The Quebec Approach to Drafting Conservation Plans for Rare Plants

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Abstract: So far, 50 species of plants have been legally designated as Threatened or Vulnerable under the *Quebec Act*. The protection of all occurrences of these plants is not necessary, nor is it realistic considering that there are more than 1000 known populations of these 50 designated species. Conservation plans help us identify which combination of occurrences should be protected to ensure the survival of the species in the province. To determine that combination, we first prioritize the species using 12 different criteria. Based on their assigned rankings, species are then divided into three levels of priority which dictate the type of protection they will receive. For the high priority species, all occurrences are targeted by the conservation plan. For the medium priority species, the set of populations targeted include all high quality occurrences and must be representative of all physiographic complexes and habitat types occupied by the species. For the low priority species, only the species distribution representation criterion is retained. The conservation plans are dynamic and flexible: they are directly linked to the Quebec Conservation Data Centre in order to consider new data that arise. This flexibility also allows us to take advantage of opportunities to protect a given population of a species which may not initially have been selected based solely on biological considerations. Our conservation plans are very concrete and concise action plans. Our goal is to devote the larger part of our resources to the implementation of the plans and to concrete actions in the field rather than to produce a bulky document in the office.

Key Words: Quebec, rare plants, species at risk, conservation plans, conservation priorities

Introduction

The *Quebec Act* regarding threatened or vulnerable species was adopted in 1989. Since then, 50 vascular plant species in the province have been, or are in the process of being, legally designated as Threatened or Vulnerable. This legal designation automatically affords protection to individuals of the species by forbidding their possession outside of their natural environment, and by prohibiting their harvest, mutilation, destruction, acquisition, or genetic manipulation (RSQ 2003). Habitat protection for these species is also possible under the Act, provided that the habitat is designated along with the species.

Considering that there are more than 1000 known populations of the 50 designated species (QCCDC 2004), the protection of every occurrence is not realistic, nor is it necessary. This is

where conservation plans come into play. Their first objective is to identify the combination of occurrences that should ensure the survival of the species in the province. To determine that combination, we must first establish how many occurrences should be protected for each species. We do that by prioritizing the species.

Species Prioritization

When developing a methodology to prioritize the species, we took inspiration from the federal government's draft *Prioritizing Recovery* (NRWG 2003). Our prioritization exercise considers 5 different themes which are expressed by 12 criteria. Table 1 lists those themes and criteria and indicates the weight associated with each one.

Table 1. Themes and criteria considered in prioritizing Quebec's rare plants for conservation plan purposes.

Theme (weight)	*Criteria (weight)*
Species precariousness **(30%)**	Global rank (10%) COSEWIC status (10%) Quebec legal status (10%)
Species value **(10%)**	Taxonomic level (5%) Uniqueness (5%)
Geographic distribution **(10%)**	Distribution in Quebec (5%) % range in Quebec (5%)
Pressures **(30%)**	Vulnerability to picking (15%) Number of extirpated occurrences (15%)
Species vitality **(20%)**	Number of high quality occurrences (5%) Total number of occurrences (10%) Number of protected occurrences (5%)

This approach usually places the highest priority on the rarest plants, those with few occurrences, though there are numerous exceptions. For example, a species with only four known occurrences in the province could fall in the lower priorities if all of its populations are of good quality and are protected. Conversely, a plant that is known from 60 populations in Quebec might be of the highest priority, even if it has a reasonable number of protected and good quality occurrences, if it is considered to be rare globally, is designated as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The methodology is not perfect and it certainly is not the only one possible, but the results it generates are consistent with our perception of the situation of rare flora in Quebec.

Based on their assigned rankings, species are then divided into three levels of priority which dictate the type of protection they will receive (Table 2). The *Quebec Act* compels us to protect every threatened or vulnerable plant species in the province; consequently, all conservation plans aim to guarantee the long-term survival of the species concerned. By prioritizing the species, we are establishing the order in which we will carry out the plans, and are bringing to light the ones which will demand greater conservation attention.

Table 2. Type of protection associated with each level of priority.

Priority level	*Type of protection*
High	Total
Medium	Optimum
Low	Minimum

Target Determination

For the lowest priority species, the conservation plan targets one population per occupied physiographic complex, an ecological mapping unit somewhat similar to ecodistrict or soil landscape unit in area (~1000 km^2). For medium priority species, all high quality occurrences are added (i.e., populations of excellent and good quality, condition, viability, and defensibility), and every habitat type occupied by the species has to be represented. Finally, for the highest priority species, all existing populations are targeted by the conservation plan (Table 3).

Table 3. Target objectives associated with each level of priority.

Priority level	*Targets*
Low	One occurrence per physiographic complex
Medium	One occurrence per physiographic complex + all high quality occurrences + all habitat types
High	All known occurrences

This is the starting point in our process, and though adjustments can be made, they usually are not necessary. Thus, the conservation plan considers high quality occurrences of the species, the significance of its distribution in Quebec, and its particular ecological niches. Depending on the species' priority, emphasis is put on one or all of those aspects. Each target selected is then assigned a priority level based mostly on a combination of occurrence, quality, and actual protection. The targets identified are more numerous in proportion, but not necessarily in absolute numbers, for high priority species than for low priority ones. On average, eight occurrences per species are selected as conservation targets.

When a target selection has to be made, (e.g., one occurrence per physiographic complex that harbors more than one occurrence), precedence is given to higher quality occurrences, to

populations associated with other rare species, or sometimes to sites that are easier to protect. These last two criteria are considered secondary since we want our first iteration to highlight the most important populations for the species' survival, regardless of socio-economic or other factors. For reference purposes, any choice made is documented and justified in the plan. Other populations not selected as targets can still be the object of some conservation measure.

We have tried to systematize the process while allowing for flexibility. Indeed, we feel it is important to consider new data that arise or to take advantage of an important opportunity to protect a given population of a species which may not initially have been selected based solely on biological considerations. The fact that the conservation plans are not a requisite of the *Quebec Act* with respect to threatened or vulnerable species, and that all conservation targets identified need not be legally protected, allows us that flexibility.

Intervention Strategy

Once the populations targeted for robust conservation measures have been identified, the concrete actions needed to maintain or improve the quality of these priority occurrences must be determined. In order to do that, we have to know what the situation is for each target with regards to the vitality of the population, nature and level of threats, land tenure, zoning, actual protection, and recent or ongoing conservation actions. Some of this information is difficult to collect, but contracting out that work has been profitable for us. The data are then stored in the Quebec Conservation Data Centre, and our conservation plans are directly linked to those data.

After that, all relevant actions can be identified and detailed, and assigned a leader, priority level, schedule, and performance indicator. Since we have a system that prioritizes not only the species but also the populations and the necessary conservation actions, we are then ready to carry out these actions, theoretically, in order of priority; however, an essential step before that takes place is to have the conservation plan peer reviewed. The plan incorporates different indicators that allow us to easily monitor each action and the general situation for the species by emphasizing the progress achieved and the gaps that need to be addressed.

Our conservation plans are very concrete and concise action plans. We do not want to repeat what has been written in a species' status report unless it is essential to the understanding of the target selection. Our goal is to devote the larger part of our resources to the implementation of the plans and to concrete actions in the field rather than to produce a bulky document in the office. On average, it takes us two weeks to draw up a plan and have it reviewed. Our experience over the past 15 years of building a thorough database, accumulating knowledge on the conservation of rare plants, and trying our hand at standard recovery plans as proposed by RENEW (Recovery of Nationally Endangered Wildlife in Canada) has lead us to this simpler approach for which we have high expectations.

References

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