Protected areas in Québec:

A Lifelong Heritage

Réserve de biodiversité de la Météorite

CONSERVATION PLAN

Québec

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Introduction

By creating the Réserve de biodiversité de la Météorite, the Québec government is protecting representative samples of the biodiversity of the central Laurentiens natural province. Specifically, the biodiversity reserve protects the natural environments characteristic of the natural region of the Réservoir Manicouagan basin. This biodiversity reserve is part of a vast network of representative and exceptional protected areas that must cover all of Québec's ecosystem types. This network will protect many samples of the ecological variety from anthropogenic disturbances resulting from the industrial use of resources.

The Réserve de biodiversité de la Météorite aims to protect a portion of Île René-Levasseur, whose origins are quite unusual given that it was created as a result of a meteorite colliding with Earth 214 (± 1) million years ago. Another particularity of the island is that it was created by the Barrage Daniel-Johnson in 1968. The biodiversity reserve also completes the protection of the vegetation toposequence and ecological variability of this island, which is already ensured in part by the Réserve écologique Louis-Babel created in 1991. The biodiversity reserve protects low altitude forests that are representative of Québec's natural boreal forest.

The Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) wishes this natural setting and its associated cultural resources to be known and discovered.

Pursuant to the *Natural Heritage Conservation Act* (R.S.Q., Chapter C-61.01 sec. 39), the Minister of the Environment mandated the Bureau d'audiences publiques sur l'environnement (BAPE) to hold a public consultation. The consultation began on April 11, 2003. The BAPE submitted its report (181) to the Minister in September 2003, who then made it public. Various proposals for enlarging the reserve were made and some were selected. Certain management terms were also adjusted. The selected approach is to evaluate with the users the potential impact of the various activities that could affect the ecosystems and, as necessary, frame or prohibit them. Also, the terms governing the involvement of the management partners were reviewed. This conservation plan integrates the discussions and thoughts stemming from the public consultation. It will serve as a tool to guide the management process and make official the attribution of a permanent protection status to this part of Île René-Levasseur.

The objective of this conservation plan is to inform the public about the legislative framework that will apply to the biodiversity reserve. Section 4 of the document introduces the Activities framework, which is completed by the standards additional to those in the act found in Appendix 3. The conservation plan also aims to guide the Management Committee, which will be created by specifying the conservation and development objectives specific to the Réserve de biodiversité de la Météorite. These objectives, found in sections 2.1 and 2.2, are summarized as follows:

- Protecting the biodiversity;
  - Protect the natural character of the landscapes;
  - Encourage knowledge acquisition and follow-up;
- Develop the territory;
  - Offer recreational tourism and educational activities;
  - Harmonize uses.

1. The territory of the biodiversity reserve

1.1 Conservation project background

In April 1972, UNESCO proposed the creation of an ecological reserve for the entire Île René-Levasseur. In 1991, the Réserve écologique Louis-Babel was set up on 12% of the island further to an agreement between the Pessamit Band Council and the Ministère de l'Environnement du Québec.

In May 2001, the first proposal for application of the status of UNESCO World Biosphere Reserve was submitted for the territory, including Monts Groulx, the Manicouagan astrobleme and the Daniel-Johnson dam (Messier *et al*., 2001). On September 20, 2007, the efforts of the Comité de création de la Réserve de la biosphère Manicouagan - Uapishka were rewarded and the Manicouagan – Uapishka World Biosphere Reserve was officially designated.

During this time, the organization SOS Levasseur was created to lobby for the protection of the entire island. This organization acquired ecological knowledge about the island in order to promote its conservation.

The creation of the Réserve de biodiversité de la Météorite thus supports a desire to conserve this territory and completes the protection of part of Île René-Levasseur with the Réserve écologique Louis-Babel.

1.2 Official toponym

The official name is Réserve de biodiversité de la Météorite. The name refers to the meteoric origin of Île René-Levasseur.

1.3 Geographic location

The plan of the proposed Réserve de biodiversité de la Météorite is in Appendix 1 and the reserve's boundaries are shown in Appendix 2.

The biodiversity reserve covers part of Île René-Levasseur, located on the North Shore, between 51°20' and 51°36' north latitude and 68°21' and 68°36' west longitude. It is situated approximately 235 km north of Baie-Comeau.

The Réserve de biodiversité de la Météorite lies within the unorganized territories of Rivière-aux-Outardes and Rivière-Mouchalagane, which are part of the regional county municipalities (RCM) of Manicouagan and Caniapiscau.

The reserve is east of the Réserve écologique Louis-Babel. The northern boundary is situated on a ridge and follows the peninsula's watershed sub-basin. It connects with the north-east boundary of the Louis-Babel ecological reserve at Lac Iris.

DIMENSIONS AND BOUNDARIES

It covers almost all the peninsula situated east of Memory Bay. It covers an area of 232.7 km^2. The west, south and east boundaries of the Réserve de biodiversité de la Météorite correspond to the maximum critical water level of the Réservoir Manicouagan, which is 362.71 metres.

The eleven land rights granted inside the perimeter of the biodiversity reserve prior to its creation are excluded from the final boundaries. The areas excluded are approximately 4,000 m^2 for each lease for private vacation purposes.

The legal boundaries of the Réserve de biodiversité de la Météorite are defined in the technical description prepared by surveyor Claude Vincent in the minutes as follows: Réserve de biodiversité de la Météorite, minute: 6133.

ACCESS

There is no land access for Île René-Levasseur. Some outfitters along Route 389 offer access ramps for those who wish to cross the Réservoir Manicouagan reservoir by boat. Some lakes are big enough to land a plane.

The Kruger Inc. forestry company built a dock on the south-west side of the reservoir and another one on the island. These ramps are used by trucks to haul wood harvested on the island by barge, from one bank to the other. The company put up signs to tell users where to put their boats into the water.

1.4 Ecological overview

The biodiversity reserve is situated in the Central Laurentides Mountains natural province (Li and Ducruc, 1999). Specifically it protects the natural environments characteristic of the Réservoir Manicouagan basin.

CLIMATE

The area is characterized by a cold, subpolar and subhumid continental climate, with an average growing season (Gerardin and M^{c}Kenney, 2001). It belongs to the bioclimatic field of mossy spruce stands (Ministère des Ressources naturelles, 2003).

GEOLOGY AND GEOMORPHOLOGY

Île René-Levasseur is in the Grenville geologic province, which is formed of Precambrian rocks deformed over one billion years ago during the Labradorian and Grenvillian orogenies. The bedrock is largely composed of impactite, that is, rocks that recrystallized following a meteoroid impact. The bedrock along the Manicouagan reservoir is also made up of metamorphic rocks, in this case gneiss and paragneiss. From a geomorphologic perspective, the biodiversity reserve is a series of lowlands covered by a thin layer of well-drained till. The altitude is between 360 metres and 630 metres.

HYDROGRAPHY

Île René-Levasseur is part of the Rivière Manicouagan watershed. The hydrographic network mainly consists of headstreams. It also includes seven lakes, the biggest of which is Lac Beau-Pierre with an approximate size of 2.9 km^2. Île René-Levasseur was created when the Barrage Daniel-Johnson was built in 1968. Before then, the astrobleme was occupied by two lakes in the shape of a half-moon, Lac Mouchalagane to the west and Lac Manicouagan to the east.

VEGETATION

The forest cover is mostly softwood (black spruce, white spruce and balsam) and the forests are mature and relatively old: 80% are over 120 years. Exclusive black spruce stands cover over nearly 57% of the Réserve de biodiversité de la Météorite and mixed softwood (black spruce, balsam or white spruce) and white birch stands (*Betula papyrifera*) cover 20% of the territory. To a lesser extent, (8%) deciduous white birch and trembling aspen (*Populus tremuloides*) stands are scattered across the peninsula. A few predominantly Jack pine (*Pinus banksiana*) stands are located near the banks of Baie Memory.

The understorey of the black spruce and balsam stands are mostly shrubs like blueberry (*Vaccinium angustifolium*), Labrador tea (*Rhododendron groenlandicum*), creeping snowberry (*Chiogenes hispidula*), as well as large-leaf herbaceous varieties such as bunchberry (*Cornus canadensis*). The two most common mosses are *Pleurozium schreberi* and *Ptilium crista-castrensis*. Where the soil cover is thin, there are black spruce and lichens (*Cladina stellaris*, *C. rangiferina* and *C. mitis*) dominating the understorey and a sublayer of sphagnum moss (*Sphagnum* spp.) in the wetter depressions.

On the peninsula, the vegetation along the water differs from that found further inland. This particular environment was created by the rapid drop in water level of the Manicouagan reservoir. This ecotone, which is a transition zone between the water and forest illustrates the primary succession of the pioneering species from bare ground exposed by the rapid lowering of the water level in the 1980s.

WILDLIFE

The forest ecotype for the woodland caribou (*Rangifer tarandus caribou*), designated as vulnerable in March 2005, is present on Île René-Levasseur. However, density is very

low at approximately 0.3 caribou per 100 km^2 (Rochette and Gingras, 2001). Density of moose (*Alces alces*) is exceptionally high at 1.5 moose per 10 km^2 (Rochette and Gingras, 2001) compared to the average density of zone 19 south which includes Île René-Levasseur (0.4 moose per 10 km^2; Gingras *et al*, 1989). The high density is likely due to the drop in water level of Réservoir Manicouagan which allowed for the regrowth of deciduous trees in the intertidal zone.

An inventory conducted on the island in 1975 (Legault, 2001) shows the presence of beaver (*Castor canadensis*), mink (*Mustela vison*), otter (*Lutra canadensis*), willow grouse (*Lagopous lagopus*), hare (*Lepus americanus*), black bear (*Ursus americanus*), wolf (*Canis lupus*), lynx (*Lynx canadensis*) and fox (*Vulpes vulpes*). Also observed were geese, ducks, common loon (*Gavia immer*) and red-tailed hawk (*Buteo jamaicensis*).

OUTSTANDING ELEMENTS

The Île René-Levasseur sector was formed approximately 214 (± 1) million years ago from the impact of a meteorite of about 5 km in diameter. Its creation in and of itself makes the island a site of exceptional geological interest which must be protected, all the more reason because the Manicouagan astrobleme is one of the largest meteoric craters on earth.

In other respects, certain forest stands in the biodiversity reserve have been spared from natural disturbance (fire, windfall, insect epidemics) and represents a low-altitude, old-growth forest.

1.5 Land occupation and use

The main land occupations and uses of the Réserve de biodiversité de la Météorite are shown in Appendix 2.

The territory lies totally within Bersimis beaver reserve, in which the Native communities have special rights with regard to the hunting and trapping of fur-bearing animals. The status of biodiversity reserve does not affect their right and traditional practices. No archaeological site has been identified in the biodiversity reserve.

Eleven land rights have been granted in the proposed biodiversity reserve for recreational purposes.

With the exception of hunting, fishing, vacationing and snowmobiling (especially in the western portion of the island), there is no outdoor recreational activity carried on at the moment in the biodiversity reserve. In particular, no hiking trails have been inventoried.

2. Conservation and development

This section describes the conservation and development orientations as well as the specific objectives for the Réserve de biodiversité de la Météorite.

2.1 Biodiversity protection

The first objective of the network of biodiversity and aquatic reserves is to maintain the biodiversity of ecosystems in optimal conditions of integrity and operation. Ecosystem means “all the ecological conditions of habitats, all species and their genetic variability, all populations and all interactions between these components.” Any orientation, management decision or intervention must comply, above all, with this objective.

The main conservation challenge for the Réserve de biodiversité de la Météorite consists in protecting the biodiversity associated with mature, old-growth forests while allowing the practice of recreational activities.

These forests are abundant on the island in contrast to the rest of Québec where their size has decreased as a result of tree-cutting. The Réserve écologique Louis-Babel already protects mountain ecosystems, whereas the Réserve de biodiversité de la Météorite includes a sizable portion of the forests on the lower slopes, thus protect-

ing the island's flora toposequence.

Management of activities in the Réserve de biodiversité de la Météorite must therefore be conducted in keeping with this general conservation objective, which is the protection of mature, old-growth forests.

Protection of the biodiversity must also be associated with the protection of landscapes, as well as existing occupations and uses and compatible with the protection objectives of the biodiversity reserve. Management of existing occupations and uses must be done in a manner that minimizes negative impact on the biodiversity. In the case where archaeological sites are discovered, the archaeological heritage must also be protected and developed.

Specific objectives:

- *Protecting the natural aspect of the landscapes*

Île René-Levasseur is known for its remarkable natural landscapes. The Ministère du Développement durable, de l'Environnement et des Parcs wishes to maintain the quality of its landscapes. Part of the landscape is protected by another protected area status: the Réserve écologique Louis-Babel. This objective is all the more important given that these landscapes are visible from the summits of Monts Groulx and is therefore an important aspect of the hiking experience of visitors to the Réserve de biodiversité Uapishka. Protection of the western most part of the island therefore protects this magnificent panorama.

Recent and future forestry operations on the rest of the island also risk making it more difficult to maintain the natural character of these landscapes and the ecological integrity around the biodiversity reserve.

The MDDEP aims to work with its partners who occupy the territory and use the resources along its periphery in order to maintain a quality landscape throughout Île René-Levasseur.

- *Knowledge acquisition and follow-up*

In addition to contributing considerably to reaching specific objectives that are based on the principle of protection of the natural heritage, knowledge acquisition could enable efficient follow-up of the biodiversity and naturalness of the protected area. The acquired knowledge could also contribute to the development of discovery, education and awareness activities and facilitate a mutual understanding of the conservation issues among the management partners and the MDDEP.

In order to encourage knowledge acquisition, the MDDEP wishes to gain the interest of the university community for research. In this respect, the protected areas of Île René-Levasseur are of tremendous interest for scientific research and education, since they offer a broad diversity of environments, ecological conditions, species and landscapes. Moreover, the island is one of the last places where there are primitive, old-growth softwood forests. The current state of the knowledge offers good possibilities to researchers from a very diverse range of fields including biology, forest ecology, geology and tourism. The insular specificity of the Réserve de biodiversité de la Météorite combined with the presence of an ecological reserve could be of interest to more than one researcher. This different research could enrich future educational programs.

Until recently, the ecosystems on Île René-Levasseur have been practically untouched by human activities and represent a model of ecological integrity as is evidenced by the old-growth forests. In this context, it is important to know the support capacity of the ecosystems in the biodiversity reserve in order to eventually determine tolerance thresholds for the activities practiced there.

The knowledge that is acquired would enable more rigorous analyses of development projects, taking into consideration the support capacity of the biodiversity reserve's ecosystems.

The Native presence on these lands must

also be used to promote sharing and transmission of traditional knowledge to subsequent generations.

For the moment, Île René-Levasseur is mostly used by fishers, hunters and trappers. An eventual increase in land use could have serious consequences on these landscapes: various garbage, compaction, increased number of campfires, woodcutting, disorderly motor vehicle traffic, etc. The peat bogs, beaches, floodplains and permafrost are all areas that could be affected by excessive and poorly controlled human presence in the biodiversity reserve. Implementation of a system to follow up on land use could serve to make adjustments according to visible signs of degradation (erosion of the trails, etc.). For the moment, a follow-up system is not necessary but could be put in place as soon as visible signs of degradation appear.

2.2 Sustainable development of the land

According to the information available, the level of use and occupation of the biodiversity reserve is relatively low but the ecosystems are fragile. Sustainable development is possible only if it is limited and well structured. Due to the fragile nature of the ecosystems of the Réserve de biodiversité de la Météorite, the MDDEP plans to frame certain activities and does not intend to develop new activities. However, development proposals will be analysed before being authorized. Development projects of an educational nature with little impact on the environment will be given priority.

Specific objectives:

- *Promoting recreational, tourism and educational activities*

To reach the conservation objectives, it is necessary to know the land but also to adequately inform, communicate and raise the awareness of users and the population. This communication initiative can take different forms but must be intended to properly explain the ecology of the territory, the reasons for protecting it and the conservation and development objectives.

Several researchers have demonstrated that teaching visitors about practices having less impact on the environment was a more efficient way of protecting the environment than regulations (Widner and Marion, 1993/4). The objective of the Ministère du Développement durable, de l'Environnement et des Parcs is therefore to promote the visitor education regarding good environmental practices, such as practicing outdoor activities in a manner that is respectful of the wildlife and vegetation.

Other than legislation governing prohibited activities or those allowed with or without authorization, one of the means proposed to reach this objective is to make users aware of the eventual impacts of their practices on the territory and inform them about the various ways to reduce or resolve them.

Awareness raising can also be done through the practice of recreational activities that are compatible with the conservation objectives within the territory in order to foster appreciation of protected natural environments.

A code of good practices could be created and afterwards shown to users of the biodiversity reserve so that all the necessary precautions are taken to reduce or minimize their impact on the environment.

In this context, the new activities or new facilities that will contribute to developing the territory must be compatible with the existing ones and must not exceed the natural environment's support capacity. As such, the principle of precaution must be applied to the planning of development activities. Moreover, development of the biodiversity must be in such a manner that an eventual increase in use will not change the environment excessively, to prevent the integrity of the ecosystems and associated cultural resources from being affected in order to maintain the quality of the visitor's "nature" experience. For these reasons, the management committee could specify in the action plan a framework for the practice of recreational and tourism activities in the

biodiversity reserve.

- *Harmonizing uses*

In a few years, it is possible that the forest roads give access to forestry operations adjacent to the Réserve de biodiversité de la Météorite and the Réserve écologique Louis-Babel. If development leads to an increase in use of the biodiversity reserve, harmonization of the different uses should be considered. By defining a conservation vocation to this wild territory, while enabling recreational activities, steps must be taken to evaluate the compatibility of activities with the conservation objectives of the biodiversity reserve and ensure the practice of any one activity does not hinder another. Collaboration between the Ministère and the management partners will be very important for finding compromises and alternatives, if applicable.

3 Zoning

The Réserve de biodiversité de la Météorite consists of only one zone. More specific zoning may be defined in keeping with new ecological knowledge. This knowledge of the environment will serve to better characterize the different ecosystems of the biodiversity reserve and their respective fragility.

Zoning allows for maintaining the existing occupation and pursuit of existing recreational activities. However, the activities may be framed according to their level of impact and specific conservation objectives pursued.

4 Activities framework

4.1 Legal framework under the Natural Heritage Conservation Act

Activities practiced inside the biodiversity reserve are mainly governed by the provisions of the *Natural Heritage Conservation Act*.

The biodiversity reserve aims to protect the biodiversity associated with the natural settings. For this purpose, it is forbidden to practice activities that can have significant impacts on ecosystems and biodiversity, particularly those of an industrial nature. This type of protected area, however, allows the practice of less damaging activities and occupations, such as those of a recreational, wildlife and educational nature. It is therefore a type of protected area that considers humans as being part of the ecosystem and that allows continued access and limited development.

The biodiversity reserve must therefore be considered as an area devoted to protection of the natural environment, nature discovery and recreation.

It should be remembered that, under the *Natural Heritage Conservation Act*, the main activities prohibited in a territory with biodiversity reserve status are the following:

- mining, and gas or petroleum development;
- mining, gas and petroleum exploration, including brine and underground reservoir exploration, prospecting, and digging or boring;
- forest management within the meaning of section 3 of the *Forest Act* (R.S.Q., c. F-4.1);
- the development of hydraulic resources and any production of energy on a commercial or industrial basis.

However fundamental to the long-term protection of the territory and ecosystems, these prohibitions do not, however, cover all the standards deemed desirable to ensure sound management of the reserve and conservation of the environment. The Act allows the government to specify in the conservation plan the legal framework applicable in the reserve.

A more specific framework was therefore developed. Appendix 3 of this plan contains additional standards planned by the government to frame the activities that could take place in the reserve in such a manner as to better protect the natural environment

following the conservation principles and other management objectives of the biodiversity reserve. Thus, certain activities are notably subject to prior authorization from the Minister, in keeping with the conditions she has set forth for their realization.

Several provisions of Appendix 3 therefore provide for an authorization schedule by the Minister that will enable the introduction of appropriate implementation guidelines that take the circumstances into consideration.

Examples of this are certain constructions (reception building or shelters) or trails that in many cases may be part of the management and conservation objectives, whereas other types of soilwork or constructions, which are much more damaging for the environment and preservation of the biodiversity, will not be deemed appropriate nor authorized.

Several standards set forth in Appendix 3 are therefore formulated to enable the Minister to introduce an appropriate framework that takes the given context into account and enables her to be flexible when circumstances and characteristics of the environments in question allow for providing adequately guidelines for the realization of different activities.

In other respects it should be noted that the measures contained in this appendix are specifically intended for new interventions on the territory and generally do not question the installations already present or certain activities already underway on the territory, thus preserving several existing compatible uses.

Since the terms of the legal framework in Appendix 3 give little indication of whether or not the requests for authorization will be approved, the MDEEP will publish the criteria it will use in its management to analyse the requests that will be addressed to it. Guides, instructions or directives will be developed and made public. For example, the MDDEP will establish a list of the activities in Appendix 3 that will not be authorized except in exceptional or rare cases given that, above all, their impact is deemed damaging.

On the other hand, despite the introduction of a control plan, a good number of activities may be perceived as being completely compatible with the objectives of the protection status. The authorization plan in this case will aim instead to ensure that the undertaking of these activities is known, allowing the MDDEP to make adjustments as needed with the person concerned.

Finally, in order to avoid controls deemed relatively unuseful due to the low level of anticipated damage or unuseful due to overlapping with other control measures provided for by other laws. Appendix 3 also contains certain exemptions from the requirement to obtain authorization before carrying on certain activities (e.g., routine maintenance on existing installations).

4.2 Activities governed by other laws

Certain activities likely to be practiced inside the biodiversity reserve are also governed by other applicable legislative and regulatory provisions, including those requiring a permit or authorization or payment of certain fees. The practice of certain activities may also be prohibited or limited under other laws or regulations applicable on the territory of the biodiversity reserve.

In the biodiversity reserve, a particular legal framework may provide guidelines for the allowed activities, particularly in the following fields:

- Environmental protection: measures provided for particularly under the *Environment Quality Act* (R.S.Q., c. Q-2) and its regulations.
- Harvesting flora species deemed threatened or likely to designed as such: measures prohibiting the harvesting of these species under the *Act respecting threatened or vulnerable species* (R.S. Q., c. E-12.01).
- The use and conservation of wildlife species: measures provided for by the *Act respecting the conservation and de-*

velopment of wildlife (R.S.Q., c. C-61.1), including the provisions pertaining to threatened or vulnerable wildlife species, to outfitting operations and beaver reserves and the measures contained in applicable federal legislations, in particular the fishery regulation.

- Archaeological research: measures provided for in particular by the *Cultural Property Act* (L.R.Q., c. B-4).
- Access and land rights related to land in the domain of the state: measures provided for under the *Act respecting the lands in the domain of the state* (R.S.Q., c. T-8.1) and the *Watercourses Act* (R.S.Q., c. R-13).
- Issue and control of permits for forestry operations provided for under the *Forest Act* (R.S.Q., c. F-4.1).
- Circulation: measures provided for in particular by the *Act respecting the lands in the domain of the state* (R.S.Q., c. T-8.1) as well as regulations governing the circulation of motorized vehicles in certain fragile environments identified under the *Environment Quality Act*.
- Construction and building standards: regulatory measures adopted by the municipal, regional and local authorities under the applicable laws.

5. Management

The reserve will be managed in a manner to limit perturbations and anthropogenic pressures in an effort to favour the natural dynamic and maintain the natural landscape qualities. It is the ideal area for a quality nature experience where the ecosystems evolved with little influence from humans.

5.1 Responsibilities of the Minister of Sustainable Development, Environment and Parks

Management of the Réserve de biodiversité de la Météorite is the responsibility of the Minister of Sustainable Development, Environment and Parks. Among other things, it oversees the monitoring and control of activities that may be carried on and the application of the law. These management responsibilities are assigned to the MDDEP's North Shore environmental control centre (CCEQ-09). The Minister is assisted in her management duties through the collaboration and participation of other government officials who have specific responsibilities on or near this territory.

5.2 Participation of other actors and integrated management

The MDDEP will benefit from the collaboration and participation of the players concerned in the management of the biodiversity reserve. The management partners of the Ministère du Développement durable, de l'Environnement et des Parcs are many. The management committee under the responsibility of the MDDEP's North Shore regional office will have the mandate to develop an action plan aimed at the conservation and development of the biodiversity reserve. The partners identified to be part of the management committee are SOS Levasseur association, the Pessamit native community and the Comité de création de la Réserve de la biosphère Manicouagan - Uapishka. These organizations represent the different interests of the region because the representatives of the Société des amis des monts Groulx, RCMs, regional tourist associations, forestry companies, environmental and native groups sit on the committees. Also, local and regional organizations and vacation resort and user associations can be called upon to act as a partner based on the priorities established by the management committee.

Notably, the action plan will determine the actions to take, the preferred methods, the actors identified to perform the actions, the timetable and the evaluation mechanism for the results of these actions.

The Ministère du Développement durable, de l'Environnement et des Parcs would like the management of the Réserve de biodiversité de la Météorite to be an opportunity for local and regional partners to work together to protect and develop Île René-

Levasseur. Thus, they will develop a shared vision of how to make the population more aware of the importance of protecting the biological diversity and enable responsible development.

5.3 Follow-up

As mentioned under “Conservation and Development,” a follow-up of the state of the natural environment will be set up, in cooperation with the regional and local parties concerned.

Ideally, a mechanism should be set up to keep track of the conservation objectives and, as needed, rectify the strategies in place to reach them. It is also hoped that management of the biodiversity reserve respects the following conservation principles:

- Maintain the natural dynamic of the ecosystems;
- Restore, as needed and in the long term, disturbed ecosystems;
- Enable the practice of activities and development of the territory in keeping with the support capacity of the ecosystems (or according to the principle of precaution in the absence of sufficient knowledge);
- Authorize non-commercial sampling activities, but without supporting them;
- Encourage the acquisition and dissemination of knowledge about natural and cultural heritage;
- Harmonize land management in the peripheral areas with the conservation objectives of the biodiversity reserve.

Conclusion

Given the exceptional event that caused its creation, Île René-Levasseur belongs to the category of so-called irreplaceable areas, which makes it a necessity to preserve a large part of it. The Réserve de biodiversité de la Météorite also allows for protecting an important segment of primitive low-attitude coniferous, old-growth forests. Moreover, it completes the protection of the ecological toposequence which was already protected in part by the Réserve écologique Louis-Babel.

From the Réserve de biodiversité Uapishka, it is possible to admire the entire peninsula and most of the west side of the Île René-Levasseur. The Réserve de biodiversité de la Météorite therefore protects part of this panorama. The quality of these wild landscapes is essential in maintaining one of the attractions of the Réserve de biodiversité Uapishka. It was necessary as a result to protect the future of this geological jewel, while allowing development of its riches for the benefit of all.

It is appropriate to point out here the energy deployed by the local players in seeking to preserve the environment of Île René-Levasseur. Protection of this unique natural site crowns their efforts. In fact, the Réserve de biodiversité de la Météorite will benefit local and regional communities first, as an area to relax and fully enjoy its attractions. In is in this perspective in fact that the MDDEP proposed to implement management that calls on the partnership of organizations based in the community. In this perspective, a management committee will become the preferred partner of the Ministère for all issues related to the drawing up of an action plan and management planning in the Réserve de biodiversité de la Météorite.

Conservation of this territory, devoted to recreation, natural heritage discovery activities, education and scientific research to contribute to consolidating the local tourism offer. The territory with its natural character, old-growth forests and geological uniqueness offers a guaranteed recreational and tourism interest.

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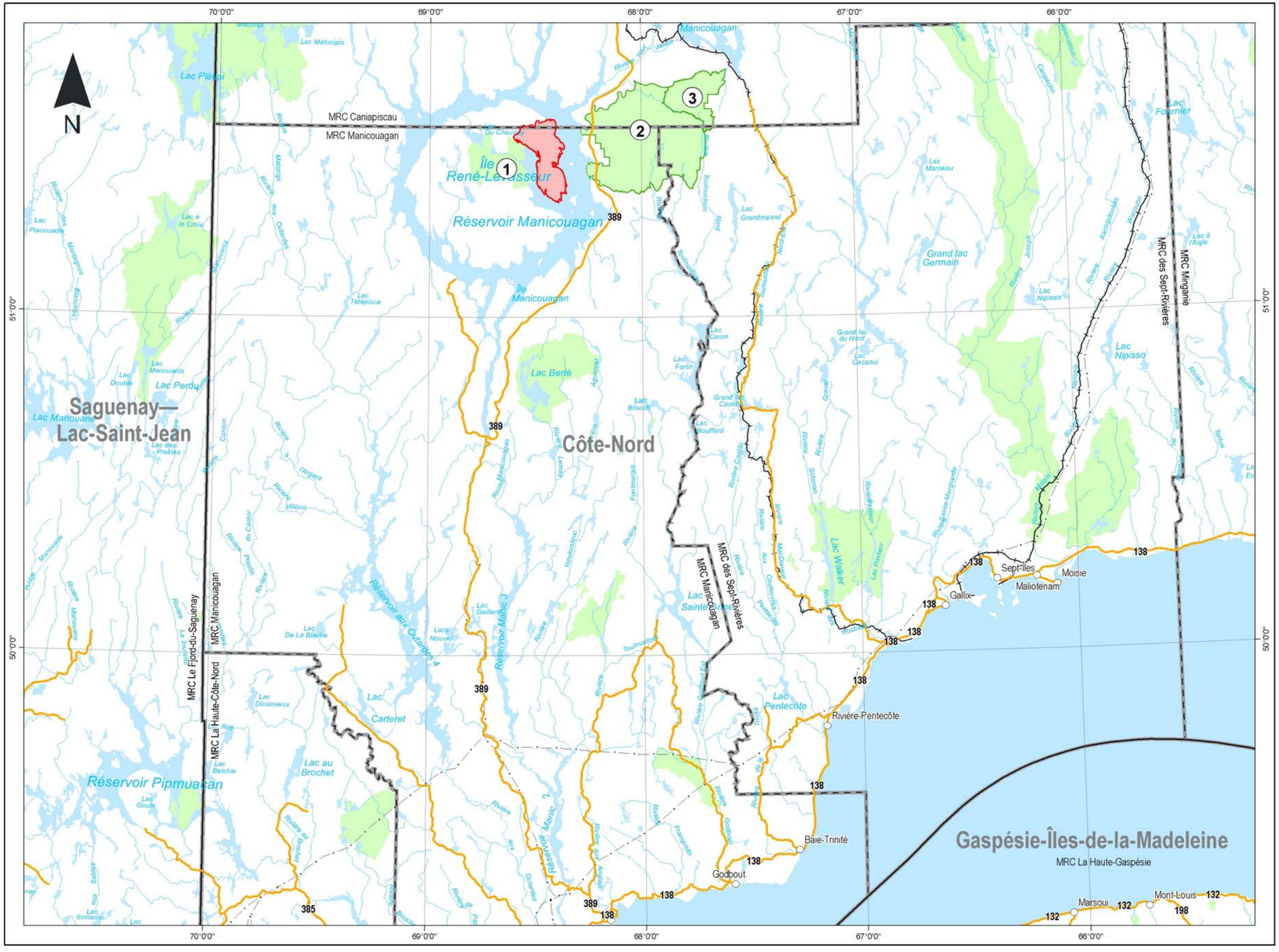
Appendix 1

Réserve de biodiversité de la Météorite

Location and Regional Context



Legend

- Road
- Railway
- Powerline
- Administrative region
- RCM boundaries
- **Météorite Biodiversity Reserve**
- Protected area
  - (1) Louis-Babel Ecological Reserve
  - (2) Uapishka Biodiversity Reserve
  - (3) Monts Groulx Proposed Biodiversity Reserve

Scale: 1:1,200,000

0 25 50 km

Metadata

Geodetic reference system: NAD83, ellipsoid GRS80

Mapping projection: Lambert Conformal Conic Projection, two reference parallels (46° and 60°)

Sources

Data
Topographic database (Base de données topographiques) (BDTQ), 1/1,000,000

Protected areas database (base de données du registre des aires protégées), 2007
Areas of interest database (base de données des territoires d'intérêt), 2007

Organizations
Ministère des Ressources naturelles et de la Faune

Ministère du Développement durable, de l'Environnement et des Parcs

Production

Production: Direction du patrimoine écologique et des Parcs
Service des aires protégées
Division de la géomatique et de l'infographie

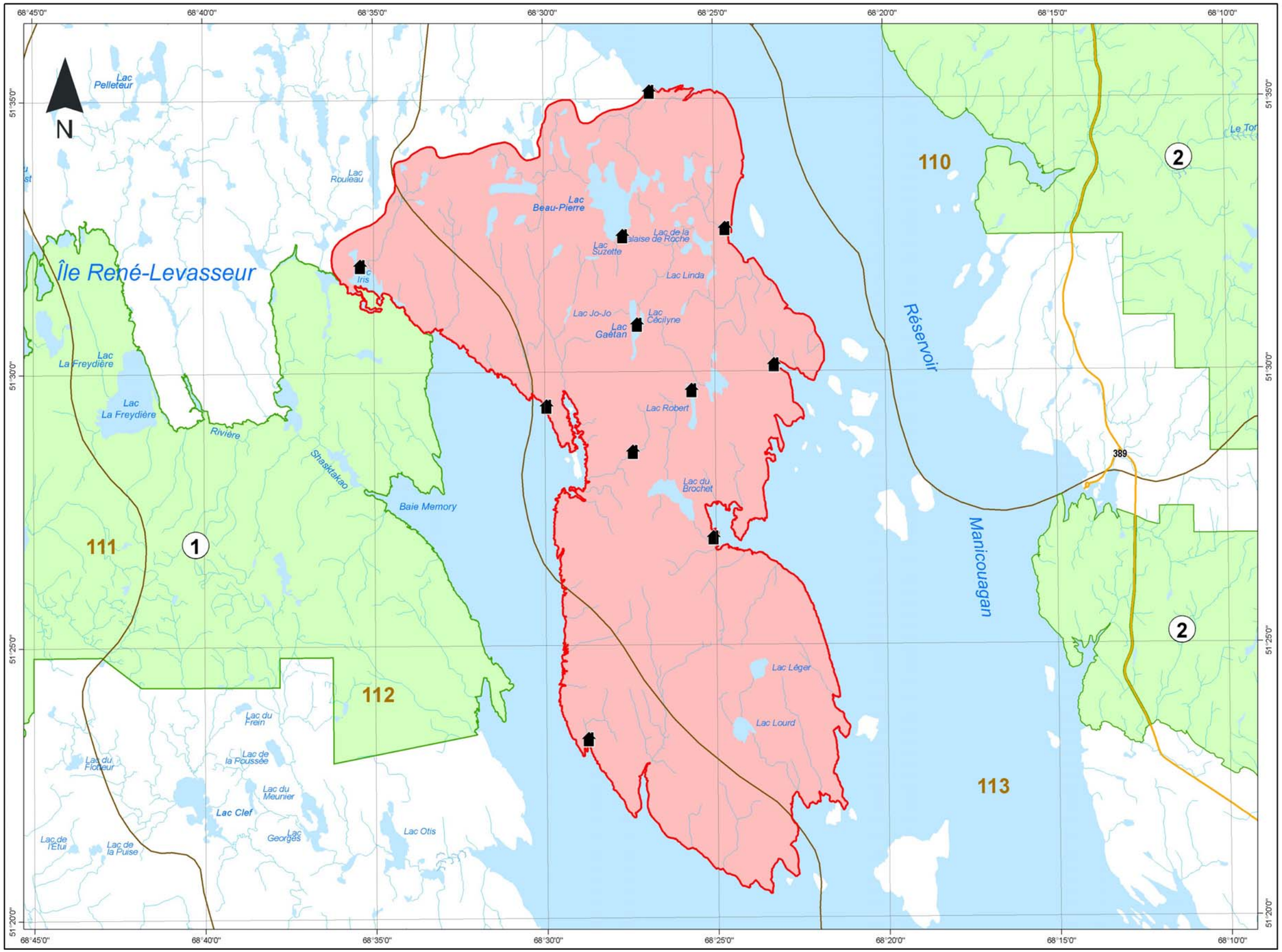
Note: This document has no legal scope.

Développement durable, Environnement et Parcs
Québec

Appendix 2

Réserve de biodiversité de la Météorite

Boundaries and Uses



Legend

- Cottages
- Road
- 112 Trapline
- Météorite Biodiversity Reserve
- Protected area
  - (1) Louis-Babel Ecological Reserve
  - (2) Uapishka Biodiversity Reserve

Scale: 1:125,000

0 2.5 5 km

Metadata

Geodetic reference system: NAD 83, ellipsoid GRS80

Mapping projection: Universal Transverse Mercator (UTM), zone 19

Sources

Data: Topographic database (BDAT) 1/100 000

Organizations: Ministère des Ressources naturelles et de la Faune

Protected areas database (Base de données du registre des aires protégées), 2007
Areas of interest database (Base de données des territoires d'intérêt), 2007

Ministère du Développement durable, de l'Environnement et des Parcs

Production

Production: Direction du patrimoine écologique et des parcs
Service des aires protégées
Division de la géomatique et de l'infographie

Note: This document has no legal scope.

Développement durable, Environnement et Parcs

Québec

Appendix 3 : Activities framework in the Réserve de biodiversité de la Météorite

—STANDARDS ADDITIONAL TO THOSE IN THE ACT

PROHIBITIONS, PRIOR AUTHORIZATIONS AND OTHER CONDITIONS GOVERNING ACTIVITIES IN THE BIODIVERSITY RESERVE

Natural Heritage Conservation Act
(R.S.Q., c. C-61.01, ss. 46 and 49)

DIVISION I
PROTECTION OF RESOURCES AND THE NATURAL ENVIRONMENT

1. Subject to the prohibition in the second paragraph, no person may establish in the biodiversity reserve any specimens or individuals of a native or non-native species of fauna, including by stocking, unless the person has been authorized by the Minister and complies with the conditions the Minister determines.

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

No person may establish in the biodiversity reserve a non-native species of flora, unless the person has been authorized by the Minister and complies with the conditions the Minister determines.

Before issuing an authorization under this section, the Minister is to take into consideration, in addition to the characteristics and the number of species involved, the risk of biodiversity imbalance, the importance of conserving the various ecosystems, the needs of the species in the ecosystems, the needs of rehabilitating degraded environments or habitats within the biodiversity reserve, and the interest in reintroducing certain species that have disappeared.

2. No person may use fertilizer or fertilizing material in the biodiversity reserve. Compost for domestic purposes is permitted if used at least 20 metres from a watercourse or body of water measured from the high-water mark.

The high-water mark means the high-water mark defined in the Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains, adopted by Order in Council 468-2005 dated 18 May 2005.

3. No person may, unless the person has been authorized by the Minister and carries on the activity in compliance with the conditions the Minister determines,

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

(2) modify the reserve's natural drainage or water regime, including by creating or developing watercourses or bodies of water;

(3) dig, fill, obstruct or divert a watercourse or body of water;

(4) install or erect any structure, infrastructure or new works in or on the bed, banks, shores or floodplain of a watercourse or body of water, although no authorization is required for minor works such as a wharf, platform or boathouse erected for private purposes and free of charge under section 2 of the Regulation respecting the water property in the domain of the State made by Order in Council 81-2003 dated 29 January 2003;

(5) carry on any activity other than those referred to in the preceding subparagraphs that is likely to degrade the bed, banks or shores of a body of water or watercourse or directly and substantially affect the quality of the biochemical characteristics of aquatic or riparian environments or wetland areas in the biodiversity reserve, including by discharging or dumping waste or pollutants into those areas;

(6) carry out soil development work, including any burial, earthwork, removal or displacement of surface materials or vegetation cover, for any purpose including recreational and tourism purposes such as trail development;

(7) install or erect any structure, infrastructure or new works;

(8) reconstruct or demolish an existing structure, infrastructure or works,

(9) carry on an activity that is likely to severely degrade the soil or a geological formation or damage the vegetation cover, such as stripping, the digging of trenches or excavation work;

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

(11) carry on educational or research-related activities if the activities are likely to 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

(12) hold a sports event, tournament, rally or similar event if more than 15 persons are likely to participate in the activity and have access to the biodiversity reserve at the same time; no authorization may be issued by the Minister if the activity involves motor vehicle traffic, unless it has been shown to the Minister that it is impossible to organize the activity elsewhere or that bypassing the biodiversity reserve is highly unfeasible.

The conditions determined by the Minister for the authorization may pertain to the location of the authorized activity, the methods used, the areas that may be cleared or deforested, the types of material that may be used including on-site materials, and the presence of ancillary works or facilities. The conditions may also include a requirement to ensure periodic follow-up or

to report to the Minister, in particular as regards the results obtained from the research to which subparagraph 11 of the first paragraph refers.

4. Despite subparagraphs 6, 7, 8 and 9 of the first paragraph of section 3, no authorization is required to carry out work referred to in subparagraph 1 of this section when the requirements of subparagraph 2 are met.

(1) The work involves

(*a*) work to maintain, repair or upgrade an existing structure, infrastructure or works such as a camp, cottage, road or trail, including ancillary facilities such as lookouts or stairs;

(*b*) the construction or erection of

i. an appurtenance or ancillary facility of a trapping camp, rough shelter, shelter or cottage such as a shed, well, water intake or sanitary facilities; or

ii. a trapping camp, rough shelter, shelter or cottage if such a building was permitted under the right to use or occupy the land but had not been constructed or installed on the effective date of the status as a biodiversity reserve; or

(*c*) the demolition or reconstruction of a trapping camp, rough shelter, shelter or cottage, including an appurtenance or ancillary facility such as a shed, well, water intake or sanitary facilities.

(2) The work is carried out in compliance with the following requirements:

(*a*) the work involves a structure, infrastructure or works permitted within the biodiversity reserve;

(*b*) the work is carried out within the area of land or right-of-way subject to the right to use or occupy the land in the biodiversity reserve, whether the right results from a lease, servitude or other form of title, permit or authorization;

(*c*) 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 permitted under the provisions applicable to the sale, lease and granting of immovable rights under the Act respecting the lands in the domain of the State (R.S.Q., c. T-8.1) and, if applicable, the limits allowed under an authorization for the structure, works or infrastructure; and

(*d*) the work is carried out in compliance with the conditions of a permit or authorization issued for the work or in connection with the structure, infrastructure or works involved, and in accordance with the laws and regulations that apply.

For the purposes of this section, repair and upgrading work includes work to replace or erect works or facilities to comply with the requirements of an environmental regulation.

5. No person may bury, abandon or dispose of waste, snow or other residual materials elsewhere than in waste disposal containers, facilities or sites determined by the Minister or in another place with the authorization of the Minister and in compliance with the conditions the Minister determines.

Despite the first paragraph, an outfitting operation does not require an authorization to use a disposal facility or site in compliance with the Environment Quality Act and its regulations if the outfitting operation was already using the facility or site on the effective date of the protection status as a biodiversity reserve.

DIVISION II
RULES OF CONDUCT FOR USERS

6. Every person staying, carrying on an activity or travelling in the biodiversity reserve is required to maintain the premises in a satisfactory state and before leaving, return the premises to their natural state to the extent possible.

7. Every person who makes a campfire must

(1) first clear an area around the fire site sufficient to prevent the fire from spreading by removing all branches, scrub, dry leaves and other combustible material;

(2) ensure that the fire is at all times under the immediate supervision of a person on the premises; and

(3) ensure that the fire is completely extinguished before leaving the premises.

8. In the biodiversity reserve, no person may

(1) cause any excessive noise;

(2) behave in a manner that unduly disturbs other persons or interferes with their enjoyment of the reserve; or

(3) harass wildlife.

For the purposes of subparagraphs 1 and 2 of the first paragraph, behaviour that significantly disturbs other persons and constitutes unusual or abnormal conditions for the carrying on of an activity or for the permitted use of property, a device or an instrument within the biodiversity reserve is considered excessive or undue.

9. No person may enter, carry on an activity or travel in a vehicle in a given sector of the biodiversity reserve if the signage erected by the Minister restricts access, traffic or certain activities 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

and complies with the conditions the Minister determines.

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

DIVISION III
ACTIVITIES REQUIRING AN AUTHORIZATION

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

(1) For the purposes of the first paragraph,

(*a*) the occupation or use of a site includes

i. staying or settling in the biodiversity reserve, including for vacation purposes;

ii. installing a camp or shelter in the reserve; and

iii. installing, burying or leaving property in the reserve, including equipment, any device or a vehicle;

(*b*) "same site" means any other site within a radius of 1 kilometre from the site.

(2) Despite the first paragraph, no authorization is required if a person,

(*a*) on the effective date of the protection status as a biodiversity reserve, was a party to a lease or had already obtained another form of right or authorization allowing the person to legally occupy the land under the Act respecting the lands in the domain of the State or, if applicable, the Act respecting the conservation and development of wildlife (R.S.Q., c. C-61.1), and whose right to occupy the land is renewed or extended on the same conditions, subject to possible changes in fees;

(*b*) in accordance with the applicable provisions of law, has entitlement under a sub-lease, an assignment of a lease or a transfer of a right or authorization referred to in paragraph *a*, and whose right to occupy the land is renewed or extended on the same conditions, subject to possible changes in fees; or

(*c*) elects to acquire land the person legally occupies on the effective date of the protection status as a biodiversity reserve, pursuant to the Act respecting the lands in the domain of the State.

12. (1) 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 and carries on the activities in compliance with the conditions the Minister determines.

The conditions determined by the Minister for the authorization may pertain, among other things, to species of trees or shrubs, the size of the stems that may be cut, the quantities authorized and the places where the activities may be carried on.

(2) Despite subsection 1, the authorization of the Minister is not required if a person staying or residing in the biodiversity reserve collects wood to make a campfire.

An authorization is also not required if a person collects firewood to meet domestic needs in the following cases and on the following conditions:

(*a*) the wood is collected to supply a trapping camp or a rough shelter permitted within the biodiversity reserve if

i. 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 by the Minister of Natural Resources and Wildlife under the Forest Act;

ii. the quantity of wood collected does not exceed 7 apparent cubic metres per year;

(*b*) in all other cases if

i. the wood is collected within a sector designated by the Minister of Natural Resources and Wildlife as a sector for which a permit for the harvest of firewood for domestic purposes under the Forest Act may be issued, and for which, on the effective date of the protection status as a biodiversity reserve, a designation as such had already been made by the Minister;

ii. the wood is collected by a person who, on the effective date of the protection status as a biodiversity reserve or in any of the three preceding years, held a permit for the harvest of firewood for domestic purposes allowing the person to harvest firewood within the biodiversity reserve;

iii. 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 by the Minister of Natural Resources and Wildlife under the Forest Act.

(3) Despite subsection 1, an authorization to carry on a forest management activity is not required if a person authorized by lease to occupy land within the biodiversity reserve in accordance with this conservation plan carries on the forest management activity for the purpose of

(a) clearing the permitted areas, maintaining them or creating visual openings, or 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, including work for access roads, stairs and other trails permitted under those provisions; or

(b) clearing the necessary area for the installation, connection, maintenance, repair,

reconstruction or upgrading of facilities, lines or mains for water, sewer, electric power or telecommunications services.

If the work referred to in paragraph *b* of subsection 3 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 in sections 13 and 15.

DIVISION IV
AUTHORIZATION EXEMPTIONS

13. 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 disaster. The person concerned must, however, immediately inform the Minister of the activity or intervention that has taken place.

14. 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 exempted from obtaining an authorization.

15. Despite the preceding provisions, the following activities and interventions involving the transmission, distribution or production of electricity carried out by Hydro-Québec (Société) or by any other person for Hydro-Québec do not require the prior authorization of the Minister under this conservation plan:

(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 Minister, in accordance with the Environment Quality Act (R.S.Q., c. 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 the activity or intervention is carried out in conformity with the request; and

(4) any activity or intervention by the Société, if the conditions for the carrying out of the activity or intervention have been determined in an agreement between the Minister and the Société and the activity or intervention is carried out in compliance with those conditions.

The Société is to keep the Minister informed of the various activities or interventions re-

ferred 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 ascertain the impact of electric 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 equipment movement incidental to the work.

DIVISION V
GENERAL PROVISIONS

16. Every person who applies to the Minister for an individual authorization or an authorization for a group or a number of persons must provide all information or documents requested by the Minister for the examination of the application.

17. The Minister's authorization, which is general or for a group, may be communicated for the benefit of the persons concerned by any appropriate means including a posted notice or appropriate signage at the reception centre or any other location within the biodiversity reserve that is readily accessible to the public. The Minister may also provide a copy to any person concerned.