Canadian Herpetological Society
Société d'Herpétologie du Canada

Comment on EBR Registry Number: 012-9170

Amendments to Ontario Regulation 663/98 (Area Descriptions), Ontario Regulation 665/98 (Hunting), Ontario Regulation 666/98 (Possession, Buying and Selling of Wildlife), and Ontario Regulation 670/98 (Open Seasons) under the Fish and Wildlife Conservation Act, 1997 to streamline and modernize the management of small game and furbearer wildlife species in Ontario.

Re: Harvest of Snapping Turtle

The proposed changes to the Snapping Turtle harvest are to "Restrict snapping turtle harvest across Ontario in accordance with guidance provided by the draft Small Game and Furbearer Management Framework, in consideration of the biology of the species, and consistent with recommendations in the Proposed Management Plan for the Snapping Turtle (*Chelydra serpentina*) in Canada."

The proposed shortening of the harvest period and reducing the possession limit to two Snapping Turtles does not adequately take into account the biology of the species, or the recommendations in the proposed Management Plan. The species' life history strategy is successful as long as adult mortality rates remain extremely low. The Management Plan clearly states "Considering the reproductive strategy of the Snapping Turtle (i.e., delayed sexual maturity, high embryo mortality, extended adult longevity; see section 3.4 – Limiting Factors), harvesting (legal or illegal) of adults and older juveniles is especially harmful for wild populations" (sec. 4.2, p.14). Furthermore, the plan recommends to "Evaluate and adjust (as necessary) the regulations pertaining to harvesting of Snapping turtles … to ensure the maintenance of viable populations" (Table 2, p. 22). A **legal harvest of adult Snapping Turtles in Ontario cannot ensure the maintenance of viable populations**, and directly contradicts the conservation measures in the Proposed Management Plan.

Our perception of abundance in natural wildlife populations is biased by a shifting baseline that changes with each successive human generation (Pauly 1995; Roberts 2007), and as a result of extensive human impact on the landscape, freshwater turtle abundances today represent only a fraction of historical numbers. Snapping Turtles face numerous threats in Ontario including road and boat mortality, by-catch from commercial fisheries and recreational angling, mortality from dredging, dewatering and other construction practices, invasive species, persecution, illegal collection for pets/medicine/food, increasing rates of egg and hatchling mortality from subsidized

predators, exposure to toxic contaminants, and habitat loss and fragmentation. A legal hunt of adult Snapping Turtles increases their risk of extinction.

Turtles are particularly susceptible to population declines, even with annual adult mortality rates as low as 1-3%. A growing number of studies clearly illustrate the inability of populations of turtles to sustain adult losses (e.g., Brooks et al. 1988, 1991; Compton 1999; Congdon et al. 1993, 1994; Doroff and Keith 1990; Gibbs and Shriver 2002; Herman et al. 2004; Midwood et al. 2015; Raby et al. 2011; Reed et al. 2002;). For example, removal of a single adult Wood Turtle annually from a stable population of 100 adult turtles is estimated to cause a 60% decline in 100 years, removal of two animals annually would extirpate the population in less than 80 years (Compton 1999). Similarly, removal of as few as two female adult Alligator Snapping Turtles will halve a population of 200 turtles in 50 years (Reed et al. 2002). To maintain a stable population, the annual adult survival rate of female Alligator Snapping Turtles must be at least 98% (Reed et al. 2002). The evidence is clear that a legal harvest of even one or two adults from a population on a yearly basis will result in a population decline. Furthermore, the importance of older animals in a population cannot be over-stated, as turtles many decades old are still reproductively viable, and it is these older animals that are most important in terms of reproductive potential (Congdon and van Loben Sels 1991, 1993; Congdon et al. 2001, 2003).

As Snapping turtles in Ontario face threats to adult survival from numerous sources outside of a legal harvest, the suggestion that a legal hunt of adults in Ontario can be sustainable willfully ignores all other threats and has no support in the scientific literature. For example, a Snapping Turtle population in Algonquin Park experienced significant “harvesting” from River Otters in the late 1980s. Following the reduction in the adult population, there was no evidence of any density dependent response to the decline as measured by subsequent changes in clutch size, numbers of hatchlings and juveniles, growth rates, or adult recruitment (Brooks et al. 1991; Galbraith et al. 1997). After 25 years, the population still has not recovered from this acute harvesting event (Keevil et al. in prep.). Thus, even in relatively pristine habitat (such as Algonquin Provincial Park) with a minimum of additional threats, there is no evidence that a population can sustain the removal of adult turtles and be expected to rebound within a timeframe that would allow for a sustainable harvest.

Turtles are the most threatened taxa globally (IUCN 2007), and their life-history strategy makes them exceptionally vulnerable to declines (Livaitis and Tash 2008). Dr. Justin Congdon, one of the world's foremost experts on the science of turtle life history, states the following: “the relatively low fecundity, low nest survival, and high [natural] adult survival coupled with extremely high juvenile survival required to maintain stable

populations argue strongly against applying the concept of sustained harvest to populations of long-lived organisms" (Congdon et al. 1993). Under the proposed regulations of a daily limit of one Snapping Turtle and a possession limit of two, five people on a weekend hunting expedition at a cottage could take 10 Snapping Turtles from a single population. This would be catastrophic to many small or medium-sized populations.

The “Draft Small Game and Furbearer Management Framework for Ontario” states that the first management objective is “sustainable populations.” Yet, the evidence based on the life history of the Snapping Turtle, the statements about harvesting in the proposed Management Plan, and the allowable harvest rates in the proposed guidelines, all clearly indicate that the harvest of Snapping Turtles is not sustainable. If wildlife management in Ontario is to be science-based, then MNRF should not simply restrict the harvest, but end it completely.

After significant peer review, the Snapping Turtle was listed as Special Concern in Ontario by the OMNRF, and federally throughout Canada under the Species At Risk Act in 2009. Reasons for the status designation provided by COSEWIC (Committee On the Status of Endangered Wildlife In Canada) follows: "Although this species is widespread and still somewhat abundant, its life history (late maturity, great longevity, low recruitment, lack of density-dependent responses), and its dependence on long warm summers to complete incubation successfully make it unusually susceptible to anthropogenic threats. When these threats cause even apparently minor increases in mortality of adults, populations are likely to decline as long as these mortality increases persist. There are several such threats and their impacts are additive. Aboriginal Traditional Knowledge generally support the declining trend and population figures in the COSEWIC report." In addition, in November 2016, the Snapping Turtle was added under CITES (Convention on International Trade in Endangered Species) to be part of international trade reporting and restrictions.

By continuing to allow a legal hunt, despite continuing declines of a Species At Risk, and a harvest not based on science, the government is risking a part of our natural heritage and is sending a confusing message to residents about Ontario's efforts to protect declining species. End the harvest of Snapping Turtles in Ontario.

Re Harvest of American Bullfrog

The Bullfrog is a relatively long-lived highly aquatic amphibian species that requires permanent waters. Generally two to three seasons are required for development and metamorphosis of tadpoles. Bullfrogs can function as keystone predators in many wetland communities, thus affecting overall density of some species

and promoting biodiversity. Bullfrogs have declined or are now absent in some areas of the Great Lakes region (Harding 1997). Low occupancy of Bullfrogs in long-term surveys in southwestern Ontario, relative to higher abundances in years past, indicates declining populations (Hecnar unpublished data). Similarly, information gathered from First Nations and commercial harvesters, through OMNRF census data and by researchers, all suggest declines have occurred in areas investigated (Berrill et al. 1992). In large wetland areas such as Point Pelee National Park, where some Bullfrog recolonization has occurred after an extended absence, the species has not recovered to former abundances (Hecnar and M'Closkey 1997; Hecnar unpublished data).

The Bullfrog has experienced catastrophic habitat losses throughout much of its Ontario range, especially in southern Ontario. The current range has been further threatened due to consistent use of agrochemicals, road salt, manure and vehicle use. Road mortality rates are high in areas where wetlands are adjacent to roads, predation from subsidized predators has been noted at sites such as Rondeau Provincial Park and Big Creek National Wildlife Area, and invasive plants such as *Phragmites australis* have overtaken most of the available shoreline habitat where Bullfrogs used to be abundant in southwestern Ontario (Gillingwater unpublished data). Decreasing levels of precipitation in areas of southern Ontario during the past few decades decrease habitat quality. Over 70% of the world's amphibians are in decline from a multitude of threats (Hayes et al. 2010), including, but not limited to, collection, environmental pollutants, pathogens, habitat loss and modification, climate change, disease, and invasive species (Blaustein and Kiesecker 2002; Hayes et al. 2010; May 2010). Due to these threats, life history characteristics, and evidence of decline, we feel that a Bullfrog harvest would not be in the best conservation interests for this species. A comprehensive study of current threats must be conducted to acquire data to inform the protection of Bullfrog populations, and other wildlife that interact with this species. Removal of keystone species can alter community structure by reducing biodiversity and ecosystem services upon which many other species, including humans, depend.

Submission provided by the Canadian Herpetological Society (CHS)
CHS is made up of academics, researchers, conservation practitioners, naturalists, educators, and other individuals involved in the research and conservation of reptiles and amphibians in Canada.

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