Thence, in an average southerly direction, along the western right of way of chemin de la Baie-de-la-Paix, corresponding to lot 5 121 604 of the cadastre of du Québec, to the intersection of a line parallel to and at a distance of 80 metres north of the limit of lot 5 121 817 of the cadastre of du Québec, that is, point 9 (5 326 324 m north, 423 522 m east);

Thence, northwesterly following a straight line having a bearing of 290°11'47" over a distance of 165 metres, to point 10 (5 326 381 m north, 423 368 m east);

Thence, westerly following a straight line having a bearing of 270°00'58" over a distance of about 67 metres, to its meeting point with the extension to the north of the western limits of lots 5 122 109 and 5 121 817 of the cadastre of du Québec, that is, to point 11 (5 326 381 m north, 423 301 m east);

Thence, southerly following the said extension of the western limit of the said lots of the cadastre of du Québec, to the intersection of the northern shore of lac Lemoine, that is, point 12 (5 326 216 m north, 423 302 m east);

Thence, in an average northeasterly direction, along the northeastern shore of lac Lemoine and the northwestern bank of rivière Thompson, to point 13 (5 326 795 m north, 425 562 m east);

Thence, easterly following a straight line having a bearing of 88°24'11" over a distance of about 399 metres, to the intersection of the eastern bank of rivière Thompspon,

so as to exclude the northern part of that river, de manière à exclure la partie North de cette rivière, that is, point 14 (5 326 806 m north, 425 961 m east);

Thence, in an average southwesterly direction, along the southeastern bank of rivière Thompson and shore of lac Lemoine, to point 15 (5 323 478 m north, 422 411 m east);

Thence, southeasterly following a straight line having a bearing of  $141^{\circ}02'07''$  over a distance of about 98 metres, to the intersection of the right of way northwest of chemin des Scouts, corresponding to lot 5 121 593 of the cadastre of du Québec, that is, point 16 (5 323 405 m north, 422 470 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of chemin des Scouts to the eastern limit of lot 5 121 862 of the cadastre of du Québec, that is, point 17 (5 322 832 m north, 421 902 m east);

Thence, northerly, following the eastern limit of that lot to the intersection of the southeastern shore of lac Lemoine, that is, point 18 (5 322 935 m north, 421 900 m east);

Thence, in an average southerly direction, along the eastern shore of lac Lemoine, to the intersection of the eastern limit of lot 5 121 862 of the cadastre of du Québec, that is, point 19 (5 322 582 m north, 421 908 m east);

Thence, northerly following the eastern limit of lot 5 121 862 of the cadastre of du Québec, to the intersection of the southeastern right of way of chemin des Scouts, that is, point 20 (5 322 798 m north, 421 903 m east);

Thence, in an average northeasterly direction, along the southeastern right of way of chemin des Scouts, to point 21 (5 323 377 m north, 422 492 m east);

Thence, southeasterly following a straight line having a bearing of  $141^{\circ}02'08''$  over a distance of about 78 metres, to the intersection of a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, that is, point 22 (5 323 316 m north, 422 541 m east);

Thence, in an average northeasterly direction, following a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, to the intersection of the southwestern limit of lot 5 121 864 of the cadastre of du Québec, that is, point 23 (5 324 885 m north, 425 163 m east);

Thence, southeasterly following the southwestern limit of lot 5 121 864 of the cadastre of du Québec, to the southern corner of the said lot, that is, point 24 (5 324 874 m north, 425 177 m east);

Thence, northeasterly following the southeastern limit of lot 5 121 864 of the cadastre of du Québec, to the intersection of the southwestern right of way of chemin des Scouts, that is, point 25 (5 325 032 m north, 425 292 m east);

Thence, in an average southeasterly direction, along the southwesterly right of way of chemin des Scouts, to the intersection with a straight line starting from point 27 having a bearing of  $63^{\circ}06'02''$ , that is, point 26 (5 323 847 m north, 426 054 m east);

Thence, southwesterly following a straight line having a bearing of  $243^{\circ}06'02''$  over a distance of about 2059 metres, to the intersection of an unnamed stream, that is, point 27 (5 322 916 m north, 424 218 m east);

Thence, southerly following a straight line having a bearing of  $188^{\circ}27'00''$  over a distance of about 1036 metres, to the intersection of the southwesterly right of way of an unnamed road, that is, point 28 (5 321 891 m north, 424 066 m east);

Thence, in an average southeasterly direction, along the southwestern right of way of an unnamed road, to the intersection of the southern right of way of another unnamed road, that is, point 29 (5 321 051 m north, 424 301 m east);

Thence, in an average easterly direction, along the southern right of way of an unnamed road, to the intersection of the western right of way of another unnamed road, that is, point 30 (5 321 009 m north, 424 632 m east);

Thence, in an average southeasterly direction, along the southwestern right of way of an unnamed road, to the intersection of the northwesterly right of way of another unnamed road, that is, point 31 (5 320 960 m north, 424 648 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to the intersection of the northern right of way of another unnamed road, that is, point 32 (5 320 521 m north, 424 310 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to the intersection of the northern right of way of another unnamed road, that is, point 33 (5 320 048 m north, 423 323 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to the intersection of the northern right of way of chemin des Merisiers, that is, point 34 (5 319 259 m north, 422 242 m east);

Thence, in an average easterly direction, along the northern right of way of chemin des Merisiers, to the intersection of the northwestern right of way of an unnamed road, that is, point 35 (5 319 258 m north, 422 260 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to the intersection of the southwestern right of way of another of another unnamed road, that is, point 36 (5 318 191 m north, 420 513 m east);

Thence, southwesterly following a straight line having a bearing of  $218^{\circ}56'31''$  over a distance of about 693 metres, to the intersection of the southwestern right of way of an unnamed road, that is, point 37 (5 317 652 m north, 420 078 m east);

Thence, southwesterly following a straight line having a bearing of  $233^{\circ}42'55''$  over a distance of 253.19 metres, to point 38 (5 317 502 m north, 419 874 m east);

Thence, northwesterly following a straight line having a bearing of  $295^{\circ}53'01''$  over a distance of about 517 metres, to the intersection of the southeastern limit of an unnamed road, that is, point 39 (5 317 728 m north, 419 408 m east);

Thence, in an average southwesterly direction, along the southeastern right of way of an unnamed road, to the intersection of the southwestern right of way of another unnamed road, that is, point 40 (5 316 897 m north, 418 962 m east);

Thence, in an average southeasterly direction, along the southwestern right of way of an unnamed road, to the intersection with a line parallel to and at a distance of 20 metres northwest of the centre line of chemin de la Baie-Carrière, that is, point 41 (5 316 649 m north, 419 307 m east);

Thence, in an average southwesterly direction, along the line parallel to and at a distance of 20 metres from the centre of chemin de la Baie-Carrière, to the intersection of the southwestern right of way of an unnamed road, that is, point 42 (5 315 555 m north, 417 929 m east);

Thence, in an average southeasterly direction, along the southwestern right of way of an unnamed road, to the intersection of the southern right of way of another unnamed road, that is, point 43 (5 315 515 m north, 417 971 m east);

Thence, in an average southerly direction, along the western right of way of an unnamed road, to the intersection of the western limit of lot 5 662 137 of the cadastre of du Québec, that is, point 44 (5 315 080 m north, 418 086 m east);

Thence, in an average southerly direction following a broken line, corresponding to the western limit of lot 5 662 137 of the cadastre of du Québec, whose approximate coordinates of its apexes are

–45 (5 315 000 m north, 418 074 m east);

–46 (5 314 927 m north, 418 077 m east);

–47 (5 314 858 m north, 418 098 m east);

Thence, easterly following the southern limit of lots 5 662 137 and 5 459980 of the cadastre of du Québec, to the intersection of the western shore of lac Ollivon, that is, point 48 (5 314 881 m north, 418 174 m east);

Thence, in an average southeasterly direction, along the southwestern shore of lac Ollivon, excluded from the biodiversity reserve, to the intersection of the western bank of an unnamed stream, that is, point 49 (5 314 454 m north, 418 603 m east);

Thence, in an average southerly direction, along the western bank of an unnamed stream and of ruisseau Desmarais, excluded from the biodiversity reserve, to the intersection of the northern bank of another unnamed stream, that is, point 50 (5 312 998 m north, 418 822 m east);

Thence, in an average southerly direction, along the western bank of unnamed streams and the northern shore of an unnamed lake, which streams and lake are excluded from the biodiversity reserve, to point 51 (5 309 818 m north, 417 803 m east);

Thence, northwesterly following a straight line having a bearing of  $294^{\circ}38'03''$  over a distance of about 252 metres, to the intersection with a line parallel to and at a distance of 20 metres west of the centre line of chemin de la Baie-Carrière, that is, point 52 (5 309 923 m north, 417 574 m east);

Thence, in an average southerly direction, following a line parallel to and at a distance of 20 metres west of the centre line of chemin de la Baie-Carrière, to the intersection of the northern right of way of an unnamed road, that is, point 53 (5 307 473 m north, 417 812 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to point 54 (5 305 680 m north, 415 250 m east);

Thence, southerly following a straight line having a bearing of  $180^{\circ}00'02''$  over a distance of about 11 metres, to the intersection of the northern shore of an unnamed lake, that is, point 55 (5 305 669 m north, 415 250 m east);



Thence, in an average southeasterly direction, along the eastern shore of an unnamed lake and unnamed streams, to the intersection with the northern shore of the Decelles reservoir, with a maximum operating water level of 311 metres, that is, point 56 (5 303 159 m north, 415 812 m east);

Thence, in an average southerly direction, along the western shore of the Decelles reservoir, with a maximum operation water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to the intersection with a straight line starting from point 56B (5 301 504 m north, 415 301 m east) whose bearing is  $80^{\circ}50'57''$ , that is, to point 56A (5 295 592 m north, 402 214);

Thence, westerly, following that straight line whose bearing is  $260^{\circ}50'57''$  over a distance of about 184 metres, that is, to point 56B (5 301 504 m north, 415 301);

Thence, southerly, following a straight line having a bearing of  $169^{\circ}00'17''$  over a distance of about 1 008 metres, to the intersection with the northern shore of the Decelles reservoir with a maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, that is, point 56C (5 300 514 m north, 415 493 m east);

Thence, in an average westerly direction, along the southern shore of the Decelles reservoir, with a maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to the intersection of the northern shore of an unnamed stream, that is, point 57 (5 299 457 m north, 409 913 m east);

Thence, in an average westerly direction, along the northern bank of unnamed streams excluded from the biodiversity reserve, to point 58 (5 299 179 m north, 405 427 m east);

Thence, southwesterly following a straight line having a bearing of  $239^{\circ}39'24''$  over a distance of about 380 metres, to the intersection of the northwestern bank of an intermittent unnamed stream, that is, point 59 (5 298 987 m north, 405 099 m east);

Thence, in an average southerly direction, along the western bank of an intermittent unnamed stream, excluded from the biodiversity reserve, to the intersection of the northeastern bank of another unnamed stream, that is, point 60 (5 297 769 m north, 405 142 m east);

Thence, in an average northwesterly direction, along the northeaster bank of an unnamed stream, excluded from the biodiversity reserve, to point 61 (5 297 985 m north, 404 525 m east);

Thence, westerly following a straight line having a bearing of  $269^{\circ}18'53''$  over a distance of about 1087 metres, to the intersection of the western bank of an unnamed stream, that is, point 62 (5 297 972 m north, 403 438 m east);

Thence, in an average southerly direction, along the western bank and northern bank of unnamed streams excluded from the biodiversity reserve, to point 63 (5 296 371 m north, 402 977 m east);

Thence, southwesterly following a straight line having a bearing of  $224^{\circ}24'24''$  over a distance of about 1091 metres, to the intersection of an unnamed stream, that is, point 64 (5 295 592 m north, 402 214 m east);

Thence, westerly following a straight line having a bearing of  $268^{\circ}01'39''$  over a distance of about 813 metres, to the intersection of the northwestern bank of an intermittent unnamed stream, that is, point 65 (5 295 564 m north, 401 401 m east);

Thence, in an average southerly direction, along the western bank of an intermittent unnamed stream, excluded from the biodiversity reserve, to the intersection of the northwestern shore of the Decelles reservoir with a maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, that is, point 66 (5 293 623 m north, 401 401 m east);

Thence, in an average westerly direction, along the northern shore of the Decelles reservoir, to the intersection of the southeastern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, that is, point 67 (5 293 368 m north, 398 803 m east);

Thence, in an average northeasterly direction, along the southeastern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, to the northeastern corner of the said reserve, that is, point 68 (5 295 001 m north, 399 801 m east) which corresponds to terminus marker #10 implanted by Jean-Yves Deblois, land surveyor, as shown on his plan bearing No. 3327 of his minutes;

Thence, northwesterly, along the northeastern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, over a distance of 777.86 metres, to point 69 (5 295 236 m north, 399 059 m east);

Thence, northeasterly following a straight line having a bearing of  $71^{\circ}41'21''$  over a distance of about 550 metres, to the intersection of the northwestern bank of an unnamed stream, that is, point 70 (5 295 409 m north, 399 581 m east);

Thence, in an average northerly direction, along the western bank of an unnamed stream, to the north-eastern right of way of an unnamed road, that is, point 71 (5 296 963 m north, 399 236 m east);

Thence, in an average northwesterly direction, along the northeastern right of way of an unnamed road, to the intersection of the southeastern right of way of regional snowmobile trail 309, that is, point 72 (5 297 455 m north, 398 725 m east);

Thence, in an average northeasterly direction, along the southeastern right of way of regional snowmobile trail 309, to the intersection of the southwestern right of way of an unnamed road, that is, point 73 (5 297 714 m north, 399 555 m east);

Thence, in an average southeasterly direction, along the southwesterly right of way of an unnamed road, to point 74 (5 297 568 m north, 400 143 m east);

Thence, easterly following a straight line having a bearing of 76°46'18" over a distance of about 618 metres, to the intersection of the southeastern right of way of an unnamed road, that is, point 75 (5 297 709 m north, 400 745 m east);

Thence, in an average northerly direction, along the eastern right of way of unnamed roads, to the intersection of the southeastern right of way of another unnamed road, that is, point 76 (5 297 929 m north, 400 702 m east);

Thence, in an average northeasterly direction, along the southeastern right of way of an unnamed road, to the intersection of the southern right of way of another unnamed road, that is, point 77 (5 298 233 m north, 400 987 m east);

Thence, northeasterly following a straight line having a bearing of 24°42'30" over a distance of about 331 metres, to the intersection of the southeastern right of way of an unnamed road, that is, point 78 (5 298 534 m north, 401 125 m east);

Thence, in an average easterly direction, along the southern right of way of an unnamed road, to point 79 (5 298 600 m north, 401 313 m east);

Thence, easterly following a straight line having a bearing of 80°06'02" over a distance of about 123 metres, to the intersection of the northeastern right of way of an unnamed road, that is, point 80 (5 298 621 m north, 401 434 m east);

Thence, northeasterly following a straight line having a bearing of 27°11'41" over a distance of about 114 metres, to the intersection of the northeastern right of way of an unnamed road, that is, point 81 (5 298 723 m north, 401 486 m east);

Thence, northeasterly following a straight line having a bearing of 38°48'58" over a distance of about 630 metres, to the intersection of the southeastern right of way of an unnamed road, that is, point 82 (5 299 214 m north, 401 881 m east);

Thence, in an average northeasterly direction, along the southeastern right of way of unnamed roads, to point 83 (5 299 595 m north, 402 297 m east);

Thence, northerly following a straight line having a bearing of 5°01'56" over a distance of about 573 metres, to the intersection of the northeastern right of way of an unnamed road, that is, point 84 (5 300 166 m north, 402 347 m east);

Thence, in an average northwesterly direction, along the northeastern right of way of unnamed roads, to the intersection of the northwestern right of way of regional snowmobile trail 309, that is, point 85 (5 301 255 m north, 400 960 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of regional snowmobile trail 309, to the intersection of the northeastern right of way of another unnamed road, that is, point 86 (5 300 973 m north, 399 808 m east);

Thence, in an average northwesterly direction, along the northeastern right of way of unnamed roads, to the intersection of the northwestern right of way of another unnamed road, that is, point 87 (5 301 553 m north, 398 705 m east);

Thence, northerly following a straight line having a bearing of 358°20'54" over a distance of about 129 metres, to the intersection with a line parallel to and at a distance of 20 metres southeast of the centre line of chemin du Rapide, that is, point 88 (5 301 682 m north, 398 701 m east);

Thence, northeasterly, following a line parallel to and at a distance of 20 metres southeast of the centre line of chemin du Rapide-Sept, to point 89 (5 303 306 m north, 401 072 m east);

Thence, easterly following a straight line having a bearing of 90°27'58" over a distance of about 882 metres, to the intersection of the eastern right of way of an unnamed road, that is, point 90 (5 303 299 m north, 401 954 m east);

Thence, in an average northerly direction, along the eastern right of way of an unnamed road, to the intersection with a line parallel to and at a distance of 20 metres southeast of the centre line of chemin du Rapide-Sept, that is, point 91 (5 303 890 m north, 401 851 m east);

Thence, in an average northeasterly direction, following a line parallel to and at a distance of 20 metres southeast of the centre line of chemin du Rapide-Sept, to the intersection of a line parallel to and at a distance of 20 metres south of an unnamed road that is, point 92 (5 311 541 m north, 413 535 m east);

Thence, in an average northeasterly direction, following a line parallel to and at a distance of 20 metres southeast of the centre line of unnamed roads, to point 93 (5 312 724 m north, 414 340 m east);

Thence, westerly to reach the eastern right of way of the road and continue in an average northeasterly direction, along the southeastern right of way of an unnamed road, to the intersection of a line parallel to and at a distance of 100 metres from the southwestern bank of ruisseau Desmarais, that is, point 94 (5 313 773 m north, 414 675 m east);

Thence, in an average northwesterly direction, along one line parallel to and at a distance of 100 metres from the southwestern bank of ruisseau Desmarais, to the intersection of the northwestern right of way of an unnamed road, that is, point 95 (5 314 231 m north, 413 723 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of an unnamed road, to point 96 (5 313 806 m north, 413 047 m east);

Thence, in an average northwesterly direction, following a line parallel to and at a distance of 20 metres north and east of the centre line of unnamed roads, to point 97 (5 314 563 m north, 412 393 m east);

Thence, southwesterly following a straight line having a bearing of 244°46'51" over a distance of about 413 metres, to the intersection of the northern shore of an unnamed lake, that is, point 98 (5 314 387 m north, 412 019 m east);

Thence, westerly following a straight line having a bearing of 256°39'40" over a distance of about 639 metres, to the intersection of the northeastern right of way of the snowmobile trail, that is, point 99 (5 314 240 m north, 411 397 m east);

Thence, in an average northwesterly direction, along the northeastern right of way of the snowmobile trail, to point 100 (5 315 013 m north, 409 801 m east);

Thence, northerly following a straight line having a bearing of 358°19'17" over a distance of about 244 metres, to the intersection of the northwestern bank of an unnamed stream, that is, point 101 (5 315 257 m north, 409 794 m east);

Thence, in an average northeasterly direction North-Est, along the northwestern bank of a stream, the shore of three unnamed lakes and the southeastern shore of lac Lemoine, so as to exclude the western part of that lake, to point 102 (5 317 828 m north, 414 230 m east);

Thence, northwesterly following a straight line having a bearing of 322°24'36" over a distance of about 214 metres, to the intersection of the northwestern bank of an unnamed stream, that is, point 103 (5 317 998 m north, 414 099 m east);

Thence, in an average northern direction, along the eastern bank of an unnamed stream and the shore of an unnamed lake, excluded from the biodiversity reserve, to the intersection of another unnamed stream, that is, point 104 (5 318 718 m north, 413 858 m east);

Thence, northwesterly following a straight line having a bearing of 348°37'36" over a distance of about 1237 metres, to the intersection of the northwestern bank of an unnamed stream, that is, point 105 (5 319 931 m north, 413 614 m east);

Thence, in an average northeasterly direction, along the western bank of an unnamed stream, to point 106 (5 320 917 m north, 413 961 m east);

Thence, northeasterly following a straight line having a bearing of 30°44'36" over a distance of about 483 metres, to the intersection of the northwestern bank of an unnamed stream, that is, point 107 (5 321 332 m north, 414 208 m east);

Thence, northerly following a straight line having a bearing of 351°16'36" over a distance of about 93 metres, to the intersection of a sinuous line corresponding to the northwestern limit of a wetland, that is, point 108 (5 321 424 m north, 414 194 m east);

Thence, in an average northeasterly direction, following a sinuous line corresponding to the northwestern limit of a wetland, passing by points whose approximate coordinates are

– 109 (5 321 652 m north, 414 207 m east);

– 110 (5 321 944 m north, 414 346 m east);

– 111 (5 322 063 m north, 414 602 m east);

– 112 (5 322 147 m north, 414 832 m east);

– 113 (5 322 245 m north, 415 012 m east);

– 114 (5 322 332 m north, 415 214 m east);

– 115 (5 322 628 m north, 415 331 m east);

– 116 (5 322 635 m north, 415 525 m east);

– 117 (5 322 604 m north, 415 680 m east);

The last point corresponds to the southeastern right of way of an unnamed road;

Thence, in an average northeasterly direction, along the southeastern right of way of unnamed roads, to point 118; (5 323 004 m north, 415 860 m east);

Thence, northerly following a straight line having a bearing of  $10^{\circ}25'10''$  over a distance of about 1380 metres, to the intersection of the southeastern shore of lac Fournière, that is, point 119 (5 324 361 m north, 416 110 m east);

Thence, in an average northerly direction, along the eastern shore of lac Fournière and an unnamed stream excluded from the biodiversity reserve, to starting point 1.

Having an area of 289.81 square kilometres (excluding the area of parcels A-1 to A-5, described below).

*EXCLUDING AND WITHDRAWING PARCELS A-1, A-2, A-3, A-4 AND A-5 DESCRIBED BELOW:*

#### **PARCEL A-1**

Starting from point 196 (5 316 019 m north, 414 893 m east) being the northwestern corner of lot 5 459 908 of the cadastre of du Québec; thence, easterly following the northern limit of lots 5 459 908, 5 459 938 to 5 459 941 of the said cadastre of to point 197 (5 316 067 m north, 415 151 m east) corresponding to the northeastern corner of the latter lot;

Thence, northeasterly following a straight line having a bearing of  $56^{\circ}58'30''$  to its intersection with the extension, southwesterly, of the northwestern limit of lot 5 459 942 of the cadastre of du Québec, to point 198 (5 316 214 m north, 415 378 m east);

Thence, northeasterly following the said extension then the northwestern limit of lot 5 459 942 to its northern corner, that is, to point 199 (5 316 340 m north, 415 499 m east);

Thence, southeasterly following the northeastern limit of that lot while extending it at the intersection of the northwestern shore of lac Lemoine, that is, point 200 (5 316 241 m north, 415 569 m east);

Thence, in an average southwesterly direction, along the northwestern shore of lac Lemoine, to the intersection of the extension of the western limit of lot 5 459 908 of the cadastre of du Québec, that is, point 201 (5 315 911 m north, 414 917 m east);

Thence, northerly following the extension then the western limit of lot 5 459 908 of the cadastre of du Québec, to starting point 196.

Having an area of 0.08 square kilometres.

#### **PARCEL A-2**

Starting from point 202 (5 320 168 m north, 420 187 m east) corresponding to the intersection of the southeastern shore of lac Lemoine with the northern limit of rang D of canton de Dubuisson of the original survey;

Thence, easterly following the northern limit of rang D and part of rang I of canton de Dubuisson to the intersection of a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine; that is, point 203 (5 320 175 m north, 420 504 m east);

Thence, in an average southwesterly direction, following a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, to point 204 (5 319 224 m north, 419 008 m east);

Thence, northerly following a straight line having a bearing of  $358^{\circ}36'54''$  over a distance of about 206 metres, to the intersection of the southeastern shore of lac Lemoine, that is, point 205 (5 319 429 m north, 419 003 m east);

Thence, in an average northeasterly direction, along the southeastern shore of lac Lemoine, to starting point 202.

Having an area of 0.35 square kilometres.

#### **PARCEL A-3**

Starting from point 206 (5 317 491 m north, 418 085 m east) corresponding to the intersection of the southeastern shore of lac Lemoine with the northeastern limit of lot 5 460 013 of the cadastre of du Québec. Thence, easterly following the northeastern limit of lots 5 460 013, 5 662 138 and their extensions to the intersection of a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, that is, point 207 (5 317 448 m north, 418 278 m east);

Thence, in an average southwesterly direction, following a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, to the intersection of

the eastern right of way of chemin Bayview, corresponding to lot 5 520 672 of the cadastre of du Québec, that is, point 208 (5 315 846 m north, 416 508 m east);

Thence, in an average southerly direction, along the eastern right of way of chemin Bayview, to the intersection of the northern right of way of chemin de la Baie-Carrière, that is, point 209 (5 314 653 m north, 416 792 m east);

Thence, in an average westerly direction, along the northern right of way of chemin de la Baie-Carrière, to the intersection of the western right of way of chemin Bayview, that is, point 210 (5 314 649 m north, 416 748 m east);

Thence, in an average northern direction, along the western right of way of chemin Bayview, to the intersection of a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, that is, point 211 (5 315 813 m north, 416 493 m east);

Thence, in an average southwesterly direction, following a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, to the intersection of the eastern right of way of chemin de la Baie-Noire, corresponding to lot 5 662 144 of the cadastre of du Québec, that is, point 212 (5 315 049 m north, 415 439 m east);

Thence, in an average southeasterly direction, along the northeastern right of way of chemin de la Baie-Noire, to the intersection of the northwestern right of way of chemin de la Baie-Carrière, that is, point 213 (5 314 520 m north, 416 540 m east);

Thence, in an average southwesterly direction, along right of way North-Ouest du chemin de la Baie-Carrière, to the intersection of right of way Sud-Ouest du chemin de la Baie-Noire, that is, point 214 (5 314 460 m North, 416 507 m Est);

Thence, in an average direction North-Ouest, along the southwestern right of way of chemin de la Baie-Noire, to the intersection of a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, that is, point 215 (5 315 051 m north, 415 406 m east);

Thence, in an average westerly direction, following a line parallel to and at a distance of 200 metres from the southeastern shore of lac Lemoine, to the intersection of the extension of the western limit of lot 5 459 917 of the cadastre of du Québec, that is, point 216 (5 315 019 m north, 415 229 m east);

Thence, northerly following the extension of the western limit and the said limit of lot 5 459 917 of the cadastre of du Québec, to the intersection of the southern shore of lac Lemoine, that is, point 217 (5 315 259 m north, 415 252 m east);

Thence, in an average northeastern direction, along the southeastern shore of lac Lemoine, to starting point 206.

Having an area of 0.90 square kilometres.

#### **PARCEL A-4**

A parcel of land known as being a research forest of the Ministère de la Forêt, de la Faune et des Parcs (FE #606 Laubanie, constraint #2104) and that could be described as follows, namely:

Startin from point 210 (5 314 649 m north, 416 748 m east) of parcel A-3 described below, southeasterly, following a straight line having a bearing of 152°36'04" over a distance of 773 metres, to the northeastern corner of research forest #606, that is, point 218 (5 313 963 m north, 417 104 m east), which is the starting point of the parcel to be described;

Thence, southerly following the eastern limit of research forest #606, to its southeastern corner, that is, point 219 (5 313 423 m north, 417 212 m east);

Thence, westerly following the southern limit of research forest #606, to its southwestern corner, that is, point 220 (5 313 308 m north, 416 674 m east);

Thence, northerly following the western limit of research forest #606, to its northwestern corner, that is, point 221 (5 313 852 m north, 416 564 m east);

Thence, easterly following the northern limit of research forest #606, to its northeastern corner, that is, starting point 218.

Having an area of 0.30 square kilometres.

#### **PARCEL A-5**

A parcel of land including private lot 5 121 859 of the cadastre of du Québec, registration division of Abitibi, excluded from the territory and that may be described as follows, namely:

Starting from point 222 (5 321 356 m north, 421 541 m east) being the eastern corner of lot 5 121 859 of the cadastre of du Québec;

Thence, southwesterly following the southeastern limit of lot 5 121 859 of the cadastre of du Québec, to the southern corner of the said lot, that is, point 223 (5 321 306 m north, 421 506 m east);

Thence, northwesterly following the southwestern limit of lot 5 121 859 of the cadastre of du Québec, to the intersection of the southeastern shore of lac Lemoine, that is, point 224 (5 321 346 m north, 421 449 m east);

Thence, in an average southeasterly direction, along the southeastern shore of lac Lemoine, to the intersection of the northeastern limit of lot 5 121 859 of the cadastre of du Québec, that is, point 225 (5 321 409 m north, 421 465 m east);

Thence, southeasterly following the northeastern limit of lot 5 121 859 of the cadastre of du Québec, to the eastern corner of the said lot, that is, starting point 222.

Having an area of 0.005 square kilometres.

#### **PARCEL B**

Starting from point 8 (5 328 358 m north, 423 075 m east) of parcel A described above, easterly, following a straight line having a bearing of  $88^{\circ}42'46''$  over a distance of about 30 metres, to the intersection of the eastern right of way of chemin de la Baie-de-la-Paix, that is, point 120 (5 328 358 m north, 423 105 m east), being the starting point of the parcel to be described;

Thence, easterly, along the limit between ranges VI and VII of canton de Dubuisson, to the intersection of the southwestern right of way of chemin des Explorateurs, that is, point 121 (5 328 366 m north, 423 478 m east);

Thence, southeasterly following the southwestern right of way of chemin des Explorateurs, to the intersection of the limit between lots 29 and 30 of rang VI of canton de Dubuisson, that is, point 122 (5 328 298 m north, 423 617 m east);

Thence, southerly following the limit between lots 29 and 30 of rang VI of canton de Dubuisson, to the intersection of the limit between ranges VI and V of canton de Dubuisson, that is, point 123 (5 326 744 m north, 423 648 m east);

Thence, easterly, along the limit between ranges V and VI of canton de Dubuisson, to the intersection of the southwestern right of way of chemin des Feuillus, corresponding to lot 5 121 607 of the cadastre of du Québec, that is, point 124 (5 326 779 m north, 425 307 m east);

Thence, southeasterly, following the southwestern limit of chemin des Feuillus, that is, part of lot 5 121 607 of the cadastre of du Québec, over a distance of 73.12 metres, that is, to point 125 (5 326 737 m north, 425 366 m east);

Thence, southeasterly, following a straight line having a bearing of  $153^{\circ}14'03''$  over a distance of about 271 metres, to the northwestern corner of lot 5 123 136 of the cadastre of du Québec, that is, point 126 (5 326 495 m north, 425 489 m east);

Thence, westerly, following the northern limit of lots 5 121 940 and 5 121 937 of the cadastre of du Québec, to the northeastern corner of lot 5 121 939 of the cadastre of du Québec, that is, point 127 (5 326 479 m north, 425 390 m east);

Thence, southwesterly, following the northwestern limit of lot 5 121 939 of the cadastre of du Québec, to the northern corner of lot 5 121 936 of the cadastre of du Québec, that is, point 128 (5 326 423 m north, 425 295 m east);

Thence, southwesterly, following the northwestern limit of lots 5 121 936 and 5 121 938 of the cadastre of du Québec, to the western corner of lot 5 121 938 of the cadastre of du Québec, that is, point 129 (5 326 339 m north, 425 239 m east);

Thence, southwesterly, following a straight line having an approximate bearing of  $228^{\circ}54'39''$  over a distance of about 71 metres, to the northern corner of lot 5 121 941 of the cadastre of du Québec, that is, point 130 (5 326 293 m north, 425 186 m east);

Thence, southwesterly, following the northwestern limit of lot 5 121 941 of the cadastre of du Québec, to the western corner of the said lot, that is, point 131 (5 326 260 m north, 425 148 m east);

Thence, southwesterly, following a straight line having an approximate bearing of  $228^{\circ}49'18''$  over a distance of about 153 metres, to the northern corner of lot 5 121 934 of the cadastre of du Québec, that is, point 132 (5 326 159 m north, 425 033 m east);

Thence, in an average southwesterly direction, following a broken line, corresponding to the northwestern limit of lot 5 121 934, whose approximate coordinates of the apexes are:

–Point 133 (5 326 146 m north, 425 018 m east);

–Point 134 (5 326 134 m north, 424 991 m east);

Thence, southwesterly, following a straight line having a bearing of  $245^{\circ}57'02''$  over a distance of 98,39 metres, to point 135 (5 326 094 m north, 424 901 m east);

Thence, southwesterly, following a straight line having a bearing of  $234^{\circ}49'13''$  over a distance of 380,01 metres, to point 136 (5 325 875 m north, 424 590 m east);

Thence, westerly, following a straight line having an approximate bearing of  $257^{\circ}41'00''$  over a distance of about 80 metres, to the northeastern corner of lot 5 122 047 of the cadastre of du Québec, that is, point 137 (5 325 858 m north, 424 512 m east);

Thence, northwesterly, following the northeastern limit of lots 5 122 047 and 5 122 048 of the cadastre of du Québec, to the northwestern corner of lot 5 122 048 of the cadastre of du Québec, that is, point 138 (5 325 881 m north, 424 411 m east);

Thence, northwesterly, following a straight line having an approximate bearing of  $284^{\circ}14'10''$  over a distance of about 198 metres, to the northeastern corner of lot 5 122 049, that is, point 139 (5 325 929 m north, 424 219 m east);

Thence, westerly, following the northern limit of lot 5 122 049 of the cadastre of du Québec, to the northeastern corner of lot 5 122 052 of the cadastre of du Québec, that is, point 140 (5 325 934 m north, 424 167 m east);

Thence, northwesterly, following the northeastern limit of lot 5 122 052 of the cadastre of du Québec, to the eastern corner of lot 5 122 051 of the cadastre of du Québec, that is, point 141 (5 325 944 m north, 424 125 m east);

Thence, northwesterly, following the northern limit of lot 5 122 051 of the cadastre of du Québec, to the eastern corner of lot 5 122 054 of the cadastre of du Québec, that is, point 142 (5 325 967 m north, 424 080 m east);

Thence, northwesterly, following the northeastern limit of lot 5 122 054 of the cadastre of du Québec, to the eastern corner of lot 5 122 050 of the cadastre of du Québec, that is, point 143 (5 325 998 m north, 424 041 m east);

Thence, northwesterly, following the northeastern limit of lots 5 122 050 and 5 122 053 of the cadastre of du Québec, to the northern corner of lot 5 122 053 of the cadastre of du Québec, that is, point 144 (5 326 075 m north, 423 965 m east);

Thence, northwesterly, following a straight line having a bearing of  $316^{\circ}14'14''$  over a distance of 123 metres, to point 145 (5 326 164 m north, 423 880 m east);

Thence, northwesterly, following a straight line having a bearing of  $294^{\circ}14'53''$  over a distance of about 360 metres, skirting to the north the unnamed lake following its northeastern shore so as to exclude the lake, to the intersection of the eastern right of way of chemin de la Baie-de-la-Paix, corresponding to lot 5 121 604 of the cadastre of du Québec, that is, point 146 (5 326 312 m north, 423 552 m east);

Thence, in an average northern direction, along the eastern right of way of chemin de la Baie-de-la-Paix, to starting 120.

Having an area of 1.79 square kilometres.

### **PARCEL C**

Starting from point 72 (5 297 455 m north, 398 725 m east) of parcel A described above, southwesterly, following a straight line having a bearing of  $213^{\circ}47'39''$  over a distance of about 1564 metres, to the intersection of the southwestern right of way of an unnamed road, that is, point 147 (5 296 155 m north, 397 855 m east), being the starting point of the parcel to be described;

Thence, in an average southeastern direction, along the southwestern right of way of an unnamed road, to the intersection of the northeastern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, that is, point 148 (5 295 241 m north, 399 043 m east);

Thence, northwesterly, along the northeastern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, over a distance of about 800 metres, to point 149 (5 295 483 m north, 398 280 m east); which corresponds to terminus marker #5 implanted by Jean-Yves Deblois, land surveyor, as shown on his plan bearing No. 3327 of his minutes;

Thence, northwesterly, along the northern limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, over a distance of 1509,31 metres, to the northwestern corner of the said ecological reserve, that is, to point 150 (5 295 747 m north, 396 794 m east), which corresponds to terminus marker #1 implanted by Jean-Yves Deblois, land surveyor, as shown on his plan bearing No. 3327 of his minutes;

Thence, southeasterly, along the western limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, over a distance of 236,70 metres, that is, to point 151 (5 295 508 m north, 396 853 m east), which corresponds to terminus marker #11 implanted by Jean-Yves Deblois, land surveyor, as shown on his plan bearing No. 3327 of his minutes;

Thence, in an average southerly direction, along the western limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, that is, to point 152 (5 294 315 m north, 397 237 m east), which corresponds to terminus marker #18 implanted by Jean-Yves Deblois, land surveyor, as shown on his plan bearing No. 3327 of his minutes;

Thence, in an average southerly direction, along the western limit of the Réserve écologique des Dunes-de-la-Moraine-d'Harricana, to the intersection of the north-western shore of the Decelles reservoir, that is, point 153 (5 293 420 m north, 397 262 m east);

Thence, in an average southerly direction, along the western shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to the intersection of the eastern limit of lot 5 460 830 of the cadastre of du Québec, that is, point 154 (5 291 019 m north, 396 766 m east);

Thence, in an average southwesterly direction, following a broken line, corresponding to the eastern, northern and western limit of lot 5 460 830 of the cadastre of du Québec, whose approximate coordinates of the apexes are:

- Point 155 (5 291 053 m north, 396 744 m east);
- Point 156 (5 291 022 m north, 396 661 m east);
- Point 157 (5 291 020 m north, 396 541 m east);
- Point 158 (5 290 995 m north, 396 505 m east);
- Point 159 (5 290 972 m north, 396 509 m east);
- Point 160 (5 290 965 m north, 396 514 m east);
- Point 161 (5 290 964 m north, 396 525 m east);
- Point 162 (5 290 957 m north, 396 535 m east);
- Point 163 (5 290 957 m north, 396 547 m east);
- Point 164 (5 290 936 m north, 396 551 m east);

Thence, southerly, following the western limit of lot 5 460 830 of the cadastre of du Québec, to the intersection of the northwestern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, that is, point 165 (5 290 910 m north, 396 542 m east);

Thence, in an average southwesterly direction, along the northwestern shore of the Decelles reservoir, to the intersection of the eastern limit of lot 5 460 929 of the cadastre of du Québec, that is, point 166 (5 290 842 m north, 396 483 m east);

Thence, in an average southwesterly direction, following a broken line, corresponding to the eastern, northern and western limit of lot 5 460 929 of the cadastre of du Québec, whose approximate coordinates of the apexes are:

- Point 167 (5 290 894 m north, 396 475 m east);
- Point 168 (5 290 899 m north, 396 454 m east);
- Point 169 (5 290 865 m north, 396 428 m east);
- Point 170 (5 290 856 m north, 396 407 m east);
- Point 171 (5 290 798 m north, 396 412 m east);

Thence, easterly, following the southern limit of lot 5 460 929 of the cadastre of du Québec, to the intersection of the northwestern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, that is, point 172 (5 290 795 m north, 396 434 m east);

Thence, in an average northwesterly direction, along the northeastern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to point 173 (5 292 506 m north, 394 600 m east);

Thence, northerly following a straight line having a bearing of 2°51'36" over a distance of about 109 metres, to the intersection of the eastern right of way of an unnamed road, that is, point 174 (5 292 615 m north, 394 605 m east);

Thence, in an average northerly direction, along the eastern right of way of an unnamed road, to the intersection of the southeastern limit of lot 5 460 806 of the cadastre of du Québec, that is, point 175 (5 292 826 m north, 394 583 m east);

Thence, northeasterly, along the southeastern limit of lot 5 460 806 of the cadastre of du Québec, to the eastern corner of the said lot, that is, point 176 (5 292 882 m north, 394 614 m east);

Thence, southeasterly, along the southwestern limit of lot 5 460 809 of the cadastre of du Québec, to the southern corner of the said lot, that is, point 177 (5 292 866 m north, 394 667 m east);

Thence, northeasterly, along the southeastern limit of lot 5 460 809 of the cadastre of du Québec to the intersection of the southeastern right of way of regional snowmobile trail 309, that is, point 178 (5 292 927 m north, 394 690 m east);



Thence, in an average northeasterly direction, along the southeasterly right of way of regional snowmobile trail 309, to starting point 147.

Having an area of 14.31 square kilometres.

#### **PARCEL D**

Starting from point 176 (5 292 882 m north, 394 614 m east) of parcel C described above, westerly, following a straight line having a bearing of 260°46'36" over a distance of about 2407 metres, to the intersection of the western limit of block A of canton de Laudanet, that is, point 179 (5 292 496 m north, 392 239 m east), being the starting point of the parcel to be described;

Thence, southerly, following the western limit of block A of canton de Laudanet, to the southwestern corner of the said block, that is, point 180 (5 292 049 m north, 392 245 m east);

Thence, easterly, following the southern limit of block A of canton de Laudanet, to the northwestern corner of block 10 of canton de Laudanet, that is, point 181 (5 292 063 m north, 393 161 m east);

Thence, southerly, following the western limit of block 10 of canton de Laudanet, to point 182 (5 291 942 m north, 393 191 m east);

Thence, southerly, following the western limit of block 10 of canton de Laudanet, to the intersection of the eastern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which lake is excluded from the biodiversity reserve, that is, point 183 (5 291 841 m north, 393 199 m east);

Thence, in an average southwesterly direction, along the eastern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to the intersection of the western limit of lot 5 460 795 of the cadastre of du Québec, that is, point 184 (5 291 563 m north, 393 109 m east);

Thence, southwesterly, along the western limit of lot 5 460 795 of the cadastre of du Québec, to the intersection of the western shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, that is, point 185 (5 291 474 m north, 393 087 m east);

Thence, in an average southwesterly direction, along the northwestern shore of the Decelles reservoir at the maximum operating water level of 311 metres, which reservoir is excluded from the biodiversity reserve, to the intersection of the northwestern right of way of an

unnamed road with the westerly extension of the northern shore of the branch of the reservoir that is, point 186 (5 288 253 m north, 388 772 m east);

Thence, in an average westerly direction, along the northern right of way of unnamed roads, to the intersection of the southern right of way of the Hydro-Québec power transmission line 36.576 metres (120 feet) in width, that is, point 187 (5 288 881 m north, 378 366 m east);

Thence, in an average northeastern direction, along the southeasterly right of way of the Hydro-Québec power transmission line 36.576 metres (120 feet) in width, to starting point 179.

Having an area of 38.47 square kilometres.

#### **PARCEL E**

Starting from point 179 (5 292 496 m north, 392 239 m east) of parcel D described above, westerly, following a straight line having a bearing of 273°04'15" over a distance of about 7284 metres, to the intersection of the northeastern bank of ruisseau Godard, that is, point 188 (5 292 886 m north, 384 965 m east), being the starting point of the parcel to be described;

Thence, in an average southeasterly direction, along the northeastern bank of ruisseau Godard then the northern and eastern shore of lac Godard and the eastern bank and shore of unnamed streams and lakes, to the intersection of the northwestern right of way of the Hydro-Québec power transmission line 36.576 metres (120 feet) in width, that is, point 189 (5 290 697 m north, 385 924 m east);

Thence, in an average southwesterly direction, along the northwestern right of way of the Hydro-Québec power transmission line 36.576 metres (120 feet) in width, to the intersection of the eastern right of way of an unnamed road, that is, point 190 (5 288 909 m north, 378 322 m east);

Thence, in an average northerly direction, along the eastern right of way of unnamed roads nom, and extending to the intersection of the southern shore of lac Dar, that is, point 191 (5 289 578 m north, 378 272 m east);

Thence, in an average northeasterly direction, along the northwestern shore of lac Dar, bank of ruisseau Alder and shore of an unnamed lake, to the intersection of the northern bank of an unnamed stream, that is, point 192 (5 292 939 m north, 381 432 m east);

Thence, in an average southeasterly direction, along the northern and northeastern bank and shore of unnamed streams and lakes, to point 193 (5 292 597 m north, 382 302 m east);

Thence, southeasterly following a straight line having a bearing of 141°09'12" over a distance of about 191 metres, to the intersection of the northern bank of an unnamed stream, that is, point 194 (5 292 448 m north, 382 422 m east);

Thence, in an average easterly direction, along the northern bank of unnamed streams and shore of an unnamed lake, to the intersection of the western bank of ruisseau Godard, that is, point 195 (5 292 880 m north, 384 924 m east);

Thence, easterly following a straight line having a bearing of 81°40'28" over a distance of about 41 metres, to starting point 188.

Having an area of 19.91 square kilometres.

The following island of the Decelles reservoir whose limit with the said reservoir must be established at the geodesic elevation of 311 metres is also included in the biodiversity reserve:

- Unnamed island #1  
Coordinate: 5 290 378 m north, 394 213 m east  
Area: 0.43 square kilometres

Notes:

— The limit of the biodiversity reserve shown on the plan accompanying the technical description was determined from the digital files in the Québec topographic and administrative database (BDTA) at a scale of 1:20,000 of the Ministère de l'Énergie et des Ressources naturelles du Québec, the digital compilation of surveys produced by the Ministère de l'Énergie et des Ressources naturelles du Québec, the data bank of the forest information system (SIEF) of the Ministère de l'Énergie et des Ressources naturelles du Québec, an excerpt of the Base de données cadastrale du Québec effective on 26 April 2017, an excerpt of the surveys officialized in the Registre du domaine de l'État effective on 26 April 2017, the mining right management system (Gestim) of the Ministère de l'Énergie et des Ressources naturelles du Québec and information from satellite images of the sectors concerned.

— The limits along the shore of the Decelles reservoir must be established at the geodesic elevation of 311 metres, that is, the maximum operating level.

— Generally, all the beds of watercourses, rivers and lakes are included in the biodiversity reserve. Only those excluded are mentioned in this technical description.

— The limits defined by the shore of a lake or the bank of a river or stream correspond to the high-water mark.

— The coordinates and areas used in this technical description are approximate. They were graphically determined from the said data used to determine the limit of the biodiversity reserve. They are given in metres in reference to the Québec plane coordinate system (SCOPQ), Modified Transverse Mercator projection (MTM), Time Zone 10 (central meridian 79°30'), North American Datum 1983 (NAD83).

— The measures comply with the International System of Units.

— The limit of the biodiversity reserve is based on the actual layout of the elements described in this document and must be legally interpreted in such a way. It was prepared by the Direction des aires protégées of the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques.

— The territory of the biodiversity reserve, as described in this technical description includes only the lands in the domain of the State. Any land that is not part of the domain of the State is excluded from the biodiversity reserve.

— The territory is represented on a plan at a scale of 1:25,000.

— In accordance with the instructions of the Direction des aires protégées, the information contained in the fundamental documents provided by the mandator, from which this technical description was prepared, is accepted as fact.

The whole as shown on the plan prepared by the undersigned on 8 February 2018 and filed with the office of the Surveyor-General of Québec of the Ministère de l'Énergie et des Ressources naturelles under document number 536700.

Prepared in Québec by Pierre Hains, land surveyor, on 8 February 2018, under number 11 503 of his minutes.

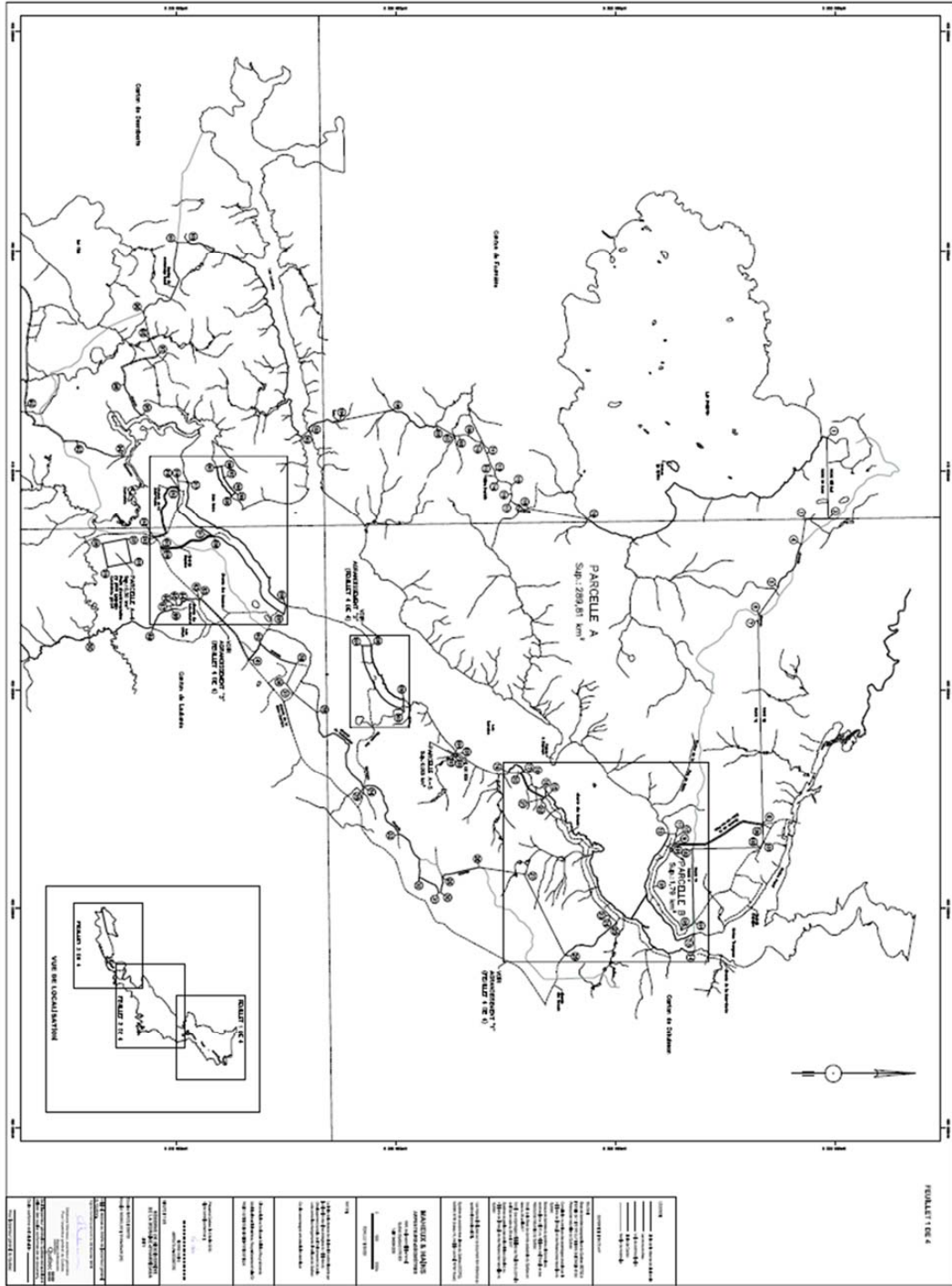
Digitally signed by:

PIERRE HAINS,  
*Land Surveyor*

Ministère du Développement durable,  
de l'Environnement et de la Lutte contre  
les changements climatiques

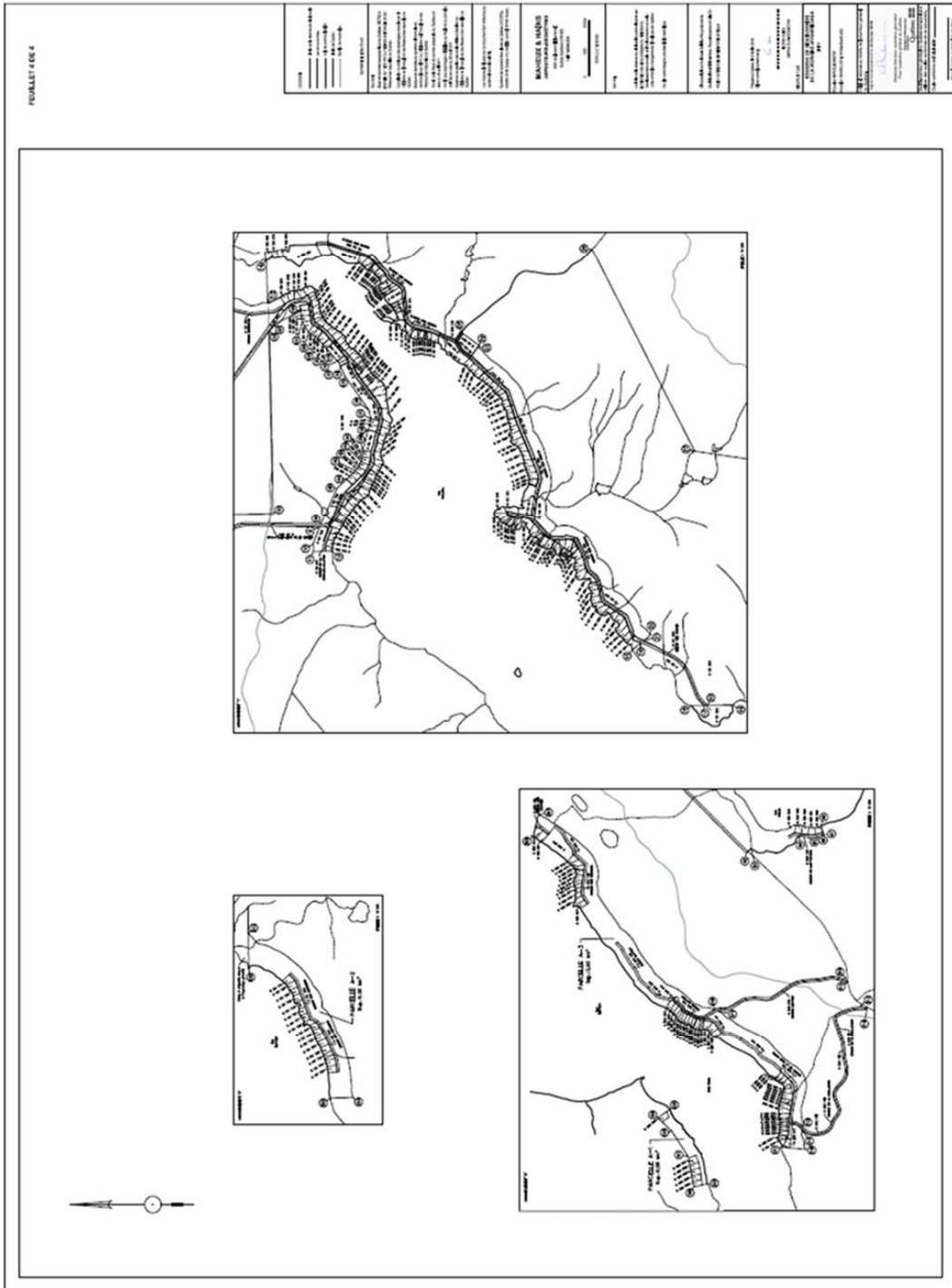
Direction des aires protégées

MDDELCC record: 5148-06-08-22









**SCHEDULE II**

CONSERVATION PLAN OF THE RÉSERVE DE BIODIVERSITÉ DE LA MORAINÉ-D'HARRICANA



**Réserve de  
biodiversité  
de la Moraine-  
d'Harricana**



CONSERVATION PLAN

Cover page photos: Marc-André Bouchard

Reference to cite:

Gouvernement du Québec. 2018. Conservation Plan, Réserve de biodiversité de la Moraine-d'Harricana. Québec, Ministère de l'Environnement et de la Lutte contre les changements climatiques, Direction des aires protégées. 33 pages.



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## Introduction

In 2004, the Gouvernement du Québec moved to protect two territories, one in the area of Réservoir Decelles, the other in the vicinity of Lac Lemoine.

The legal and provisional status of proposed biodiversity reserve was officially granted to both territories in July 2004 under section 27 of the *Natural Heritage Conservation Act* (chapter C-61.01). The proposed biodiversity reserves were given the temporary names of Réserve de biodiversité projetée de la forêt Piché-Lemoine and Réserve de biodiversité projetée du Réservoir Decelles.

On February 22, 2007 the Minister of Sustainable Development, Environment and Parks (MDDEP) mandated the Bureau d'audiences publiques sur l'environnement (BAPE) to hold a public consultation on the proposed protected areas of Lac Opasatica, Lac des Quinze, Forêt Piché-Lemoine and Réservoir Decelles. This mandate was given to the BAPE in accordance with section 39 of the *Natural Heritage Conservation Act*, which provides for a public consultation process before permanent protection status is recommended to the Gouvernement du Québec for a territory reserved for the creation of a new protected area. The BAPE's mandate began on March 8, 2007 and concluded on August 8 of the same year. The consultation was held in April and May 2007 in Val-d'Or, Rouyn-Noranda, Angliers, Lac-Simon and Winneway. The BAPE's inquiry and public hearing report (No. 244) was submitted to the Minister of the MDDEP on August 8, 2007 (BAPE, 2007). In its report, the commission recommended giving permanent protection status to the proposed biodiversity reserves of Forêt Piché-Lemoine and Réservoir Decelles.

Réserve de biodiversité de la Moraine-d'Harricana is the result of combining the two proposed biodiversity reserves. By giving permanent protected status to Réserve de biodiversité de la Moraine-d'Harricana, the Gouvernement du Québec ensures the definitive protection of representative samples of the biological diversity of the Abitibi lowlands natural province. More specifically, it protects representative ecosystems of two natural regions, the Lac Témiscamingue lowlands and the Abitibi plain. More precisely still, the reserve protects the ecosystems of three physiographic complexes: the Réservoir Decelles mounds, the Lac Parent plain and the Lac Preissac plain (MDDELCC, 2014a). Protection is thus accorded to a variety of ecosystems within a single biodiversity reserve. Additionally, the reserve consolidates the protection of Réserve écologique des Dunes-de-la-Moraine-d'Harricana, and joins a network of representative and exceptional protected areas that protects the various types of ecosystems across Québec.

The new biodiversity reserve combines the protection objectives of both proposed reserves, namely the protection of a complex of dunes and ombrotrophic bogs, a complex of low mounds, a recreational forest accessible to the public, and a significant portion of the Harricana moraine. The area protected with this last has been expanded with the fusion of the two proposed reserves, the extensions serving to protect more of the moraine and its associated environments. Réserve de biodiversité de la Moraine-d'Harricana thus protects a variety of noteworthy forests, including old yellow birch-balsam fir stands at the northern limit of their range, which could be considered exceptional forest ecosystems of the rare forest type.

## 1. The territory of Réserve de biodiversité de la Moraine-d'Harricana

### 1.1 Official toponym

Réserve de biodiversité de la Moraine-d'Harricana: the name refers to the presence of Harricana moraine, which is named after Rivière Harricana. The name "*Harricana*", spelled "*Harricanaw*", was first given in 1910 to the village along the river, which today is the city of Amos. Of Algonquin origin, the name means "*biscuit river*", where the term biscuit refers to a sort of hard bread that could be kept a long time and was highly appreciated by nomadic bands and voyageurs. According to the Commission de toponymie du Québec (1996), the Algonquins also use the name "*Inikana*", which is translated as "*river route*". Other spellings with implications for the meaning of name are also noted by the Commission de toponymie: "*anâkona*" (Algonquin), "*uhnahkoonah*" (Ojibway) and "*ayukoona'w*" (Cree).

### 1.2 Geographical location, boundaries and dimensions

The location and boundaries of Réserve de biodiversité de la Moraine-d'Harricana are illustrated in Appendix 1.

**Location:** Réserve de biodiversité de la Moraine-d'Harricana is located in the Abitibi-Témiscamingue region, in the regional county municipality of La Vallée-de-l'Or. It includes parts of three municipalities: the city of Rouyn-Noranda, the city of Val-d'Or and the municipality of Rivière-Héva, and extends between 47°43'07" and 48°05'53" north latitude and between 77°52'30" and 78°31'22" west longitude. The reserve is less than 10 km west of downtown Val-d'Or, and about 20 km northeast of

Winneway, where the Long Point First Nation has settled. The biodiversity reserve can be accessed either from highway 117 or via the Rapide-Sept or Baie-Carrière roads. It is served by an extensive network of forest roads that enter the territory from the north, south and central parts of the reserve.

The reserve is also about 40 kilometres west of Lac-Simon, and 60 kilometres northwest of Kitcisakik (MDDEP, 2007).

**Area and boundaries:** The initial area of the proposed reserves, when they were set aside in 2004, was 81 km<sup>2</sup> and 94 km<sup>2</sup>. Following the public hearings, different expansion proposals were presented to the MELCC. In its analysis report (No. 244), the BAPE recommended evaluating the possibility of expanding the proposed reserves to include the areas of interest suggested, before granting permanent protection status (BAPE, 2007).

The area of Réserve de biodiversité de la Moraine-d'Harricana is 365 km<sup>2</sup>, encompassing the merged territory of the proposed reserves of Forêt Piché-Lemoine and Réservoir Decelles. The final boundaries were defined on the basis of natural or anthropic elements that are easily identified on the ground, such as watercourses, lakes, forest roads and the edges of bogs. For sections along the banks of watercourses and water bodies, the real boundary is the natural high-water mark. For the section along the shores of the Decelles reservoir, the boundary corresponds to the of 311 metres.

The northern part of the reserve is crossed in an east-west direction by a 120 kV electrical transmission line, circuit 1339 Rapides des îles / Rapides-7. The transmission line and its right of

way (averaging about 37 metres in width) are excluded from the reserve. The excluded land corresponds to an easement granted to Société Hydro-Québec, as recorded in the Registre du domaine de l'État. Additionally, in its central part the boundary of the reserve follows that of a Hydro-Québec property surrounding the Rapide-7 dam, and circles around Réserve écologique des Dunes-de-la-Moraine-d'Harricana.

The legal boundaries of Réserve de biodiversité de la Moraine-d'Harricana are defined in the technical description and the survey map prepared by land surveyor Pierre Hains with the following minutes 11503 (February 8, 2018) and filed in the surveying archives of the Surveyor General of Québec (Greffé de l'arpenteur général du Québec), Ministère de l'Énergie et des Ressources naturelles, under document number 536700.

### 1.3 Ecological portrait

Réserve de biodiversité de la Moraine-d'Harricana is part of the Abitibi lowlands natural province. It protects representative ecosystems in the Lac Témiscamingue lowlands and Abitibi plain natural regions, and in particular protects representative natural environments in the physiographic complexes of the Lac Preissac plain, Lac Parent plain and Réservoir Decelles mounds. These environments are characterized by the elements described below, of which those of the greatest ecological interest are mapped in Appendix 2 (MDDELCC, 2014a).

#### 1.3.1 Representative elements

**Geology:** The biodiversity reserve is in Superior geological province, where the foundation rock is Archean (over 2.5 billion years old). The

substratum is primarily intrusive igneous rock, i.e. granites. The eastern part of the reserve is underlain by metasedimentary rock in the form of paragneiss, with striations caused by intrusions of ultramafic volcanic rocks.

**Geomorphology:** When the Laurentide ice sheet melted, around 8500 years ago, it covered the bedrock with a thick layer of poorly drained glaciolacustrine sediments (silt and clay). Erosion by the waves of glacial lake Barlow-Ojibway stripped the silt from the tops of the highest mounds (Veillette, 2000).

Today the landscape is a plain punctuated with mounds and residual hillocks, gently sloping to the north.

In the portion of this glaciolacustrine plain that is within the reserve, the relief is less flat, with mounds and hillocks of till modulating the composition of ecosystems. The presence of the Harricana moraine adds yet another dimension to the area. The process by which it was formed left behind more diversified materials (morainic till), leading to the presence of sand dunes and complexes of dunes and bogs. The result is a heterogeneous relief with the elevation ranging from 293 to 430 metres (average 325 metres).

Besides the imposing moraine, there are several eskers to the north of Lac Lemoine, all with a north-south orientation.

The landforms and surface deposits of the biodiversity reserve reveal a considerable variety of natural environments. These can be grouped into five ecological units, as follows.

With its complex of mounds, low hills of till, and rocky outcrops, the most western unit is

representative of the physiographic complex of the Réservoir Decelles mounds.

The second unit is the Harricana moraine. It takes the form of a long ridge running in a northeast-southwest direction. This ecological unit has a varied landscape, with a dune plateau southeast of the moraine, a complex of dunes and bogs even further southeast, and sandy glaciolacustrine deposits at the bottom of slopes.

Southeast of the moraine, the third ecological unit is a glaciolacustrine plain of clay and silt, out of which arise numerous mounds of till.

North of Lac Lemoine, the biodiversity reserve includes a broad glaciolacustrine plain of silty clay. Occasional hillocks and knolls of till are scattered among the numerous hollows, which are filled with organic deposits and (in wet areas) bogs and swamps.

Lastly, due to its large area and highly developed shoreline in places, Lac Lemoine constitutes an ecological unit in itself.

**Hydrography:** The biodiversity reserve straddles the line separating two major watersheds, that of Rivière des Outaouais (southwestern part) and that of Rivière Harricana (northeastern part), where Lac Lemoine is one of the river's headwater lakes.

The reserve contains a total of 225 lakes, thirteen of which have names. With an area of 23 km<sup>2</sup>, Lac Lemoine is the largest. It is about 30 km long, with a maximum width of 2.6 km and a depth of up to 52 metres. Other lakes in the reserve are equally worthy of note, including Lac Godard, with an area of 2 km<sup>2</sup>, and several smaller bodies of water, such as lakes Strong, Beaubassin, Randall, Riley, Kâmânatak, Dar, Bouleau,

Desroberts and Dominique, each having an area of 0.1 km<sup>2</sup> to 0.4 km<sup>2</sup>. The total area of the water bodies and watercourses in the reserve is about 30 km<sup>2</sup>, or 8% of the territory.

**Climate:** Most of the territory of Réserve de biodiversité de la Moraine-d'Harricana is subject to a mild continental subarctic climate, subhumid with a long growing season. Average temperatures range from 1.9°C to 4.5°C. The average annual precipitation ranges from 800 mm to 1359 mm, while the average growing season is from 180 to 209 days. However, some of the more northern parts of the reserve can experience a subhumid subarctic climate with a medium growing season. In these areas, temperatures are somewhat lower (from -1.5°C to 1.9°C) and the growing season is reduced to 150-179 days.

Reflecting this climatic situation, Réserve de biodiversité de la Moraine-d'Harricana includes two bioclimatic domains. Most of it is in the balsam fir-white birch domain, while the western extremity is in the balsam fir-yellow birch domain.

The balsam fir-yellow birch bioclimatic domain extends in a band from western to central Québec, between 47° and 48° north latitude. Mesic sites are occupied by mixed stands of yellow birch and conifers, including balsam fir, white spruce and eastern white cedar. Sugar maples are at the northern limit of their range here. Forest fires and epidemics of spruce budworm are the two main factors of forest dynamics. The abundance of yellow birch and pines diminishes from west to east, resulting in two subdomains. The reserve is in the western one, where yellow birch-balsam fir stands are omnipresent on mesic sites.

The balsam fir-white birch bioclimatic domain is dominated by stands of fir and white spruce. Both are mixed with white birch on mesic sites. On less favourable sites, black spruce, jack pine and tamarack are often accompanied by white birch or trembling aspen. Yellow birch and red maple only grow in the southern part of this bioclimatic domain, and that is the case in the reserve. Spruce budworm is the major factor of forest dynamics, since balsam fir is abundant. Nevertheless, forest fires also play an important role. The fire cycle is shorter in the western bioclimatic subdomain, where the reserve is located, which explains the abundance of hardwood stands and mixed stands of shade-intolerant species (trembling aspen, white birch and jack pine).

**Forests:** Forest occupies about 255 km<sup>2</sup> of the reserve, representing some 70% of the total or 76% of the land area. The difference is due to the abundance of wetlands, which occupy about 30% of the reserve's land area and for the most part have no forest cover. The latter consists of 12% deciduous forests, 35% mixed forests and 54% conifer forests.

Depending on the topography and surface deposits, the vegetation can vary, but is primarily composed of various sorts of balsam fir stands (accompanied variously by white birch, black spruce, black spruce and peat moss, or red maple) and black spruce stands (accompanied by peat moss or by mosses and heaths). However, the low hills and mounds in the westernmost part have environments favourable to the development of yellow birch-balsam fir stands.

Due to the extensive logging carried on in the past, the actual vegetation present is somewhat different. Fir stands are nearly absent, but black spruce stands are very common. The most

recently logged areas are occupied by shade-intolerant deciduous trees (white birch and trembling aspen). Areas of very sandy soil are often forested with jack pine. Some of the mounds or low hills have stands of yellow birch and red maple. These habitats are the only ones with mature forests, since they were passed over by the loggers.

The territory of Réserve de biodiversité de la Moraine-d'Harricana is characterized by woodlands of medium age (40-80 years), young stands (0-40 years) and by ever older forests (110 years and up), depending on when the last logging was done.

Despite the great heterogeneity of the reserve's geomorphology, the forest cover (both potential and real) is somewhat more homogeneous. However, given the variety of physical environments present, there should be greater diversity in the shrubby and herbaceous species, as well as in the wildlife.

**Flora:** No comprehensive plant inventory has been done on the territory of Réserve de biodiversité de la Moraine-d'Harricana. However, Baldwin (1958) and Rousseau (1974) studied the vascular flora of the clay belt of northeastern Ontario and northwestern Québec, where the reserve is located. Principally characterized by boreal vegetation, the clay belt covers most of Abitibi and northern Témiscamingue. The few inventories done after Baldwin's study indicate that the region is home to about 1000 vascular species, 125 species of lichen, 30 species of liverwort, and 159 species of moss. However, no inventory has been done of the region's mushrooms and algae.

**Fauna:** No inventory has been done of wildlife in the reserve. However, species mentioned in the literature as being characteristic of balsam fir-yellow birch and balsam fir-white birch forests include the following: snowshoe hare, black bear, red squirrel, Canadian beaver, muskrat, American porcupine, red fox, patched fox, American marten, weasel, fisher, American mink, coyote, wolf, river otter, Canadian lynx, moose, white-tailed deer, and seven species of bat, three of which are endangered. According to the literature, some fifty species of mammal could inhabit central Abitibi-Témiscamingue, and thus the territory of the reserve (MDDEP, 2007).

Bird surveys conducted by the Société du loisir ornithologique de l'Abitibi on the territory of the proposed biodiversity reserves of Forêt Piché-Lemoine and Réservoir Decelles revealed the presence of 131 species in Réserve de biodiversité projetée de la forêt Piché-Lemoine, most of them nesting and/or migratory, and 47 species (most also nesting and/or migratory) in Réserve de biodiversité projetée du Réservoir Decelles (Imbeau, 2004a and 2004b).

No fish survey has been done on the territory of the reserve. However, the species most prized for sport fishing are walleye, northern pike, smallmouth bass, brook trout and sauger (MDDEP, 2007). Also, according to old surveys from the 1970s on fish species in Rivière Piché and Lac Lemoine, conducted by the Ministère du Tourisme, de la Chasse et de la Pêche, the following fish were often caught: goldeye, brown bullhead, whitefish, northern pike, white sucker, golden shiner, emerald shiner, spottail shiner, burbot, trout-perch, logperch, yellow perch, walleye, sauger and slimy sculpin (MRNF, 2007).

It should also be noted that there is a walleye spawning bed in Ruisseau Desmarais, which feeds into Lac Lemoine, and another spawning bed in Rivière Piché (MRNF, 2007).

Among the herpetofauna (which include snakes, turtles, amphibians and salamanders), 22 species have been observed in Abitibi-Témiscamingue. Some could inhabit the lakes and watercourses of Réserve de biodiversité de la Moraine-d'Harricana (MRNF, 2007).

### 1.3.2 Outstanding elements

According to the Centre de données sur le patrimoine naturel du Québec (2014), no plant species that is threatened or vulnerable or likely to be so designated has been observed in the reserve. However, two colonies of Blind's bryum, a moss likely to be designated threatened or vulnerable, have been found on the northwestern periphery of the reserve.

Again according to the CDPNQ (2014), the southern bog lemming, which is also likely to be designated threatened or vulnerable, frequents the southwestern portion of the reserve. One occurrence of wood turtle, a vulnerable species, has been found northeast of the reserve, while the bald eagle, also a vulnerable species, nests at several places just outside the reserve. These species could frequent the reserve to feed or reproduce.

Woodland caribou, another vulnerable species, have also been observed in the section of the reserve that was Réserve de biodiversité projetée du Réservoir Decelles. This population appears to be in difficulty due to changes to its habitat, predation and hunting. Protection of the forest massif of Réservoir Decelles could help protect this species (MDDEP, 2008a).

The large number of bird species that frequent the territory of the reserve at some point in their life cycle should also be noted.

In the central part of the reserve there are four biological refuges listed in the *Registre des aires protégées du Québec*. Additionally, there are several legally protected areas near or just outside the reserve. They include a muskrat habitat and three biological refuges to the west of the reserve, another three just south of it, *Réserve écologique des Dunes-de-la-Moraine-d'Harricana* (adjacent to the central part of the biodiversity reserve), and another biological refuge to the west of the central part. Also worth noting is that in the portion south of Lac Lemoine, the reserve surrounds an experimental forest.

As mentioned previously, Ruisseau Desmarais, one of the southern tributaries of Lac Lemoine and Rivière Piché, is home to two walleye spawning grounds.

As for forests, there are mature stands of yellow birch-balsam fir at the northeastern end of the reserve, near the mouth of Lac Lemoine and Rivière Piché. At the northern limit of their range, they have been assessed and found to have the characteristics of exceptional (indeed rare) forest ecosystems. However, the *Ministère des Forêts, de la Faune et des Parcs* has not yet accorded them exceptional forest ecosystem status.

With regard to landforms, the portion of the moraine between Lac Lemoine and the Rapide-7 dam features numerous kettles and kettle lakes. Some of the moraine's kettles are outside the boundaries of the reserve. The diversity found in the approximately 100 km<sup>2</sup> of wetlands is also an element of undeniable ecological interest. These habitats could harbour a wealth of plant species.

The stable aeolian dunes are also of great ecological interest. This geomorphological phenomenon is rare in the Abitibi lowlands natural province, but covers 28 km<sup>2</sup> of the biodiversity reserve. It could be home to interesting or even rare plant species. Also worth noting is that the eskers and certain parts of the moraine contain groundwater of excellent quality.

It should be noted that the MRC de La Vallée-de-l'Or contains numerous archeological sites revealing the history of the Algonquin occupation of the territory. Some sites even suggest an Amerindian presence during the "archaic" prehistorical cultural period, from 5000 to 1000 years B.C. (MRC de La Vallée-de-l'Or, 2005). The presence of such sites in *Réserve de biodiversité de la Moraine-d'Harricana* remains to be confirmed. The archeological potential of the area could be significant, since the reserve is at the head of the Rivière Harricana and could have been part of an ancient corridor for Aboriginal migrations. Archeological digs should be done to confirm the presence of such sites, since there are three just northeast of the reserve near Val-d'Or.

#### **1.4 Land occupation and uses**

The principal occupations and uses exercised in *Réserve de biodiversité de la Moraine-d'Harricana* are shown in Appendix 3.

The biodiversity reserve is in part located on Category III lands, under the James Bay and Northern Québec Agreement (JBNQA), signed in 1975, and under the *Act Respecting the Land Regime in the James Bay and New Québec Territories* (chapter R-13.1) adopted in 1978. The reserve is also part of the territory covered by the hunting, fishing and trapping regime applicable



under chapter 24 of the JBNQA (*Act Respecting Hunting and Fishing Rights in the James Bay and New Québec Territories*, chapter D-13.1).

There are 95 registered land rights on the territory of the reserve, including 20 resort leases and 75 leases for temporary shelters (hunting shelters). It should be kept in mind however that the boundaries of the reserve exclude certain developed areas. The shores of Lac Lemoine are particularly developed. Additionally, there are vacation areas on private lands that could perhaps be consolidated, and three privately held lots bordering Réservoir Decelles near the Rapide-7 dam. These properties belong to outfitters.

Apart from the northeastern and western extremities, which overlie fur-bearing animal management units 03-B and 04, the biodiversity reserve primarily overlies the Grand Lac Victoria beaver reserve (fur-bearing animal management unit 07), where the Algonquin communities have particular hunting and fur-bearing animal trapping rights. The MFFP has no data on wildlife harvesting by these communities. The biodiversity reserve also overlies four trapping grounds. In the trapping seasons from 2009-2010 to 2014-2015, trappers harvested the following species: beaver, otter, Canadian lynx, fisher, American marten, striped skunk, American mink, weasels (all species), muskrat, red fox, raccoon and squirrel. According to the MRNF (2006a), although a few Algonquin communities live near and use the biodiversity reserve (at Lac-Simon, Kitcisakik and Long Point), no data was available on their subsistence wildlife harvesting or traditional activities. However, the MRNF (2006b) indicates that Aboriginal harvesting seems to be no higher than elsewhere in the Abitibi region. Outside of the Grand Lac Victoria beaver reserve,

the territory of the reserve overlaps four trapping grounds. A single trapping camp has been built on the protected territory, on Pointe à Boisvert in Lac Lemoine.

The entire territory of the reserve is in hunting zone 13, where sport hunting is practised. Data on the annual harvest of large game only concerns moose and black bear. The MRNF has examined hunting pressure on the territory of the reserve between 2011 and 2014. Over this period, 62 moose and 76 black bears were killed in the reserve. This gives an annual average of 16 moose and 19 black bears, or 0.43 moose and 0.53 black bear per 10km<sup>2</sup> per year. Compared to hunting zone 13 as a whole (0.5 moose and 0.19 black bears per 10 km<sup>2</sup>), the MRNF indicates that within the reserve, hunting pressure on moose was about average, while that on black bear was considerably higher than average (2015).

Réserve de biodiversité de la Moraine-d'Harricana is located in fishing zone 13 west, where the fishing of bass, pike, walleye, sturgeon, brook trout, lake trout and yellow perch is controlled (MDDEP, 2007). The MRNF has no data on sport fishing on the territory of the reserve (MRNF, 2006a, 2006b). Since 2011, for most of the lakes in fishing zone 13 including Lac Lemoine, there has been a minimum catch size of 32 cm for walleye. However, as of spring 2016 the new management plan for walleye changes the limit to a range of 32-47 cm. This means that fishers may only keep walleye measuring 32 to 47 cm.

In 2008, testing for toxic substances in the flesh of predatory fish in Réservoir Decelles was conducted by a team from the MELCC. The results revealed that mercury levels were such that consumption of walleye and sauger should

be limited to no more than four meals per month (MDDELCC, 2014b). Furthermore, according to the Guide to eating Québec freshwater sport fish (MDDELCC, 2014b), monthly consumption should not exceed two meals for walleye, four meals for northern pike, and eight meals for goldeye and white sucker caught in Lac Lemoine.

Though the Aboriginal communities at Lac-Simon and Kitcisakik use the territory of the reserve for their traditional subsistence activities, in 2006 the MRNF had no data on their wildlife harvesting. However, it does not seem to be any higher in Réserve de biodiversité de la Moraine-d'Harricana than elsewhere in Abitibi (MRNF, 2006a, 2006b; MDDEP, 2007). These communities primarily hunt moose, black bear, small game, Canada goose, ducks and partridge. The main species of fish they catch are walleye, pike, brook trout, lake trout and sturgeon (MDDEP, 2007). It should also be noted that the Algonquin communities probably gather wild strawberries, blueberries, raspberries and various medicinal plants in the biodiversity reserve. Algonquin hunters also use birch bark to make horns for calling moose (MDDEP, 2007).

Lac Lemoine attracts a great many users, including cottagers, boaters, hunters, fishers and residents. The proximity of Val-d'Or has much to do with the intensity of recreational activity here. In summer, water quality is monitored by citizen partners in the MELCC's Volunteer Lake Monitoring Program. The results for conventional parameters (such as total trace phosphorus and chlorophyll  $\alpha$ ), from tests conducted in summer 2009, suggest that water quality in Lac Lemoine can be problematic. The data indicate that the lake is in a mesotrophic state, with high concentrations of total trace phosphorus and chlorophyll. In other words, Lac Lemoine is at an

intermediate stage of eutrophication. A thorough assessment of its trophic status is needed, and should include littoral components like aquatic plants, periphyton and sediments, as well as the impact of human occupation and the presence of septic tanks. To slow down the process of degradation and aging, the MELCC recommends that measures be taken to limit nutrient inputs from human activities. Such measures will be essential to preserve Lac Lemoine and the many ways in which it is used and enjoyed (MDDEP, 2010).

Also worth mentioning is the campground at the confluence of Rivière Thompson and Lac Lemoine, near the northeastern boundary of the reserve, and the Piché-Lemoine forest, inside the reserve, where recreational activities are practised.

In the northwestern part of the reserve there is a canoe-kayak route. Starting at Lac Clair, it passes through lakes Mourier and Lemoine, then through Rivière Thompson and Lac De Montigny, before continuing north beyond the reserve. As is often the case with canoe-kayak routes, temporary and unofficial backcountry camping sites could appear on the shores of these bodies of water.

Additionally, the reserve is crossed at various places by snowmobile trails, both marked and unmarked. Trails for four-wheeling, cross-country skiing, hiking and bicycling cross the northeastern part of the reserve.

In two places, Réserve de biodiversité de la Moraine-d'Harricana is split by hydroelectric facilities. The southwestern portion is split by the Rapide-7 plant (installed power 48 MW), whose dam has a reservoir of over 230 km<sup>2</sup> and a waterfall over 20 metres high. The western

section is crossed by a power transmission line whose right of way (36.6 metres wide) is excluded from the biodiversity reserve (MDDEP, 2007).

As for mining activities, there are mining claims at the northern boundary of the reserve, in particular at the northern extremity of the esker to the east of Lac Lemoine. All around the former Réserve de biodiversité projetée de la forêt Piché-Lemoine, new mining claims have been granted in the years since it was set aside (BAPE, 2007). There are also a few active claims near the edges of the former Réserve de biodiversité projetée du Réservoir Decelles. In addition, a tailings facility belonging to the GoldEx division of Agnico Eagle Mines Limited was built in 2007 between the aforementioned esker and the outlet of Lac Lemoine. It is used in emergencies and when it is impossible to use the company's main tailings facility (BAPE, 2007; MDDEP, 2007). According to the MDDEP (2007), there are no active sand or gravel extraction sites within the boundaries of the reserve.

The landscape of Réserve de biodiversité de la Moraine-d'Harricana is fragmented by cutblocks (logged sections) and numerous forest roads. Some areas however are less used and/or accessed, especially to the north of Lac Lemoine and in the area of dunes and bogs to the east of Réserve écologique des Dunes-de-la-Moraine-d'Harricana.

Upgrading may be done on the forest roads shown in Appendix 4.

## 2. Conservation and development of Réserve de biodiversité de la Moraine-d'Harricana

This section presents conservation and development guidelines, together with objectives specific to Réserve de biodiversité de la Moraine-d'Harricana.

### 2.1 Protection of biodiversity

To maintain the viability of ecological processes, management of the reserve should give priority to protecting the ecosystems present and the species that depend on them. This includes allowing ecosystems that have been disturbed by recent logging or any other disturbance, especially anthropic, to recover their dynamics and natural characteristics.

Aside from the resort areas on the shores of Lac Lemoine, which are excluded from the reserve, existing buildings are relatively dispersed across the territory. The same applies to places where recreational and wildlife activities are practised. These activities should be managed to have as little impact as possible and no long-term impact on biodiversity.

#### Specific objectives:

- ***Promote the resilience of disturbed forest ecosystems***

About 40% of the reserve's forested area bears the traces of past logging. The scars left on the land where logging was done, in the ten to fifteen years before the reserve was created, are visible on the ground and in satellite images. Other portions of the reserve were also logged, but more in the past. These areas are already repopulated with forest communities of medium age.

The disturbed forest ecosystems should thus be able to recover their natural characteristics. The absence of any form of logging will facilitate that resilience. These environments have good productivity and will be able to re-establish themselves over the next few decades, with no need for active management measures such as planting and restoration.

▪ ***Ensure the protection of rare forests***

The forest ecosystems on till mounds and hillocks, whether in the north, south or west, are on the whole the only ones that were left essentially undisturbed. These ecosystems are mostly composed of mature to old forests. Deciduous stands such as yellow birch-sugar maple and maple-yellow birch are of particular ecological interest. It is rare to find such preserved forest ecosystems at this latitude, where they are at the northern limit of their range. According to a characterization done by the exceptional forest ecosystem team of the Ministère des Forêts, de la Faune et des Parcs, some of the yellow birch stands northeast of Lac Lemoine have the characteristics of exceptional forest ecosystems of the rare forest type. Other mature and old forests of yellow birch and sugar maple that have not been characterized could have the same qualities. Any additional fragmentation of the forest cover must therefore be avoided, except for unobtrusive development (such as hiking trails) to facilitate enjoyment of these natural environments.

▪ ***Ensure the preservation of elements of geomorphological interest***

Particular attention should be given to the Harricana moraine, its kettles, dune ecosystems and the complex of dunes and bogs.

The eskers should also be protected from any form of development that could affect their groundwater.

Lastly, there is a great wealth and diversity of wetlands in the reserve. Any development in them should be avoided.

**2.2 Knowledge acquisition and environmental monitoring**

Knowledge acquisition, besides being crucial to the achievement of objectives specific to natural heritage protection, will make it possible to monitor the natural environment. The knowledge acquired could also be used in developing activities for nature discovery, education and public awareness. It will facilitate the analysis of development projects, and ensure that management partners have a common understanding of the issues.

Ecological knowledge, especially about the support capacity of natural environments, and about the impact of recreational and tourist activities on ecosystems, must also be developed. This will be done to properly assess the wealth of the reserve's resources, to obtain representative data, and to develop the tools needed for good management, to ensure that the biodiversity specific to the reserve is conserved.

Specific objectives:

▪ ***Increase knowledge about the geomorphological and forest elements of interest***

The MELCC will target certain needs related to knowledge building on biodiversity. For example, a plant inventory must be done. A list of fish species in the lakes, and of the reserve's terrestrial wildlife, could be created with the help of regional partners in the wildlife field. More knowledge is needed about the various species

(flora and fauna) associated with the ecosystems of old noble hardwood forests, such as the stands of sugar maple in the reserve. With regard to physical characteristics, more knowledge is needed about the plant species associated with the dune ecosystems, wetlands, moraine and eskers on the territory. Other surveys or scientific research, whether on existing or anticipated ecological problems, could be conducted later.

- ***Monitor anthropic impacts on Lac Lemoine***

The high occupation level, usage and shoreline development projects at Lac Lemoine combine to create a need for better understanding of their current and anticipated impacts on the lake. It will also be important to monitor the lake's water quality, and its aquatic and riparian ecosystems.

### **2.3 Integrated and participative management**

In light of the reserve's large size and the heterogeneity of its natural environments, as well as the variety of modes of occupation and use that are present, the management approach adopted should be based on stakeholder participation. This will facilitate the harmonious management of recreational activities while protecting the natural heritage. The concentration of cottagers on the shores of Lac Lemoine, not far from downtown Val-d'Or, adds a significant social dimension to the area. This dimension should be taken into consideration in managing the biodiversity reserve.

Specific objectives:

- ***Establish participative and collaborative management***

Réserve de biodiversité de la Moraine-d'Harricana extends about 65 km over its length. Its natural and human contexts are highly varied.

For this reason, the MELCC should engage the participation of the various users and holders of land rights (outfitter with non-exclusive rights, cottagers, hunters and trappers), the cities of Rouyn-Noranda and Val-d'Or, and the municipality of Rivière-Héva, in managing the reserve. The Algonquin communities will also be important partners in managing the reserve, since they practise traditional activities there, particularly in the beaver reserve.

The MELCC will encourage the creation of a conservation committee where stakeholders can discuss protection issues and the measures to take in response. An action plan will be prepared by the MELCC in collaboration with management partners. Among other things, the plan will determine actions to be taken, the means advocated, actors chosen to perform those actions, performance horizons, and a mechanism for evaluating results.

- ***Accord particular attention to the management of Lac Lemoine***

In view of the significant human presence at Lac Lemoine, its shores and immediate environs, a component specifically concerned with that part of the reserve should be incorporated in the participative management process.

### **3. Zoning**

Réserve de biodiversité de la Moraine-d'Harricana covers an area that is highly diverse in terms of natural habitats, modes of occupation and use, and the general state of the environment. Management of the territory should take into account the ease with which certain parts can be accessed, especially from the northeast. Based on the ecosystems present, the current state of the natural environment, the reserve's protection and management objectives, and to a lesser extent considerations of land use

and occupation, the reserve has been divided into five zones. All five have a protection level and the same activity framework. However, protection measures and development possibilities will reflect the specific features of each zone. All five have elements of ecological interest (or that must be preserved) that are specific to them, such as old hardwood forests, a variety of wetlands, kettles or sand dunes.

A map of the zones is provided in Appendix 4. This zoning, and the particular characteristics of each zone, will be taken into account in the MELCC's management of the reserve and when evaluating authorization requests for activities and improvements.

The five zones are:

- Zone I: Low hills of till
- Zone II: Moraine d'Harricana
- Zone III: Silty clay plain with mounds
- Zone IV: Lac Lemoine
- Zone V: Wet clay plain

#### **Zone I: Low hills of till**

This zone is part of a larger complex of low hills in the area between Lac Simard and Réservoir Decelles. Zone I covers 46 km<sup>2</sup>, or about 13% of the territory of the reserve.

Zone I can be considered a "natural" zone despite its visible human footprint, particularly in the northern part where logging was done in the 1990s. The portion south of the power transmission line is characterized by forests of medium age or older. Disturbed sections are mostly the result of burning in the late 1960s or early 1970s. Many of the low hills have very thin soil and steep slopes. The sizeable mound to the east of the zone, and certain slopes, favour the presence of yellow birch-balsam fir stands. The rest of the low hills, and the silty clay lowlands

south of Lac Godard, have ecosystems favourable to stands of balsam fir (with black spruce or white birch) and stands of black spruce (with peat moss, mosses or heaths). The more recently logged areas have been colonized by stands of shade-intolerant deciduous trees, while black spruce stands and jack pine stands occupy most of the rest of the zone. Also of interest is the presence of a stand of red maples along the southeast boundary of Zone I. This zone is the one with the fewest wetlands.

Though the forest landscape of Zone I is not entirely natural, the level of occupation is relatively low. Nonetheless, the fragmentation rate is high. There is a periodic but significant human presence (mostly for hunting). The network of trails and forest roads covers 110 linear km, but seems to be limited to access roads to buildings. There are just ten buildings in the zone, all hunting camps. The occupation rate is thus fairly low, at one building per 4.6 km<sup>2</sup>. The fragmentation index for Zone I is 2.4 km per km<sup>2</sup>, which is considered high (Quigley *et al.*, 2001).

The conservation objective for this zone to improve its natural character where logging has been done, and to reduce the fragmentation rate by limiting the number of roads and trails to those that are essential. Active management measures such as planting or restoration will not be needed.

#### **Zone II: Moraine d'Harricana**

Zone II is the largest zone in the biodiversity reserve. It covers 158 km<sup>2</sup>, or about 43% of the area of the reserve, and offers a great variety of ecosystems and landscapes. Zone II encompasses the portion of the Harricana moraine that crosses the reserve, along with all the natural environments associated with it, such as the complex of dunes and bogs. The map in Appendix 2 illustrates the large number of elements of ecological interest in this zone.

That variety is not reflected in the zone's forest ecosystems. On the contrary, the whole of Zone II is favourable to the development of just two types of woodland: on the moraine, to stands of balsam fir (with black spruce or white birch), and on the complex of dunes and bogs south of the moraine, to stands of black spruce (with mosses, heaths or peat moss). A few isolated ecosystems are favourable to balsam fir-red maple stands.

Nonetheless, the situation observed on the ground is quite different from what would be expected. The landscape is dominated by black spruce stands, a few stands of jack pine and white birch, and sections that have been logged. The central portions west of the Hydro-Québec property are dominated by forests of medium age, while young regenerating forests dominate the area southeast of Lac Lemoine. As with Zone I, mature and old forests are scattered and very rare.

Human presence and the traces of human use vary in density and intensity in different parts of the zone. There are forty buildings, including six cottage leases and over thirty hunting camps. The occupation rate is about one building per 4 km<sup>2</sup>, which is relatively low. This is because the boundaries of the reserve were drawn to exclude the resort areas concentrated around Lac Lemoine, which are encompassed by the reserve without being part of it. This encompassed human presence will nonetheless have to be taken into account in the management of the reserve. The network of forest roads and trails extends over about 415 linear km, which according to Quigley *et al.* (2001) represents a high fragmentation index. The density of roads is particularly high in the area where there are kettles.

No active management measures are anticipated in the short term. However, due to the high fragmentation rate and the numerous young stands repopulating logged areas, the

conservation objective for Zone II is to promote, as effectively as possible, a return to a high naturalness index, i.e. to natural landscapes. With regard to fragmentation, the roads and trails should be examined to determine which ones are essential for building access. Those that are not should be closed and renaturalized. Finally, some parts of Zone II have been planted with jack pine. Consideration should be given to monitoring the evolution of these ecosystems of non-natural origin.

Due to the marks it bears of human activity and its high fragmentation index, Zone II resembles a "developed natural" zone. However, the level of occupation is low and in significant portions the landscape is natural, especially where there is a concentration of wetlands. Management of this zone should therefore allow it to recover its natural character over the long term.

### **Zone III: Silty clay plain with mounds**

This zone is formed of an array of mounds on a plain of glaciolacustrine origin with deposits of clay and silt. It covers 64 km<sup>2</sup>, or about 18% of the territory of the reserve. The mounds offer an environment favourable to stands of balsam fir (with black spruce or white birch), while the silty clay lowlands favour stands of black spruce (with peat moss, mosses or heaths). A few portions of Zone III were clearcut in the 1980s. However, the main human footprint consists of sections that were logged with protection for regeneration in 2008-2009. Since the mounds were spared, today they are covered with white birch stands, a few yellow birch stands and even a stand of red maple. Moreover, despite the several cases of human disturbance, Zone III has the largest number of mature and old forests, which cover the mounds and hillocks of till.

There are thirty land rights in Zone III, including eight cottage leases on the shores of Réservoir Decelles, the remaining twenty-two being for temporary shelters. The level of occupation is high in this zone, at one building per 2 km<sup>2</sup>. There is little overland access to Zone III, but it is easily accessed by boat through Réservoir Decelles. The fragmentation index is high (Quigley *et al.* 2001). There are about 109 linear km of forest roads and trails, representing a fragmentation index of 1.7 km per km<sup>2</sup>. Many of the roads were built in preparation for the logging operations of 2008-2009. Their footprint will remain for a few more years.

The main conservation objective for this zone is to maintain the characteristics of mature and old forests and to promote the resilience of forests that were recently logged. Any new fragmentation must be limited, except for efforts to enhance the area's educational or ecotourism dimensions (e.g. hiking trails, shelters, interpretive panels). In the medium term, only roads to existing buildings should be maintained.

Zone III can be considered a "natural" zone. As such, it will be managed with a view toward increasing its naturalness, notably with respect to any new development or fragmentation, while pursuing objectives related to ecosystem resilience.

#### **Zone IV: Lac Lemoine**

Lac Lemoine constitutes a distinct zone on its own. With its proximity to downtown Val-d'Or, intensive use of the lake and the development of its shores, Lac Lemoine is under greater human pressure than the rest of the reserve. There are a great many cottages along its shores. Although most are excluded from the boundaries of the reserve, Zone IV must be managed as if that human presence were part of the reserve. The concentration of buildings along the shore could,

in places, have significant impacts on the lake, its water quality and the quality of its aquatic ecosystems.

Zone IV can be considered a "humanized" zone. The cottages and residences around Lac Lemoine are estimated at over 200, yet Zone IV only covers about 23 km<sup>2</sup>, for some 50 km of shoreline. The average occupation density is one building every 250 metres, which is very high. Not to mention the considerable human presence upstream and downstream from Lac Lemoine, along the Thompson and Piché rivers and at Lac Mourier. In short, the balance between this human presence and the quality of ecosystems is a matter of serious concern. Residents and cottagers could be important partners in protecting the lake effectively.

#### **Zone V: Wet clay plain**

The area north of Lac Lemoine is different from the rest of the reserve, primarily because of its relatively flat topography. Representative of the great silty-clay glaciolacustrine plain typical of Abitibi, the zone has numerous wetlands. Some hillocks of till and a few small eskers add diversity to the plain's homogeneity.

Zone V also offers an environment favourable to the development of stands of balsam fir (accompanied variously by white birch, black spruce, black spruce-peat moss), and stands of black spruce (accompanied by peat moss, mosses or heaths). The peculiarity of Zone V is that it has a few areas favourable to the establishment of balsam fir-yellow birch stands. This is where the reserve's rare stands of yellow birch are found. Apart from them, most of the present vegetation consists of young stands of conifers with regenerating hardwoods. This is why the few stands of black spruce are surrounded by stands of shade-intolerant deciduous trees.



The flat relief and its few depressions, combined with poor drainage, have resulted in the presence of a good number of wetlands. These include large ombrotrophic and minerotrophic bogs, as well as numerous shrubby and coniferous swamps.

Human presence and landscape fragmentation are primarily of note in the northern part of Zone V. There are numerous four-wheel, snowmobile and bicycle trails, and old access roads, entering the reserve from the north. Many of the roads are no longer passable and soon will no longer be visible. Nonetheless, the current fragmentation index for Zone V is 1.8 km per km<sup>2</sup>, or 132 linear km of forest roads and trails for an area of 73 km<sup>2</sup>. According to Quigley *et al.* (2001), this a high rate of fragmentation.

There are 24 buildings in the zone, including 6 cottages and 18 hunting camps. The occupation rate is one building per 3 km<sup>2</sup>, which is relatively low.

The conservation objective for this “natural” zone will be to reduce fragmentation by only maintaining roads and trails that currently provide access to buildings. However, educational/recreational trails for non-motorized outings could be developed, in keeping with the recreational vocation of Forêt Piché-Lemoine. Protection of the rare stands of yellow birch is of course among the specific conservation objectives of this zone.

#### **4. Activity framework applicable to Réserve de biodiversité de la Moraine-d’Harricana**

The purpose of the reserve is to protect natural environments and their components. For this reason, activities that could have a significant impact on ecosystems and biodiversity, especially of an industrial nature, are prohibited.

Less harmful activities and occupations, such as those involving recreation, wildlife, ecotourism or education, are however permitted in this type of protected area.

In sum, the biodiversity reserve should be considered as a territory dedicated to protecting the natural environment, to nature discovery and to recreation.

#### **4.1 Activity framework established by the Natural Heritage Conservation Act**

Activities carried out within the biodiversity reserve are primarily governed by the provisions of the *Natural Heritage Conservation Act* (chapter C-61.01).

Under the Act, the activities prohibited in an area with the status of biodiversity reserve are primarily the following:

- mining and gas or oil extraction;
- forest management within the meaning of section 4 of the *Sustainable Forest Development Act* (chapter A-18.1);
- the exploitation of hydraulic resources and any production of energy on a commercial or industrial basis.

Though fundamental to protecting the territory and its ecosystems, the above prohibitions do not cover all of the standards considered desirable to ensure the proper management of the reserve and the conservation of its natural environment. The *Natural Heritage Conservation Act* allows the Regulation to detail the legal framework applicable on the territory of a biodiversity reserve.

#### 4.2 Activity framework established by the Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana

The provisions contained in **Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana** set out additional prohibitions beyond those already stipulated in the *Natural Heritage Conservation Act* (chapter C-61.01). They also provide a framework for certain permitted activities, to ensure the protection of the natural environment in accordance with the principles of conservation and other management objectives of the reserve. Certain activities are therefore subject to prior authorization by the Minister.

The measures presented in Regulation concern new interventions in particular, and generally do not affect activities that are already being practised or facilities that are already present. Many existing uses are thus preserved.

In listing the activities requiring authorization, Regulation does not identify which ones would be considered incompatible with the vocation of the reserve and could therefore be refused authorization. Basic information about the compatibility or incompatibility of each type of activity is provided in the document *Activity Framework for Biodiversity Reserves and Aquatic Reserves*, which available on the website of the MELCC at

[http://www.mddelcc.gouv.qc.ca/biodiversite/aires\\_protegees/regime-activites/regime-activite-reserve-bio-aqua-en.pdf](http://www.mddelcc.gouv.qc.ca/biodiversite/aires_protegees/regime-activites/regime-activite-reserve-bio-aqua-en.pdf).

Note that certain activities are exempted from the requirement to obtain authorization. These exemptions are also presented in Regulation.

#### 5. Activities governed by other laws

Certain activities that could potentially be practised in the biodiversity reserve are also

governed by other applicable legislative and regulatory provisions, and some require a permit or authorization or the payment of certain fees. Certain activities could be prohibited or limited under other laws or regulations applicable on the territory of the reserve.

In the territory of Réserve de biodiversité de la Moraine-d'Harricana, a particular legal framework may govern permitted activities under the following categories:

- **Protection of the environment:** measures stipulated by the *Environment Quality Act* (chapter Q-2) and its regulations;
- **Archeological research and discoveries:** measures stipulated by the *Cultural Heritage Act* (chapter P-9.002);
- **Exploitation and conservation of wildlife resources:** measures stipulated by the *Act respecting the conservation and development of wildlife* (chapter C-61.1) and its regulations, including provisions related to threatened or vulnerable wildlife species, outfitters and beaver reserves, and measures in the applicable federal laws and regulations, including the legislation and regulations on fisheries;
- **Plant species designated as threatened or vulnerable:** measures prohibiting the harvesting of such species under the *Act respecting threatened or vulnerable species* (chapter E-12.01);
- **Access and property rights related to the domain of the State:** measures stipulated by the *Act respecting the lands in the domain of the State* (chapter T-8.1) and by the *Watercourses Act* (chapter R-13);

- **Issuance and oversight of forest development permits** (harvesting of firewood for domestic purposes, wildlife development, recreational development); and **delivery of authorizations** (forest roads): measures stipulated by the *Sustainable Forest Development Act* (chapter A-18.1);
- **Travel:** measures stipulated by the *Act respecting the lands in the domain of the State* and by the regulations on motor vehicle travel in fragile environments, under the *Environment Quality Act*;
- **Construction and development standards:** regulatory measures adopted by local and regional municipal authorities in accordance with the applicable laws.

## 6. Management

### 6.1 Responsibilities of the Minister of Environment and the Fight against Climate Change

The Minister of Environment and the Fight against Climate Change is responsible for the management of the reserve. Among other things, the Minister sees to the application of the *Natural Heritage Conservation Act* (chapter C-61.01) and the Regulation respecting the Réserve de biodiversité de la Moraine-d'Harricana. In managing the reserve, the MELCC enjoys the collaboration and participation of other government representatives that have specific responsibilities in or adjacent to the territory.

### 6.2 Monitoring

As mentioned in section 2, "Conservation and development of Réserve de biodiversité de la Moraine-d'Harricana", measures will be taken toward monitoring the status of the natural

environment, in collaboration with the following local and regional partners: municipal stakeholders, partners in the areas of environment, recreation and education, and residents, cottagers, hunters, fishers, trappers, etc.

### 6.3 Participation of stakeholders

As mentioned in section 2, "Conservation and development of Réserve de biodiversité de la Moraine-d'Harricana", the MELCC will seek the collaboration and participation of stakeholders in managing the reserve. Its intention is to draw up an action plan to guide management in protecting and enhancing the territory and its resources. The MELCC will prepare the plan in collaboration with the regional actors concerned. A participation and consultation mechanism for local stakeholders will be worked out by the MELCC on the basis of local and regional territorial realities.

Management of the biodiversity reserve will respect the following conservation principles:

- maintain natural ecosystem dynamics;
- restore or facilitate the restoration of disturbed ecosystems in the short and medium terms;
- respect the support capacity of ecosystems;
- maintain non-industrial harvesting activities, without encouraging their development;
- gather and disseminate knowledge about the natural and cultural heritage;
- participate in the management of adjacent areas to ensure harmonization with the conservation objectives pursued within Réserve de biodiversité de la Moraine-d'Harricana.

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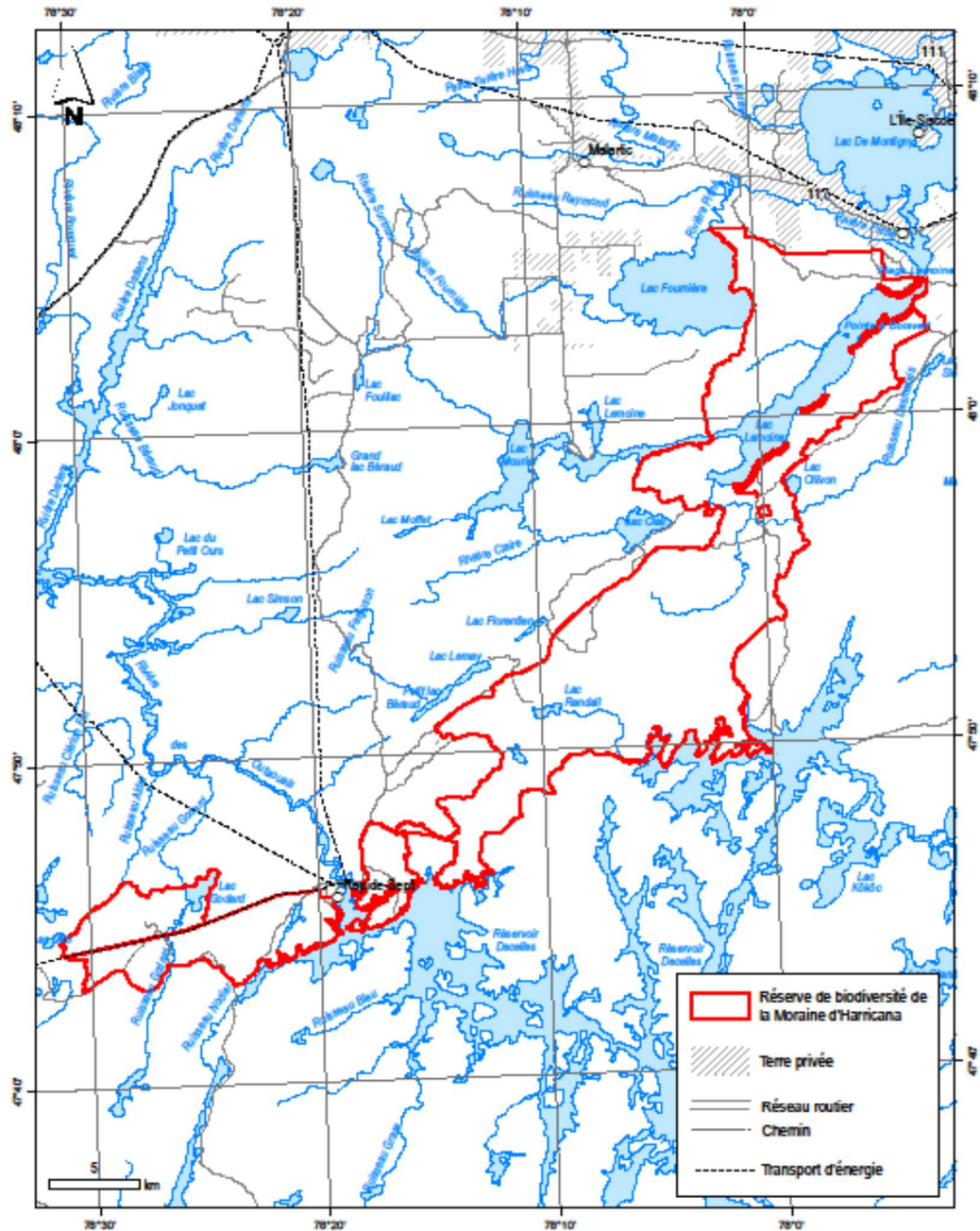
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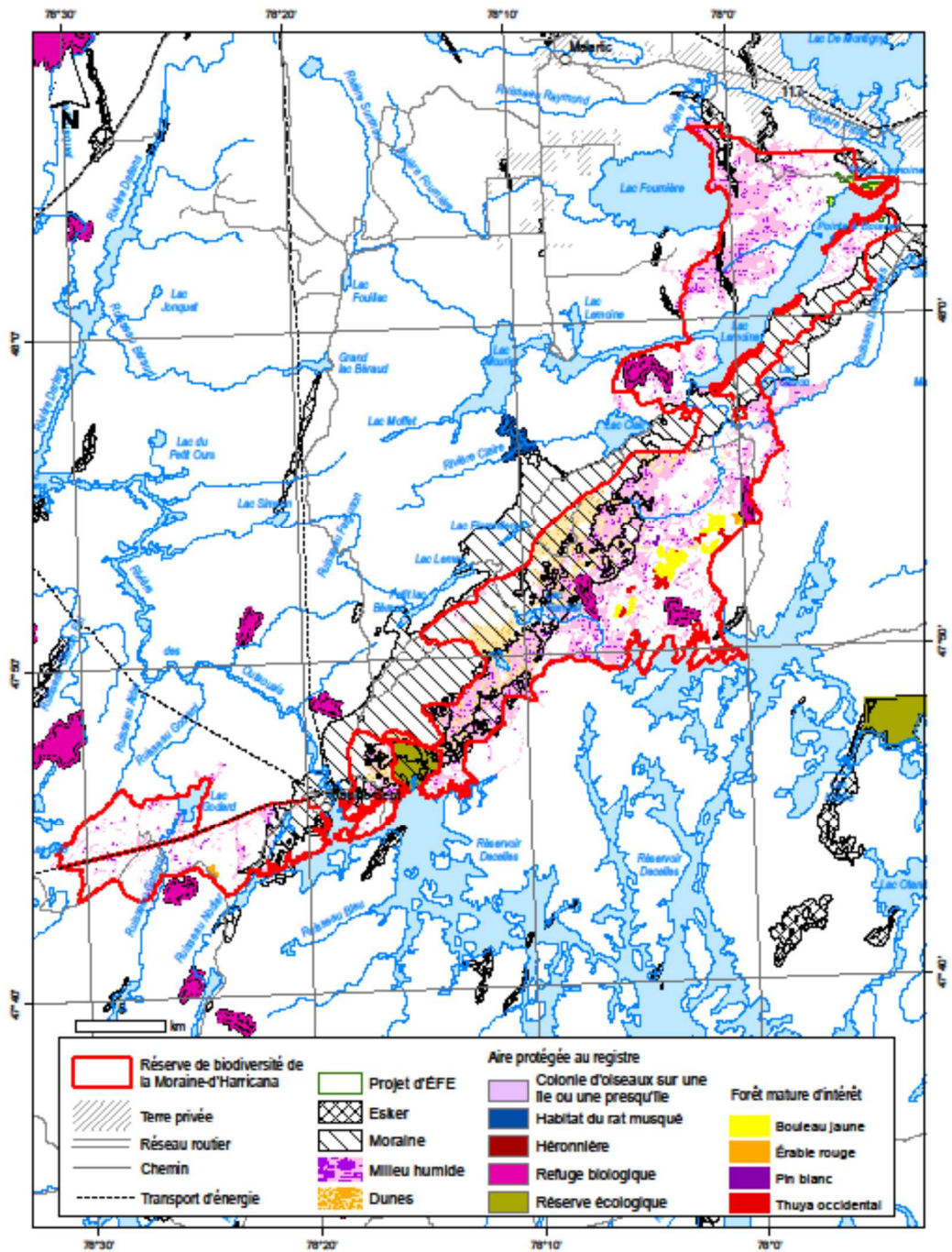
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## Appendix 1 — Réserve de biodiversité de la Moraine-d'Harricana: Boundaries and location



## Appendix 2 — Réserve de biodiversité de la Moraine-d'Harricana: Elements of ecological interest





## Appendix 3 — Réserve de biodiversité de la Moraine-d'Harricana: Land occupation and uses

