

4 Description of the eight proposed protected areas



Photo 2. Aerial view of the Lac Parent marshes (M.-A. Bouchard, MDDEP)

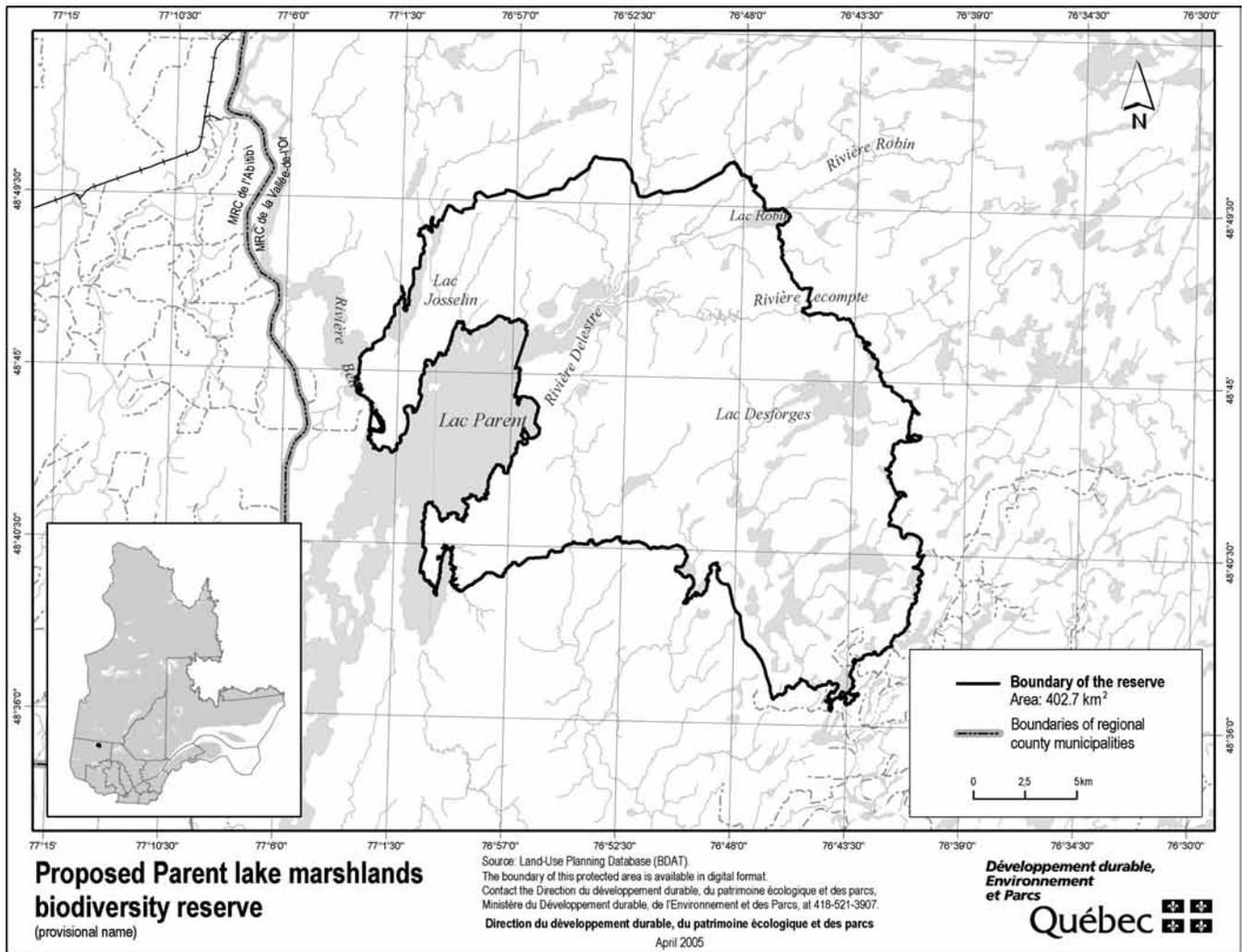
4.1 Réserve de biodiversité projetée des marais du lac Parent

4.1.1 Location, boundaries and dimensions of the proposed reserve

The Réserve de biodiversité projetée des marais du lac Parent is located in the territory of the Ville de Senneterre in the MRC de La Vallée-de-l'Or. It is roughly 35 km northeast of the Senneterre

city core and approximately 25 km south of Lebel-sur-Quévillon, i.e. between 48° 36' and 48° 51' north latitude and between 76° 40' and 77° 05' west longitude. It occupies a geographic area of 402.8 km². It is bounded to the west by Lac Parent, Lac Josselin and Lac Gustave and the Rivière Bell, to the north by a series of logging roads, and to the east and the south by a series of streams and logging roads.

Figure 49: Geographical location and boundaries of the Réserve de biodiversité projetée des marais du lac Parent, as presented in the summary conservation plan



4.1.2 Legal framework

The territory described below has the status of a proposed biodiversity reserve, pursuant to the *Natural Heritage Conservation Act* (R.S.Q. c. C-61.01). The same Act governs its regime of activities and its conservation plan.

4.1.3 Place name

The provisional place name is the Réserve de biodiversité projetée des marais du lac Parent. The proposed place name for the granting of permanent protection status is the Réserve de biodiversité des marais du lac Parent, since the place name clearly defines the main purpose of the protection, i.e. the marshes.

According to the Commission de toponymie du Québec, the hydronym “lac Parent” replaced the Algonquin name of Chabogama or Shabogama meaning “lake of channels” in 1921. The hydronym pays tribute to Simon-Napoléon Parent (1855-1920) for his public career overall. A lawyer born in Beauport, he became a municipal

counsellor in the Saint-Vallier district of Québec City in 1890, acting mayor of the city in 1892, and mayor of the Old Capital in 1894. Under his administration, which lasted until 1906, a new city hall was built (1895-1896), Québec City’s first public library opened through an agreement with the Institut canadien (1897) and numerous buildings rose up, including the Château Frontenac and the Auditorium de Québec, now Le Capitole. What is more, Parent was nicknamed “the mayor of big projects.” In addition, he was also the member of the legislature for Saint-Sauveur (1890), founder of the Pont de Québec company (1897), a minister in the cabinet of Félix-Gabriel Marchand (1897-1900), and premier of Québec from 1900 to 1905. After abandoning political life, he assumed the chairmanship for six years of the Transcontinental Railway Commission then, starting in 1911, the chairmanship of the Commission du régime des eaux courantes.¹⁰

¹⁰ Excerpted from the Commission de toponymie du Québec: http://www.toponymie.gouv.qc.ca/ct/ToposWeb/fiche.aspx?no_seq=46963

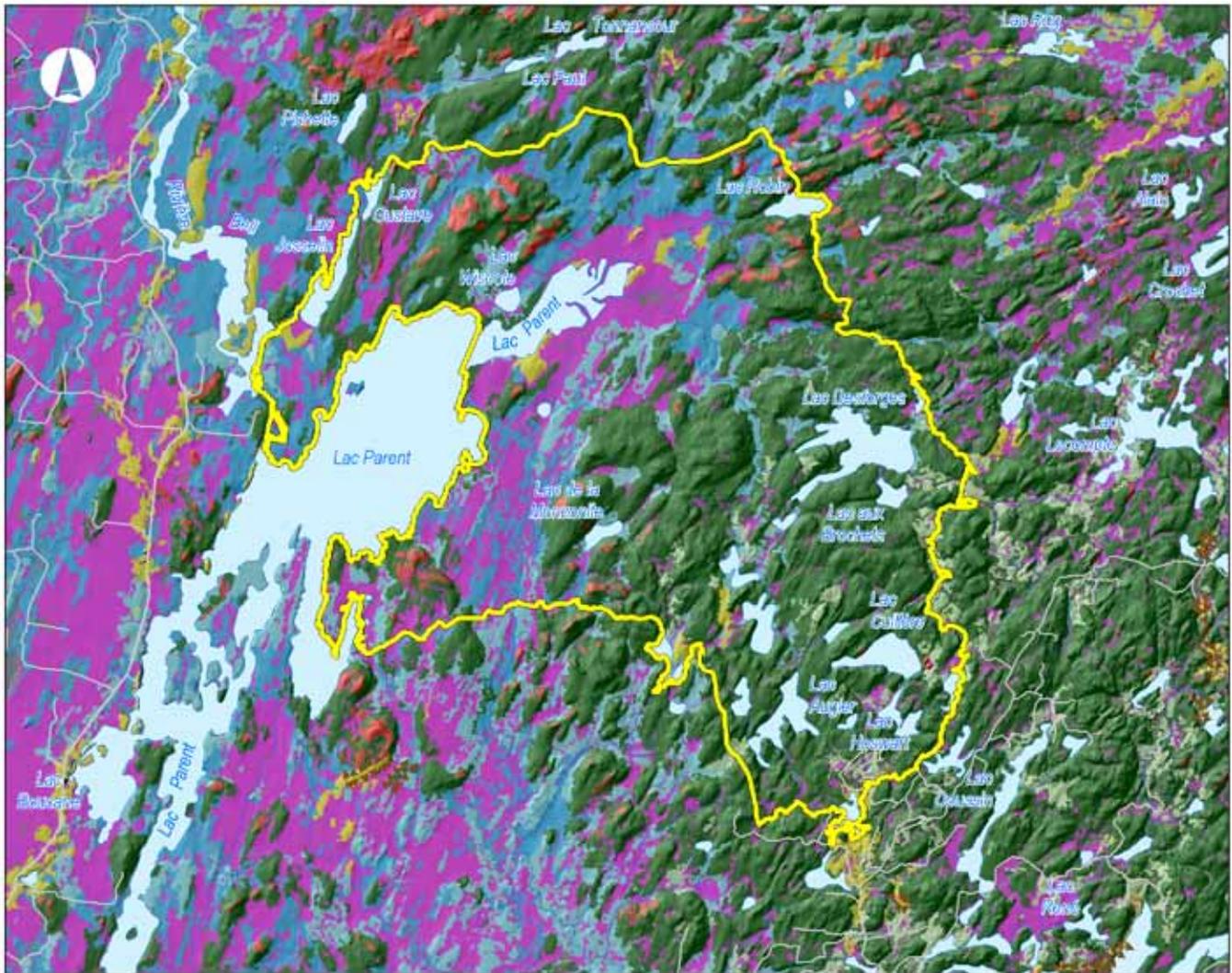
Photo 3. Lac Parent marshes



The thickness of the glacial deposits is generally very thin at the crest of slopes and increases at the bottom, as shown in the Marais du lac Parent physiographic sere (Figure 52). The physiographic sere illustrates a section of the territory through which is expressed the link between topography, surface deposits and forest cover.

The territory of the proposed biodiversity reserve has a river system in which most of the water flows towards Lac Parent, especially into the marshes. The entire territory lies in the drainage basin of the Rivière Bell, which is part of the large drainage basin of the Rivière Nottaway, which flows into James Bay (Figure 53).

Figure 51. Geomorphology of the Réserve de biodiversité projetée des marais du lac Parent



——— Réserve de biodiversité projetée des marais du lac Parent
——— Road
——— Pathway
——— Railroad
▲▲▲▲▲ Esker
 0 5 km

Surface deposit

	Glacial non morphology		Glaciolacustrine-calm water
	Drumlinized moraine		Glaciolacustrine-agitated water
	Moraine decay		Organic
	Fluvioglacial ice contact		Rock

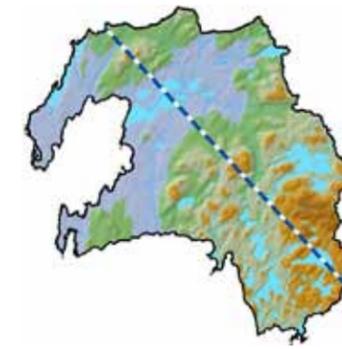


Figure 52.
The Marais du lac Parent physiographic sere

Réserve de biodiversité projetée
des marais du lac Parent

- Mistassini Highlands natural province
- Lac Mégiscane Hills natural region
- Lac Wetetnagami Hillocks physiographic ensemble



- Abitibi Lowlands natural province
- Abitibi Plain natural region
- Lac Parent plain physiographic ensemble



- Mistassini Highlands natural province
- Lac Mégiscane Hills natural region
- Lac Wetetnagami Hillocks physiographic ensemble

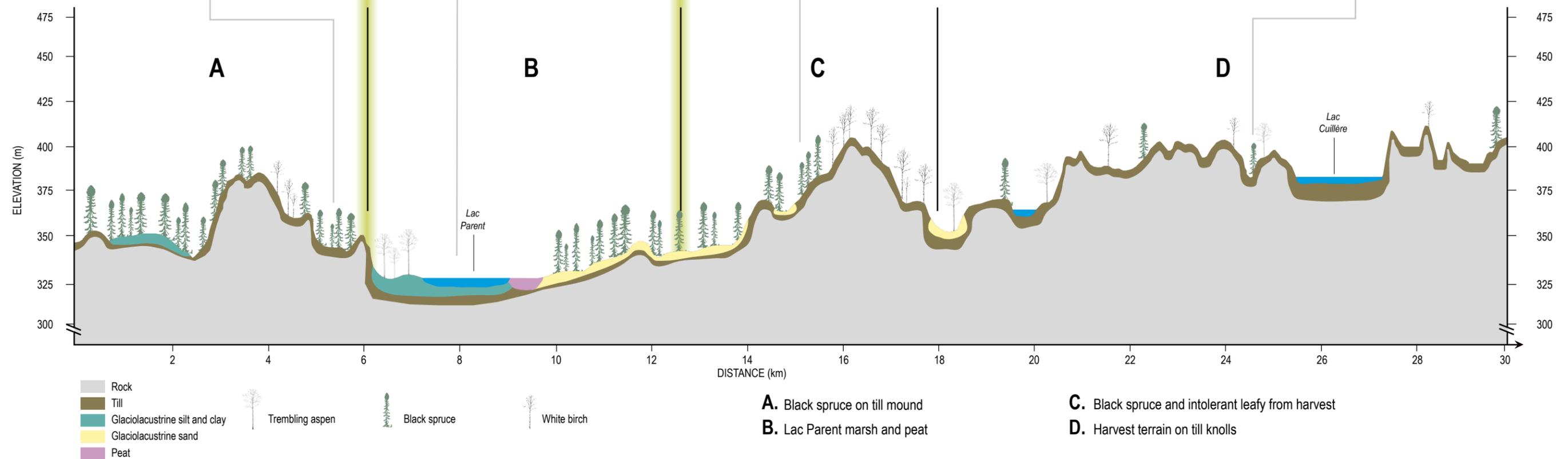
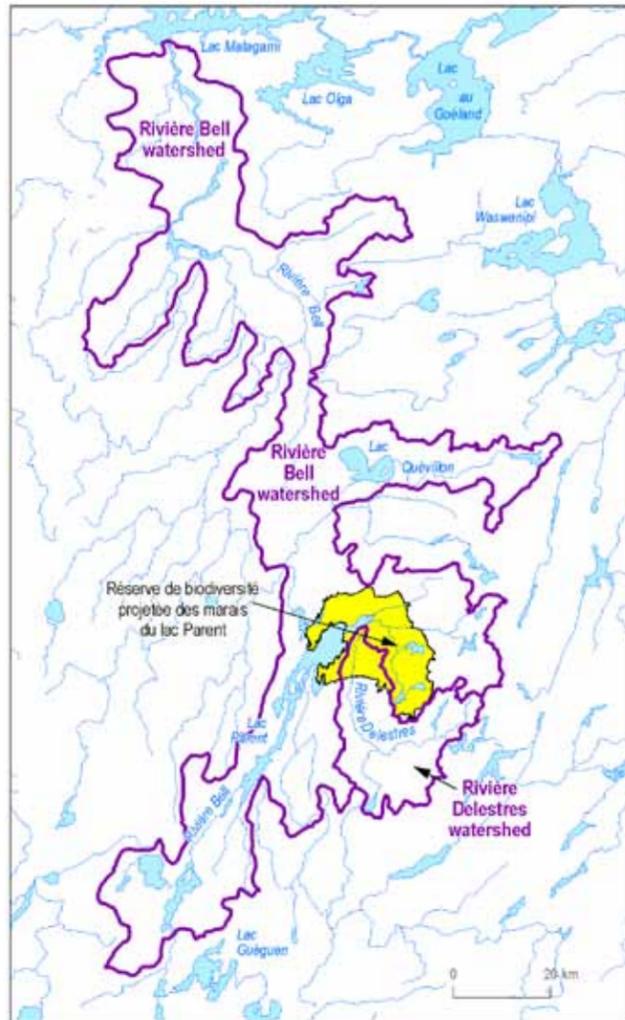


Figure 53. The drainage basin of the Rivière Delestre and the Rivière Bell

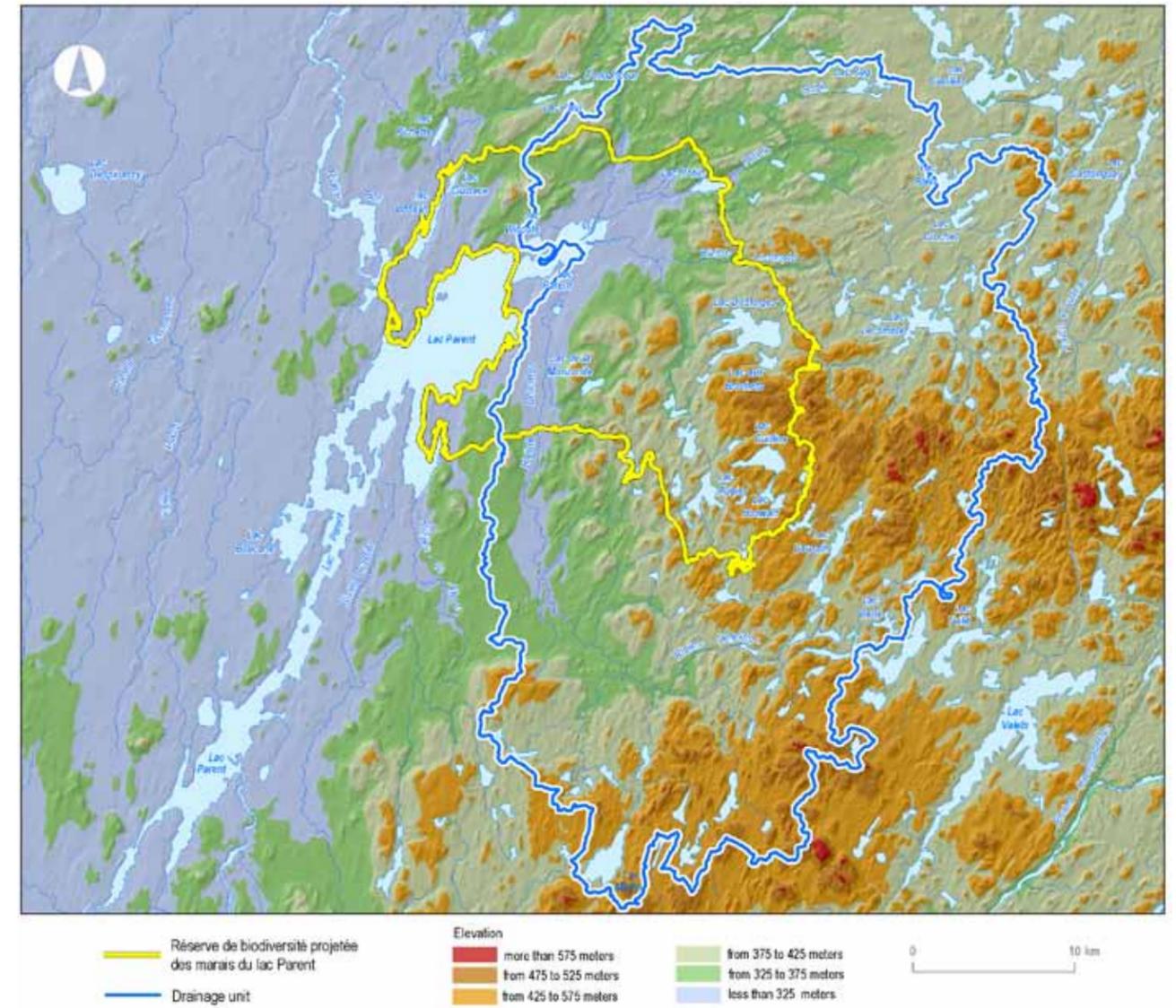


The Réserve de biodiversité projetée des marais du lac Parent protects 25% of the lands on which water flows into the Lac Parent marshes. The marshes drain a total territory of 1 253 km². Despite its name, this protected area protects only a small portion of Lac Parent, i.e. the sector most directly linked to the marsh, which accounts for roughly 4 km² of the lake's 122 km² area. A number of small lakes are found in the area, of which the five biggest ones are Lac Josselin (2.7 km²), Lac Cuillère (3.2 km²), Lac Desforges (3.9 km²), Lac Augier (2.6 km²) and Lac Robin (1.6 km²). The Rivière Delestre (Photo 4), Rivière Lecompte and Rivière Robin are especially important for the preservation of the quality of the Lac Parent marshes since they flow directly into them. However, they drain much bigger territories than the lands included in the protected area (Figure 54). Aquatic environments account for approximately 10% of the area of the proposed biodiversity reserve.

Photo 4. Rivière Delestre



Figure 54. Drainage unit of the Lac Parent marshes



The lowlands surrounding Lac Parent include several large wetlands (Figure 55). The wetlands in the reserve have a total area of 73 km², equivalent to approximately 18% of the protected area, and are mainly minerotrophic peatlands close to the marshes and the Rivière Delestre and ombrotrophic peatlands in other places.

Biological environment

Vegetation

The proposed biodiversity reserve is located in a territory that straddles the balsam fir-white birch and black spruce-moss bioclimatic domains and its eastern portion instead features cutting areas interspersed with black spruce (Photo 5), jack pine, trembling

aspen and white birch stands (Figure 56). Forest fires may explain the presence of jack pine stands in environments suited to fir trees and black spruce. Forest cover accounts for 68% of the geographic size of the protected area.

Photo 5.
Black spruce forest stand



Figure 55. Wetlands - Réserve de biodiversité projetée des marais du lac Parent

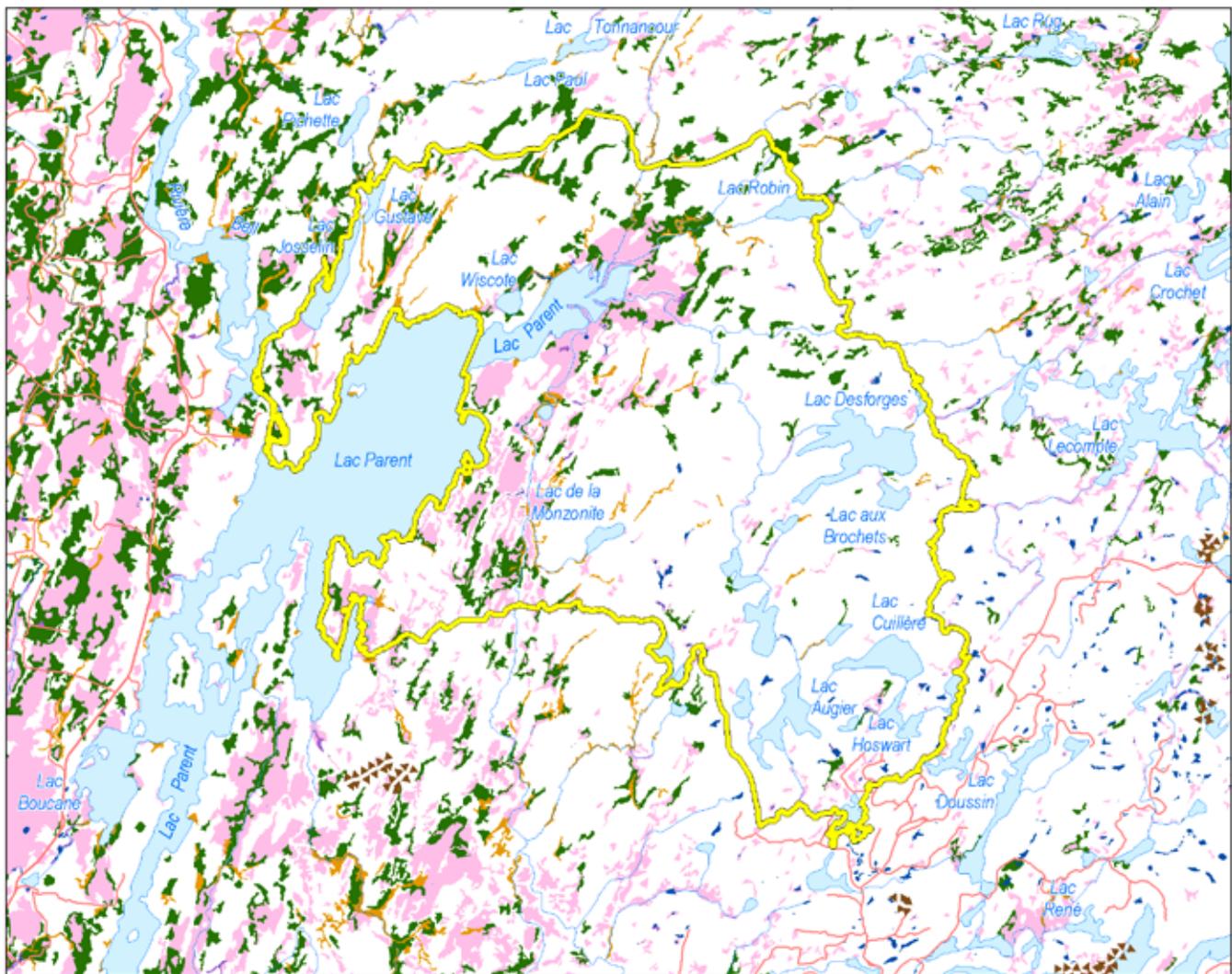
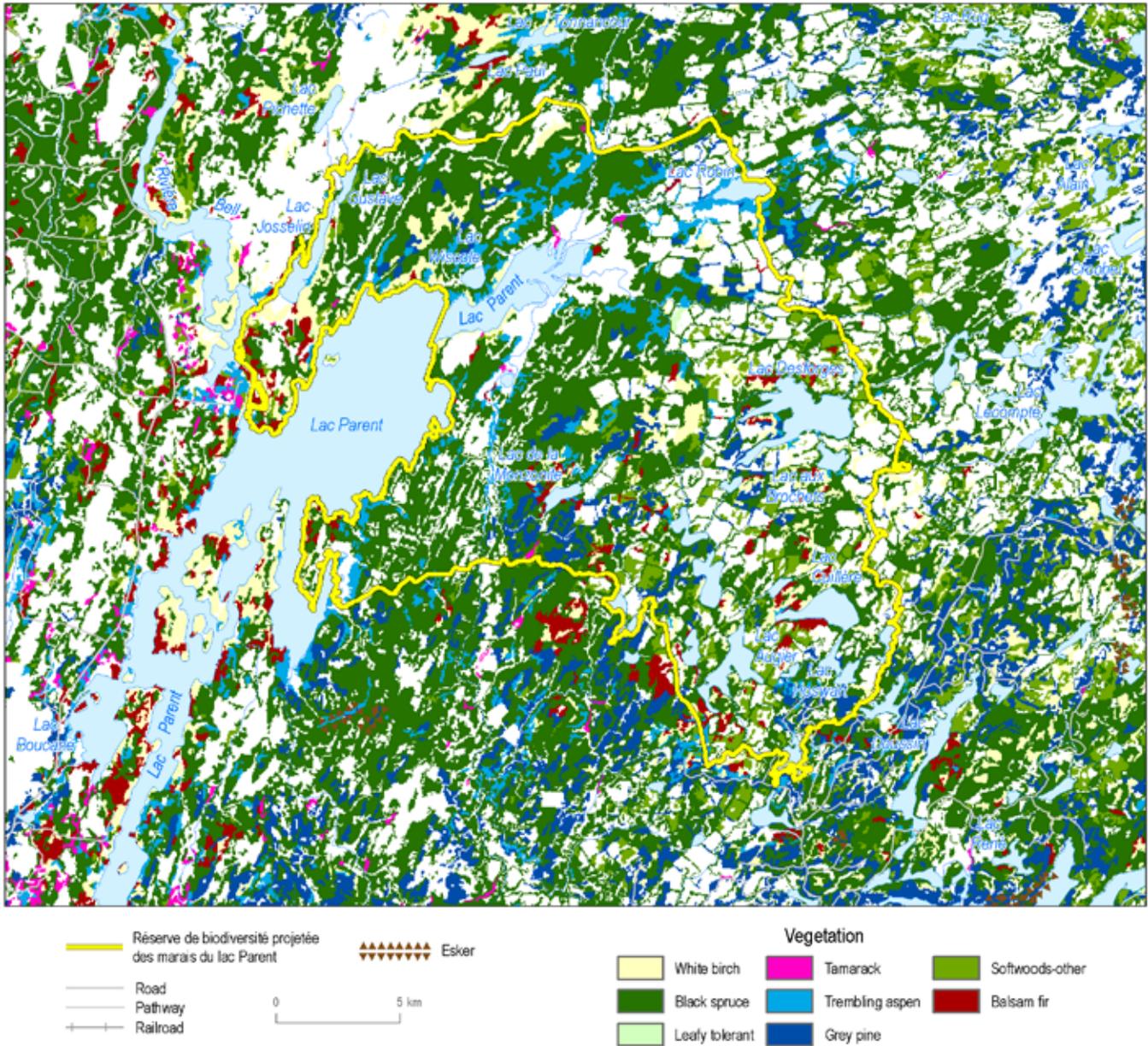


Figure 56. Vegetation - Réserve de biodiversité projetée des marais du lac Parent



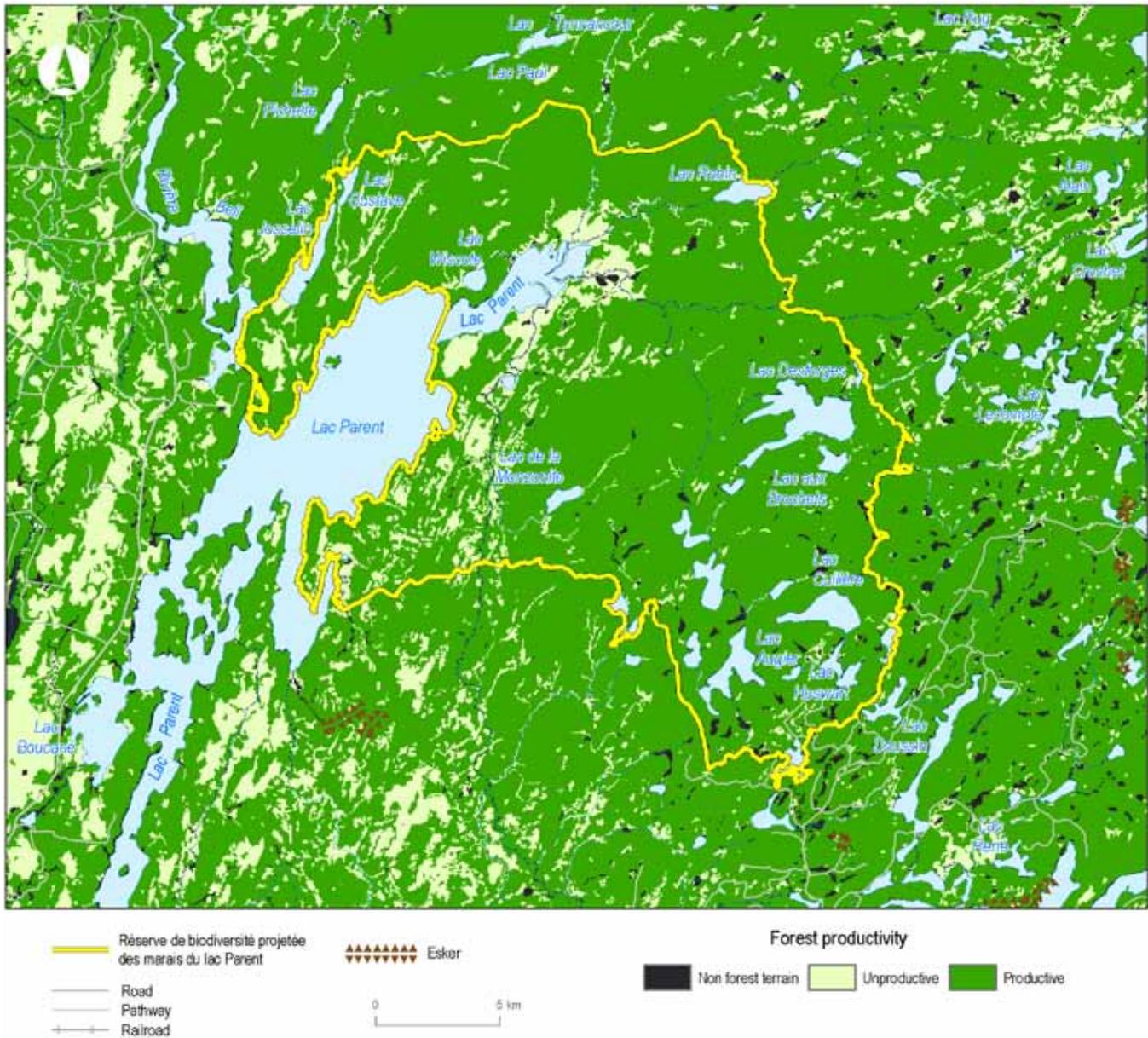
To the west, in the argillaceous, boggy lowlands, the territory has hardly been disturbed by forest harvests and black spruce stands are mainly found there. This species is, what is more, the most widespread forest stand and occupies 178 km², equivalent to two-thirds of the forest cover. On more uneven terrain and at higher altitudes, i.e. on silt hummocks, spruce stands are accompanied and occasionally dominated by white birch and jack pine stands.

As for the productivity of forests, once again, a difference is apparent between the silt hummocks in the eastern portion and the argillaceous lowlands in the western portion (Figure 57). The lowlands have a low rate of productive forests, mainly because of

the presence of numerous peat bogs and very poorly drained areas. The productive forest environments account for 76% of the forest cover in the reserve and 69% of the overall area of the reserve.

Because of recent logging in the territory, an appreciable proportion of it is without forest cover. Forest stands on the silt hummocks are mostly young, with a scattering of mature, unharvested forests. The topography or accessibility of the areas may explain the mature forest stand that have been spared. In the lowlands surrounding the marshes and on the peripheral hillocks, the forest stands are mainly medium aged, i.e. roughly between 40 and 80 years old (Figure 58). A number of rare mature forest stands or scattered old-growth forests

Figure 57. Productive forests - Réserve de biodiversité projetée des marais du lac Parent



are found there (see Figure 12). However, in the reserve overall, the most widespread forest stands are between 40 and 80 years old.

The proposed biodiversity reserve is located at the junction of two ecological subregions,¹¹ each of which has different fire regimes. However, it is almost entirely located in an ecological subregion in which the forest fire regime in which fires covering between 100 km² and 500 km² are the most frequent (see Figure 44). The proposed biodiversity reserve has an area of 403 km² and is not theoretically big

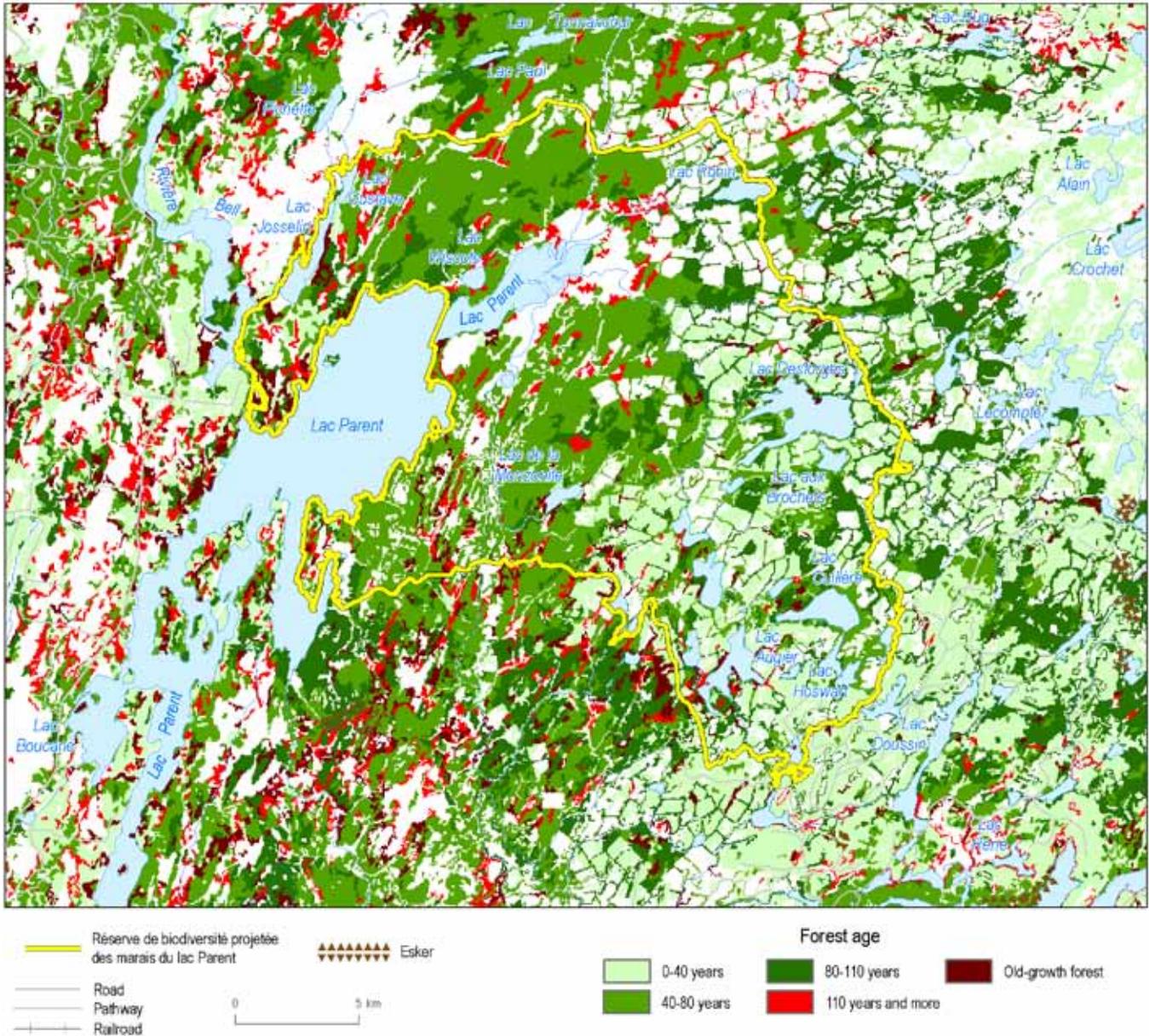
enough to maintain over time all of the components of the ecosystem at different stages of its natural dynamic. However, it is rare to be able to satisfy these conservation principles by creating protected areas of sufficient size,¹² except in types of forests little affected by natural disturbances, as is true of sugar maple forests.

The natural disturbances during the decade preceding the reservation of lands in the territory affected just over 6 km², mainly severe epidemics.

¹¹ The sixth ecological division in the MRNF's ecological hierarchical classification system.

¹² Researchers do not agree on a reference in scientific studies in this respect. However, recent research, conducted in particular by Saucier (2011), Leroux *et al.* (2007), Pickett and Thompson (1978), and Anderson (2009) suggests that a protected area would be fully effective if its area was triple that of the most frequent forest fires.

Figure 58. Age of forest stands - Réserve de biodiversité projetée des marais du lac Parent



Wildlife

While no occurrence of rare, vulnerable or threatened species has been noted in the territory, the marshes are a key habitat and a recognized staging area for aquatic avifauna, especially the Canada goose (*Branta canadensis*) and the black duck (*Anas rubripes*). Moreover, bird species of particular interest frequent the marshes, including, notably, the bald eagle (*Haliaeetus leucocephalus*), a raptor designated as vulnerable in Québec, and the osprey (*Pandion haliaetus*). In this territory that abounds in avian fauna, the Société du loisir ornithologique de l’Abitibi (SLOA) has inventoried 94 bird species, of which 13 are resident species, five are sedentary species, and 76 are migratory species. Among the species, 85 are breeding birds.

Lac Parent hosts 24 fish species, including yellow walleye, Northern pike and brook trout, the main gamefish species. Lac Parent offers fishermen abundant yellow walleye. However, it is impossible to determine which species are found in the portion included in the protected area. Two Lac Parent yellow walleye spawning grounds and one Northern pike spawning ground are located inside the reserve. Lake sturgeon, a species likely to be designated as threatened under federal legislation, is found in Lac Parent. Brook trout live in numerous lakes and watercourse and lake trout inhabit five lakes, of which Lac Desforges, Lac Cuillère and Lac Augier are the main ones.

No specific inventories have been conducted in the territory as regards terrestrial species, but the ecosystems, depending on the human footprint and age of existing forests, are likely to host several species that are typical of the Abitibi-Témiscamingue region, as indicated in the section devoted to regional fauna. Among the species trapped in the territory, mention should be made of muskrat, mink, river otter, beaver, American marten, red fox, weasel, coyote, red squirrel, wolf, Canada lynx, striped skunk, black bear, marten, and racoon. Beaver and muskrat alone account for roughly 80% of catches. Moose and black bear are the main big game hunted. Ruffed grouse, spruce grouse, snowshoe hare, and migratory birds such as ducks, geese, American woodcock and Wilson's snipe are the most common small game.

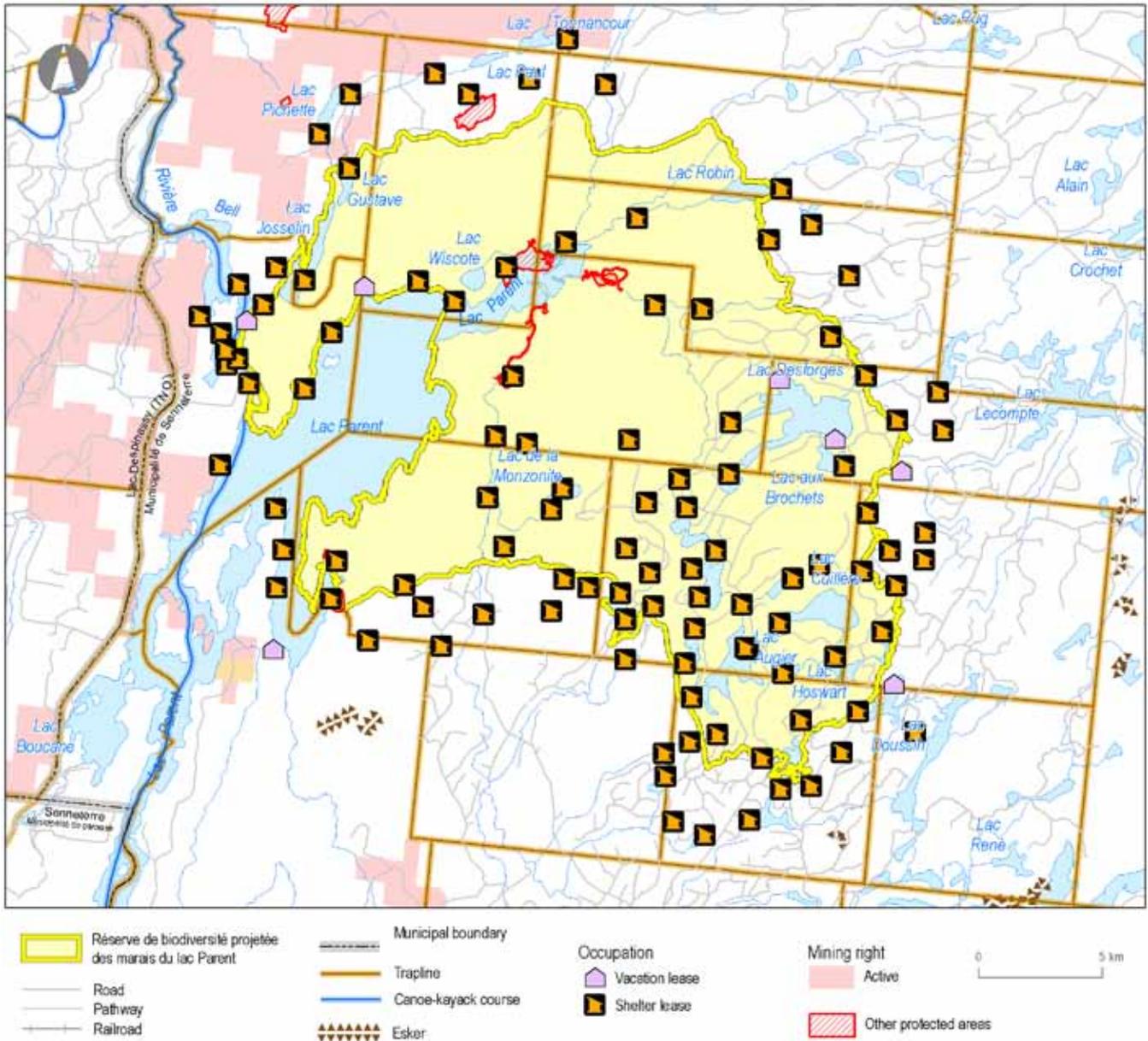
Three water bird concentration areas and two muskrat habitats located inside the reserve are already recognized as protected areas.

Social environment

Groups of algonquins appear to have used the territory in the past. In the vicinity of the reserve, members of the Lac-Simon community harvest certain specific of white birch stems to make birchbark canoes according to traditional methods. No archaeological site has been officially inventoried, possibly because no excavation has been done in the area. According to Archéo-08 (Marc Côté, personal communication), the territory does have archaeological research potential since the Rivière Mégiscane feeds into the Rivière Bell. The Rivière Mégiscane was formerly an important west-east canoe route. Moreover, the Rivière Bell flows into the Rivière Nottaway, which in turn flows into James Bay, thus constituting another important route.

Trappers frequent the reserve, which is integrally included in fur-bearing animal management unit (FAMU) 05 and straddles 13 systems of traplines, three of which have a trapping camp established in the territory of the protected area. Moreover, the territory is suited to hunting and has 50 shelter leases. Between 2003 and 2006, 70 moose were hunted in the territory of the reserve and only one black bear. Holiday resorts are rare and there are only four vacation lot leases (Figure 59).

Figure 59. Occupancy and use of the Réserve de biodiversité projetée des marais du lac Parent



The territory of the reserve is classified as Category III lands pursuant to the *James Bay and Northern Quebec Agreement* (JBNQA) and the *Act respecting the land regime in the James Bay and New Québec territories* (R.S.Q., c. R-13.1). The reserve is covered by the hunting, fishing and trapping regime applicable pursuant to section 24 of the JBNQA.

From the standpoint of accessibility, logging roads built in conjunction with the most recent logging operations and cottage roads provide access to the territory. There are approximately 85 linear km of roads. Navigation by boat on Lac Parent provides access to the marshes and the main rivers in the reserve that flow toward Lac Parent. No

hiking or off-road vehicle (quad bike or snowmobile) trail is officially recognized in the territory. However, it is likely that users travel by motorized vehicle in the summer or winter on logging roads.

The reserve straddles two forest management units (FMUs), i.e. FMU 087-51 and 084-51. Forest harvests are the main human footprint in the area. Of the 403 km² that the reserve covers, over 110 km² was subject to forestry operations (Photo 6) in the decade that preceded the protection of the territory (Figure 60). Most of the operations (77 km²) involved cutting (clearcutting, cutting with protection of regeneration, cutting with protection of small merchantable stems, and partial cutting).

Figure 60. Disturbances - Réserve de biodiversité projetée des marais du lac Parent

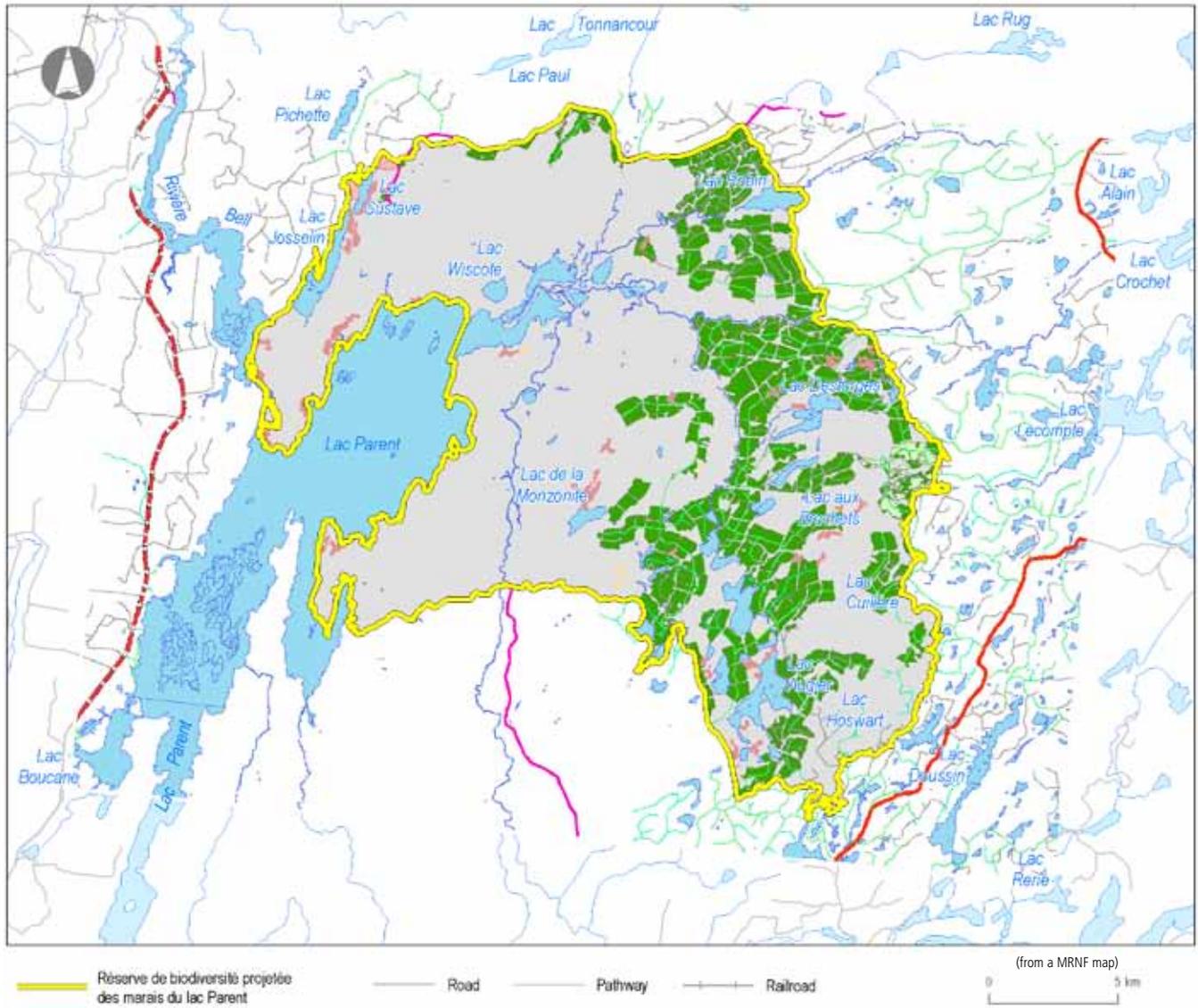


Photo 6. Cutting areas in the eastern silt hillocks



4.1.5 Contributions of the protected area

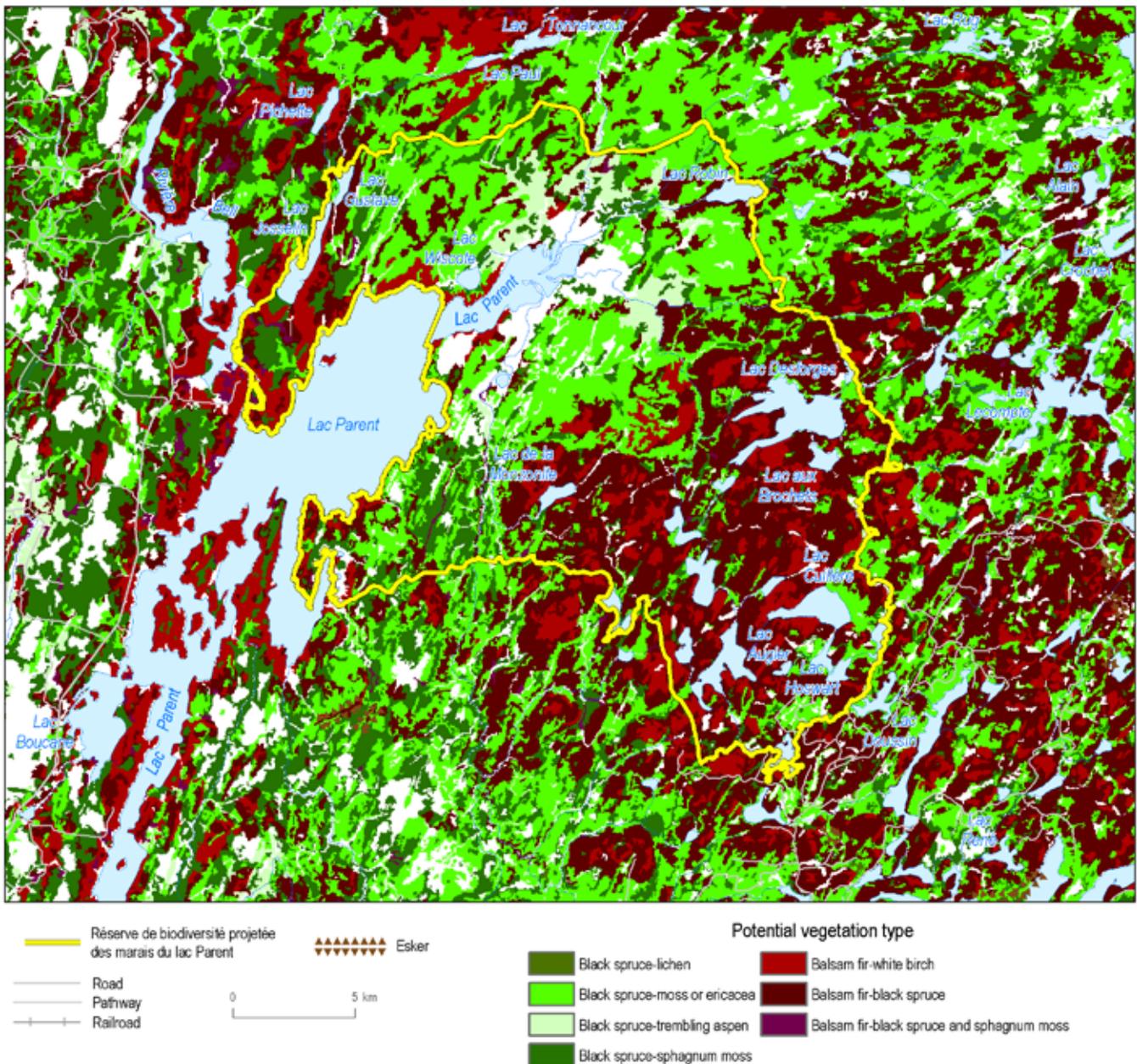
Representativeness

From the standpoint of representativeness, the Réserve de biodiversité projetée des marais du lac Parent seeks, above all, to protect the marshes and surrounding land that affects the quality of the marshes. Its eastern portion, in particular, is contributing significantly to the protection of ecosystems in physiographic unit F0205, which mainly comprises silty-clay and boggy plains. The eastern portion is protecting the main ecosystems based on till hummocks and hillocks in physiographic unit G0101.

From a biological standpoint, the reserve is protecting numerous environments corresponding to the key types of potential vegetation, i.e. the black spruce stand associated with the clay plains (western portion) and the fir forests associated with the silt hummocks and hillocks (Figure 61).

In the two physiographic units concerned and even in the two natural regions in question, the proposed biodiversity reserve, in addition to protecting important water bird habitats in the region also protects substantial areas associated with the most widespread ecosystems. It thus contributes significantly with regard to representativeness. However, it contributes little to the protection of old-growth forests.

Figure 61. Potential vegetation - Réserve de biodiversité projetée des marais du lac Parent



4.1.6 Conservation issues

The preservation of the marshes, which abound in avifauna, and the aquatic and terrestrial ecosystems associated with them, is the main conservation issue in the territory. The objective is to determine which measures or restrictions should or should not be carried out or adopted to ensure such preservation. One of the conservation objectives consists in ensuring minimal protection to the direct drainage area of the marshes, i.e. the drainage units of the Rivière Delestre, the Rivière Lecompte and the Rivière Bonin. An analysis of the drainage units was conducted in the territory to determine the best modifications to make to the boundaries of the protected area to maximize the protection of the marshes (see Figure 54), bearing in mind the context of use of the territory, in particular peripheral forestry operations. Accordingly, the ideal configuration from a theoretical standpoint was not chosen.

However, to ensure the attainment of such a protection objective, the MDDEP, its management partners and users of the territory, especially those who frequent the marshes to hunt and trap or who travel there by boat, must collaborate in order to reduce the impact of disturbances of avian species during specific periods such as nidification.

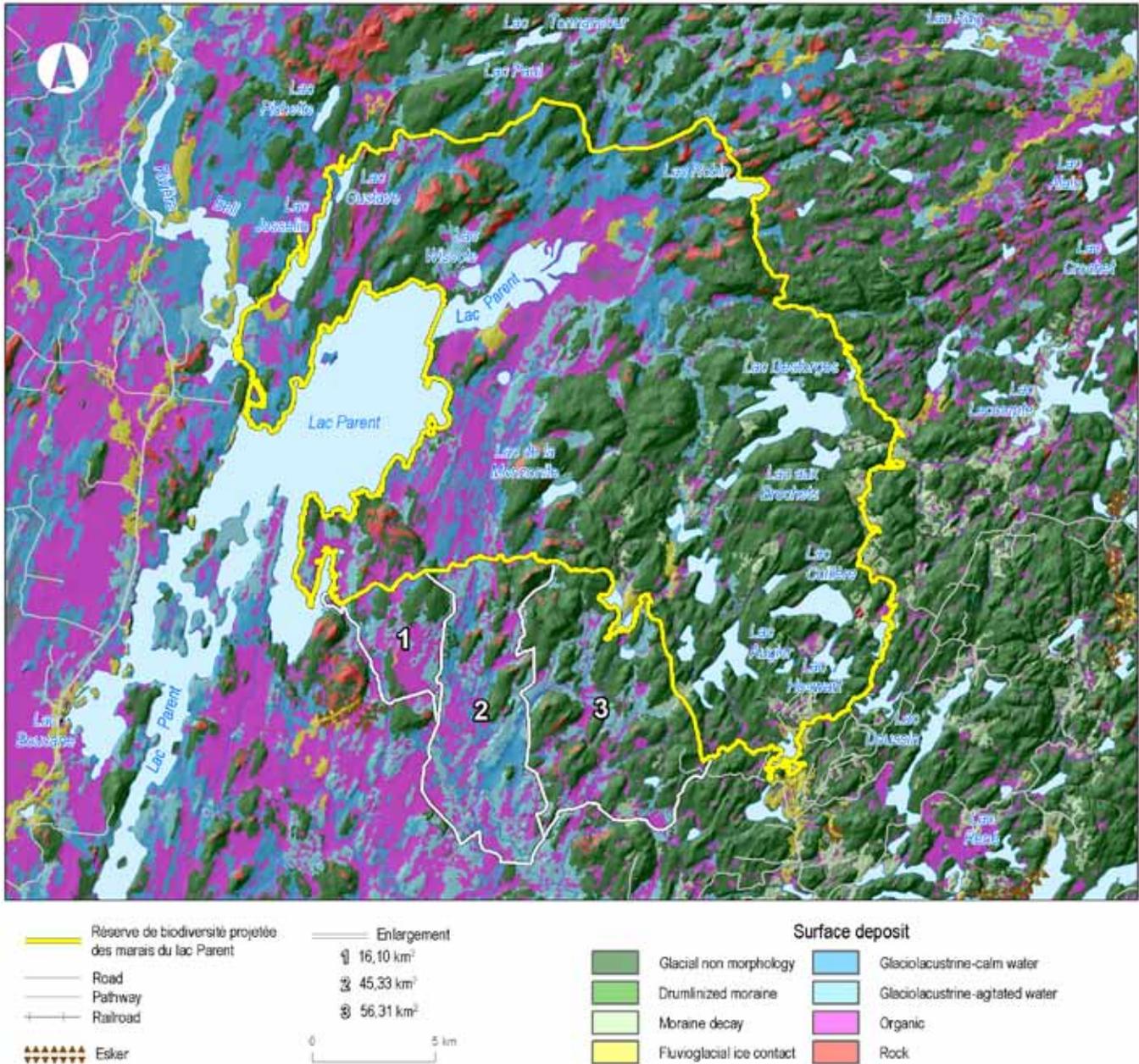
Another challenge stemming from the key conservation issue is the proper management of Lac Parent, which is not part of a protected area but is directly linked to it. One of the reasons for which the MDDEP did not include all of Lac Parent or at least a bigger portion of the lake is that the Rivière Mégiscane has potential for diversion to the Gouin reservoir. Depending on the diversion scenario adopted, the diversion of the Rivière Mégiscane could affect the Rivière Bell and, consequently, lac Parent. Given that no human intervention that affects the natural drawdown of a water body or a watercourse is allowed in a protected area, Lac Parent cannot be included in the proposed biodiversity reserve. However, since the protection of the marshes is the main purpose of the protected area,

in the event that the Rivière Mégiscane is diverted, Hydro-Québec has undertaken to make the necessary adjustments to ensure the natural water regime in the portion of Lac Parent included in the protected area and, therefore, the marshes. The MDDEP will very closely monitor any intervention in this respect to ensure that the possible diversion has no impact on the marshes.

4.1.7 Potential expansions

Potential expansions have been studied (Figure 63) in order to enhance the protection of the marshes and improve the configuration of the protected area. The expansions thus focus on the lands surrounding the reserve that have the greatest impact on the marshes since they feed rivers that are important to the marshes. It was decided that, since the lands concerned cover vast geographic areas, there was good reason to prioritize the environments that most resemble the marshes. Accordingly, the MDDEP did not adopt any expansion in its analyses for the portions of land linked to the Rivière Bonin and the Rivière Lecompte, since the lands belong to different ecosystems, hence their inclusion in a natural province that is different from the one in which the marshes are located. What is more, the lands constitute productive forest environments and should thus represent a high level of constraint from the standpoint of the protection of forests in a context where account must be taken of economic impact. The analysis thus centred on the argillaceous, boggy lowlands of the Rivière Delestre, which have fewer productive forest environments. Essentially, small till mounds are scattered over the argillaceous, boggy lowlands. Moreover, these are the main lands associated with the Rivière Delestre and which were not included in the protected area. In relation to the expansions presented during the workshops of the Table GIRT de la MRC de La Vallée-de-l'Or, the polygons were slightly reworked to more precisely follow the ecological boundaries of the lands linked to the Rivière Delestre drainage unit, although the changes are, in substance, minimal.

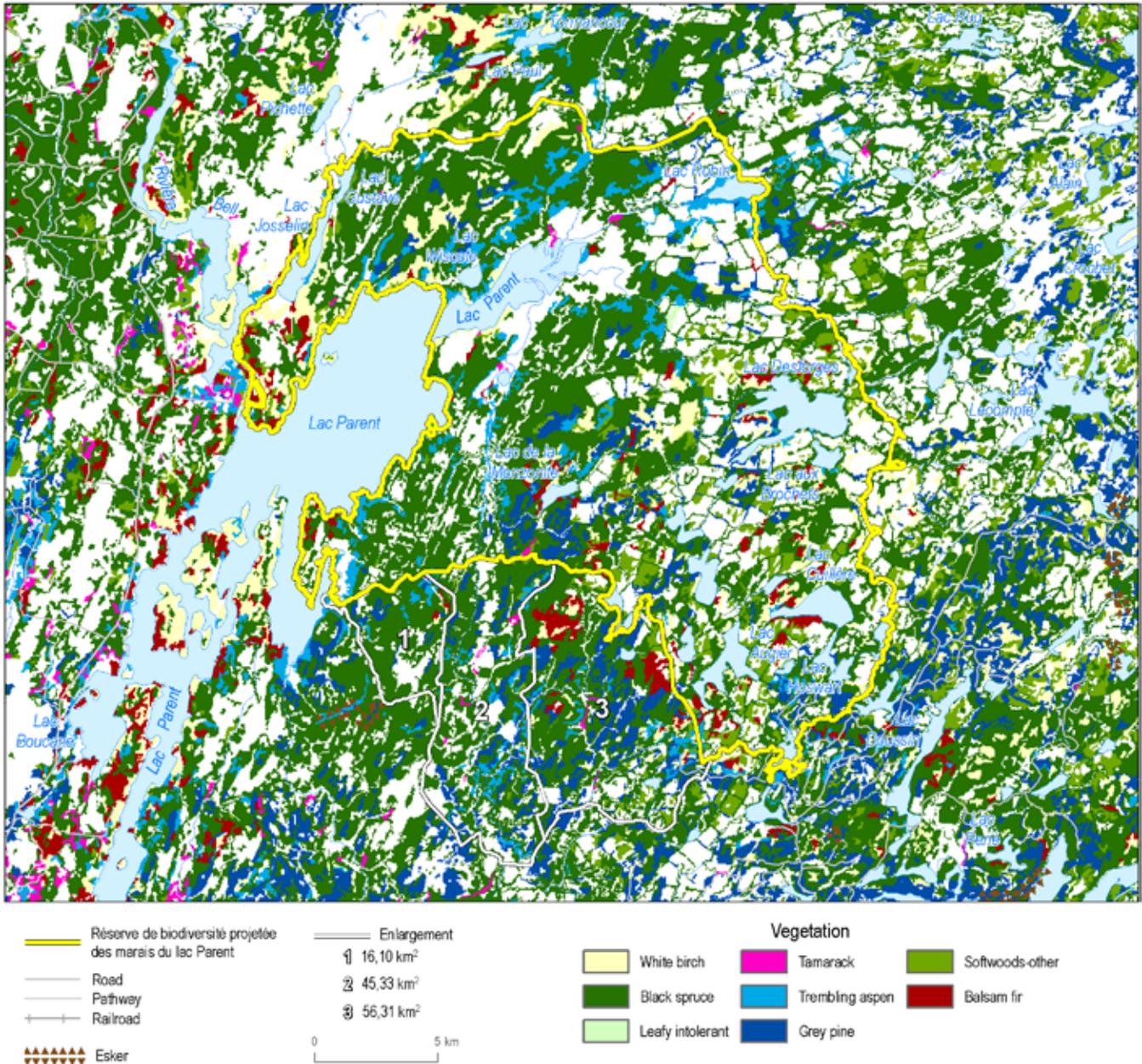
Figure 63. Potential expansions and physical environments - Réserve de biodiversité projetée des marais du lac Parent



These areas are mainly occupied by black spruce stands which, what is more, corresponds to the type of potential vegetation (Figure 64). Interestingly enough, when the potential expansions were examined, the existing forest stands were mainly middle-aged but had a higher proportion of mature stands than the average for the current proposed biodiversity reserve. However, the observation was based on data from the ecoforestry information system (4th decadal) dating from several years ago. The true picture has changed since then. Accordingly, the territories corresponding to the potential expansions analyzed have been subject to logging. The human footprint in the sectors will therefore be much greater at present.

The MDDEP will evaluate the impact of recent logging in the Rivière Delestre drainage unit to determine if it is still relevant to expand the protected area in this sector, bearing in mind that there will be no forest cover there. Moreover, Produits forestiers Résolu, the management representative of the forest management unit (FMU) in question (084-51), is in the process of obtaining certification for the FMU from the Forest Stewardship Council (FSC), which could create an advantageous situation both with regard to the expansion southward of the reserve and forest certification. However, should the expansions proceed, the impact on the short-term harvesting of stems will be null since all of the sectors will have been harvested,

Figure 64. Potential expansions and vegetation - Réserve de biodiversité projetée des marais du lac Parent



and the impact on the long-term allowable annual cut calculation is appreciable. Indeed, according to an analysis conducted by the MRNF, the overall expansions would total 14 511 m³/year over the 11 340 ha concerned, which would lower by 1% the allowable annual cut calculation of the FMU. Roughly 3.7% of the FMU is now protected, which would rise to nearly 7%. In the context of the government policy directions respecting protected areas aimed at protecting 12% of Québec’s territory by 2015, any expansion of existing reserves will contribute to the attainment of the new objectives.

The expansions analyzed, illustrated by polygons Nos. 1 to 3, cover a total area of approximately 117 km². Polygon No. 2, the biggest as regards the objectives of protecting the marshes, located in the Rivière Delestre argillaceous, boggy lowlands, covers 45 km². Depending on the scenario adopted, the total area of the biodiversity reserve would be 520 km² or 468 km² and the perimeter-area ratio would improve by going from 0.47 to 0.36 or would remain equivalent (0.48) for the scenario that calls for the inclusion of the lowlands only (polygon No. 2). According to current information, polygons Nos. 1 and 2 display fewer constraints to protection than polygon No. 3 from the standpoint of forests. However, the latter

polygon is less closely linked to the Lac Parent marshes and not protecting it would have fewer consequences.

The MDDEP presented the potential expansions of ecological interest to the members of the Table de gestion intégrée des ressources et du territoire de la MRC de La Vallée-de-l'Or (Table GIRT MRC-VO) during the workshops that preceded the public consultations. The objective was to indicate possible improvements to the protected areas and ascertain the comments, concerns and positions of the stakeholders consulted and adjust, as need be, the expansion scenarios to be analyzed. The reactions to the potential expansions are presented in detail in the companion document entitled "Summary of the preparatory workshops for the public consultation and meetings: Granting of permanent biodiversity reserve or aquatic reserve status to eight territories in the Abitibi-Témiscamingue region" submitted to the BAPE Commission within the framework of this consultation. In short, forest and municipal stakeholders are disinclined to accept the expansions for the proposed biodiversity reserves located in the territory of the Ville de Senneterre and in the forest management units that border on the Ville de Senneterre, for two main reasons. First, the stakeholders maintain that extensive areas of the territory of the Ville de Senneterre are already protected. At present, protected areas account for 5.2% of the territory of the city and parish of Senneterre. Second, the stakeholders expressed the desire at the pre-consultation workshops to obtain a regional profile of the protected areas, the shortcomings and objectives and selection criteria concerning the new protected areas related to the *Plan d'action stratégique sur les aires protégées 2011-2015* before expressing an opinion on any expansion. Such a profile was unavailable when the workshops were held. The Table GIRT de la MRC de La Vallée-de-l'Or est recommended that permanent status be granted to the proposed reserves with their current boundaries before contemplating any expansions. The interveners from the Table GIRT MRC-VO representing environmental interests called for better protection of the entire territory linked to the Lac Parent marshes.

4.1.8 Management of the permanent reserve

Once the biodiversity reserve obtains permanent status, it will be managed in such a way as to ensure the attainment of conservation objectives. Accordingly, the MDDEP's decisions pertaining to management will prioritize conservation. As for regulations, when the biodiversity reserve obtains permanent status, it will have a conservation plan in which a regime of activities will regulate all activities or initiatives in the protected area. The regime of activities will draw inspiration, by and large, from the regime of activities in the conservation plan of the proposed reserve. However, in the case of permanent status, the new conservation plan could make provision, as the case may be, for specific features to better structure activities and initiatives in order to ensure better protection of the territory, ecosystems and biodiversity.

The conservation plan will stipulate that certain activities are allowed in the protected area, that others are strictly prohibited, and that a number of activities or initiatives whose compatibility with the protected area and its conservation objectives varies will be subject to authorization by the MDDEP. For more information, see the section entitled "The regime of activities explained" or the document entitled "Régime d'activités dans les réserves de biodiversité et les réserves aquatiques." When the MDDEP evaluates authorization requests, it will attach particular importance to the protection of the marshes and Lac Parent and the drainage units of the Rivière Bonin, the Rivière Lecompte and the Rivière et Delestre, the territory associated with the marshes, and the impact on the environments of any activity or initiative.

As for the operational management that the MDDEP carries out in the territory of the permanent reserve, the department will ensure minimum management through the installation of basic signage and occasional surveillance of the protected area. However, a management committee comprising the stakeholders concerned could be established to participate in the drafting of an action plan that defines the management priorities pertaining to the protected area, then collaborate on the action plan's implementation.

