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Evaluation of Disturbance Factors and Their Effect on Breeding Common Loons at Lake Umbagog National Wildlife Refuge, New Hampshire and Maine

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Abstract

Virtually any person exposed to American movies or television has likely heard the call of a common loon (*Gavia immer*). Its use as a sound prop has become ubiquitous in any scene related to the outdoors or the wilderness, even if the area filmed is in no way related to true loon habitat. The reason behind this is that the common loon and its haunting cries have come to symbolize the great outdoors. The sound of their call is meant to make the audience feel like the scene they are watching is in a remote area, far from the trappings of civilization, and, in our experience, it works. Hollywood has picked up on a sentiment held by many outdoor enthusiasts and is using it successfully. Unfortunately the southern range of the common loon is contracting and concern has been expressed over disturbance to breeding pairs by human activities, such as shoreline development, boating, and water-skiing, as well as possible contamination with lead, mercury, and other pollutants. If this alarming trend continues it may be that Hollywood movies will be the last place where a loon call can be heard in the United States. In the following chapters I will explore various threats to common loon populations. I will start in Chapter 1 with an evaluation of the potential effects of global warming on common loons within the North American breeding range. In Chapter 2 I review the available literature on wildlife disturbance and discuss some of the shortcomings and future research needs. I then go to a finer scale of study in Chapter 3 with a spatial analysis of disturbance factors and the effects on breeding common loons at Lake Umbagog National Wildlife Refuge. From there, in Chapter 4, I proceed to an analysis of specific behavioral responses exhibited by common loons in response to observed and experimentally imposed disturbance events. Finally, in Chapters 5 and 6, I briefly describe two natural disturbance events observed during our research, an immature bald eagle (*Haliaeetus leucocephalus*) predating a loon nest, and a loon nest defense of an aggressive American mink (*Nevison vison*).

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