



Critical habitat designation for Canadian listed species: Slow, biased, and incomplete



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ABSTRACT

Although endangered species legislation can be a powerful tool for protecting species, such laws are only as good as their implementation. Under the Canadian Species at Risk Act, Critical Habitat is designated in a Recovery Strategy as the habitat required for the recovery or survival of a listed species. We examined the finalized Recovery Strategies for 234 species and we found poor implementation of Critical Habitat designation for Canadian species. Most listed species (62.9%) lack Critical Habitat; only 11.8% have full Critical Habitat. Many species with Critical habitat obtained it years later than the statutory requirements. Designation is biased taxonomically, by major habitat type, and by lead agency. These results echo findings from the US Endangered Species Act, despite differences between the laws in when designation is supposed to occur. Additional funding and expertise would likely help reduce these delays. We also strongly encourage designation even in the face of incomplete information because of the significant negative consequences that can result from failure to protect the habitat of species at risk of extinction.

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1. Introduction

Endangered species legislation is necessary to protect species that are at risk of extirpation or extinction, as such laws aim to control human activities that lead to species declines. As of 2010, 36 countries had legislation to protect species at risk, including Australia, the United States, and Canada (Mooers et al., 2010). For the United States' 1973 Endangered Species Act (ESA), the oldest such law, a species' recovery is positively correlated with the time since being listed, having a Recovery Strategy, and designation of Critical Habitat (Taylor et al., 2005). Spending levels for protective actions may also be correlated with species recovery (Camaclang et al., 2015). The 2002 Canadian Species at Risk Act (SARA; partly implemented 2003, fully implemented 2004) is still quite young for assessing factors affecting recovery (McCune et al., 2013; Taylor and Pinkus, 2013), but intermediate analyses can address the activities and timing of post-listing implementation.

The Canadian Species at Risk Act has 5 stages: assessment, protection, recovery planning, implementation, and monitoring and evaluation (see also Mooers et al., 2010). Assessment is done by the non-governmental Committee on the Status of Endangered

Wildlife in Canada (COSEWIC), a body of experts that provides a scientific determination of the appropriate risk category for each species; the Minister of Environment then decides whether to accept COSEWIC's recommendation to list the species under SARA. Once a species is listed on Schedule 1 of the Act, the law automatically protects it from physical harm, capture, and trading. In the recovery planning stage, Recovery Strategies, Management Plans, and Action Plans are prepared by the appropriate organizations, i.e. Parks Canada Agency (PC; species occurring in Parks), Environment Canada (EC; migratory birds and terrestrial species), and the Department of Fisheries and Oceans Canada (DFO; aquatic species). In some cases, two agencies work together on species protection when species occur in both mandates. The competent ministers are responsible for ensuring Recovery Strategies are written, but Recovery teams include experts from academia, NGOs, industry, and government.

The goals of SARA are to protect species from extirpation and extinction, enable recovery for species at risk from anthropogenic causes, and prevent species listed under the Act from deteriorating to a higher risk status (SARA, SC 2002, c 29). These goals are addressed through listing species, developing Recovery Strategies with Critical Habitat for Endangered, Threatened, or Extirpated species (or Management Plan for species of Special Concern), and developing Action Plans to implement the Recovery Strategies. SARA allows subspecific protection for "Designatable Units" (DUs)

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that are independently assessed for listing status and recovery. DUs can arise, for example, when the species occurs in disjunct populations or there is clear genetic subdivision. For species for which recovery is deemed not feasible, a Recovery Strategy is prepared describing why recovery is not feasible (SARA 41(2)), and how the survival of the species will be ensured (Government of Canada, 2016).

The law specifies that the Recovery Strategy should identify Critical Habitat. Under SARA, Critical Habitat is defined as habitat “necessary to the survival or recovery” of species at risk (SARA, SC 2002, c 29); it recognizes that many species face habitat-related threats and will need habitat protection to avoid extirpation. “Partial” Critical Habitat is not defined in SARA, but many Recovery Strategies only identify “partial” Critical Habitat, which is recognized within the Recovery Strategy as inadequate for species recovery (even if all known and available habitat is designated) or needing additional study before full Critical Habitat designation is possible. In cases of partial Critical Habitat designation, the Recovery Strategies must include a Schedule of Studies describing research that will allow full Critical Habitat designation to occur, and providing a non-binding timeline for such research. Critical Habitat protection under SARA is only applicable on Federal Land, or by ministerial order for all other lands.

The statutory timelines specify that there should be a proposed Recovery Strategy for each Endangered species within one year of listing (two years for Threatened/Extirpated species), followed by 60 days for comments and 30 days for finalizing the Plan (SARA 2002, sec 42(1)). The species listed at the time the law came into force were granted extensions for the draft Recovery Strategies. These timelines differ from the American ESA, which requires the designation of Critical Habitat when a species is listed; many ESA-listed species still lack Critical Habitat, others have had significantly delayed designations, and many listings have been delayed as well (Hagen and Hodges, 2006; Schwartz, 2008).

Early analyses of SARA suggest the required post-listing steps are not being implemented effectively (Environment Canada, 2012; Taylor and Pinkus, 2013). In the first years of the law, Critical Habitat was not adequately identified and Action Plans and Management Strategies were seldom prepared within legislated timelines (Environment Canada, 2012). For example, Mooers et al. (2010) found that only 23% of listed species (including those of Special Concern) had Critical Habitat designated (however they do not distinguish between full and partial Critical Habitat designation). For a subset of Canadian species that have been reassessed by COSEWIC, Favaro et al. (2014) found that more than 50% of SARA-listed species lacked full Critical Habitat designation. Camaclang et al. (2015) compare implementation of Critical Habitat provisions for subsets of Australian, American, and Canadian species, with a focus on the kinds of information used in making designations. These analyses all point to implementation delays and concerns over limited Critical Habitat designation.

Indeed, two early lawsuits successfully challenged agency failure to designate Critical Habitat for Nooksack Dace (*Rhinichthys cataractae*), and Greater Sage Grouse (*Centrocercus urophasianus urophasianus*) (Alberta Wilderness Association v. Minister of the Environment, 2009 FC 710; Environmental Defense Canada v. Minister of Fisheries and Oceans, 2009 FC 878). For these species, the competent ministers used “ministerial discretion” to omit Critical Habitat from the Recovery Strategies, but the courts found these decisions were unlawful and that the ministers did not have such discretion; the decisions affirmed that SARA’s statutory requirements had not been met. Similarly, a case about orcas (*Orcinus orca*; Georgia Strait Alliance v. Minister of Fisheries and Oceans, 2010 FC 1233) addressed delays in Critical Habitat designation, finding among other decisions that DFO could not avoid Critical Habitat designation under SARA by claiming habitats

were already protected under other laws or conservation agreements.

After these 2009–2010 litigation decisions, the proportion of listed species with proposed Recovery Strategies that contained Critical Habitat increased by over 50%, suggesting that implementation of Critical Habitat can be improved (Taylor and Pinkus, 2013). Although this trend is promising, we note the salient issue is the finalized Recovery Strategies, as proposed Strategies do not force legal protection and there are numerous cases where the required timelines between proposed and final Strategies have not been met. Unfortunately, timeline problems have persisted: Western Canada Wilderness Committee v. Minister of Fisheries and Oceans (2014 FC 148) is a more recent case challenging delays beyond statutory timelines in formation of Recovery Strategies for 4 species, although the case also notes statutory violation of timelines for 167 species at that time. The court upheld the suit by finding that the ministers’ failure to meet statutory timelines was unlawful.

Another problem with SARA implementation is that biases occur in the identification of Critical Habitat. Favaro et al. (2014) found that reptiles, birds and marine fish had a lower rate of Critical Habitat designation than did other taxa. Additionally, the Department of Fisheries and Oceans produced a significantly lower proportion of Recovery Strategies containing Critical Habitat than the other two responsible agencies, Environment Canada and Parks Canada (Taylor and Pinkus, 2013). It is unclear if these weak implementation trends and biases have continued or if recent actions have been more timely and complete, as authors of Recovery Strategies gain experience with the law and as the case law has so far found that these timelines are non-discretionary.

Here we review the designation of Critical Habitat for all species with finalized Recovery Strategies as of August 2015. Our analysis extends previous reviews by several years of implementation, increases the number of species examined, examines all rather than just some of the finalized Strategies, and separates partial and full Critical Habitat designations. We examine biological and agency factors in relation to timing of designation and how many species have not had Critical Habitat designated or have only partial designations. We also examine the major threats identified in Recovery Strategies. We find habitat threats are pervasive but that critical habitat implementation is still poor, leaving many species with delayed or no habitat protection.

2. Methods

We examined Critical Habitat designations for all SARA-listed species that had finalized Recovery Strategies as of August 2015. Because some species are separated into subspecific “Designatable Units” (DUs) our analysis hereafter is based on DUs (we use both terms hereafter, as the majority of cases are species). Environment Canada provided a dataset of the exact dates of SARA listing for each DU. We omitted 3 cases for species that have Recovery Strategies but are currently listed as Special Concern and hence are not legally required to have Recovery Strategies. Our analysis includes 234 DUs (223 species) from 200 Recovery Strategies.

We used the SARA public registry (Government of Canada, 2015) for DU data from Species Profiles and Recovery Strategies; Critical Habitat data were collected from finalized Recovery Strategies. We used data only from finalized Recovery Strategies because proposed Recovery Strategies do not offer legal protection for species and in some cases proposed and final strategies were quite different. For all assessed DUs, we collected data on species biology, administrative information, threat types, and type of Critical Habitat designated (Appendix A). Administrative information included data on the lead agency for the Recovery Strategy, current SARA status, and number of provincial jurisdictions

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