Threat to the Great Northern Diver (Gavia immer) in North America: Mercury, Lead and Marine Oil Spills

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Many anthropogenic threats adversely impact the survival, health and reproductive success of the Great Northern Diver (Common Loon; Gavia immer). Three key threats have received much national attention and are discussed: mercury (Hg), lead (Pb) and marine oil spills.

Atmospheric Hg deposition is highest in the East and lowest in the West although this pattern may be changing. Areas within the continent with elevated Hg levels have been identified as biological hotspots. Thus, monitoring of loons in these regions is a high priority. Threshold levels have been established for egg, blood and feathers (1.3 ug/g, 3.0 ug/g, and 40.0 ug/g, respectively).

Poisoning resulting from the ingestion of Pb fishing tackle has been identified as a significant cause of Common Loon mortality throughout North America. It affects nerve impulse transmission, causing systemic paralysis. On a national (USA) level, the EPA has not moved any legislation forward to reduce the risk of Pb contamination to wildlife, so many states have passed legislation (NH, NY,ME, MA, VT, and WA) or are/have currently attempted it (WI) that would reduce or restrict its use.

Marine oil spills are a major threat to seabirds (i.e., divers). A historical review of offshore North American oil spills that have impacted loons is discussed including the Exxon Valdez (Prince William Sound, Alaska) and the BP Deepwater Horizon (northern Gulf of Mexico). In 1996, approximately 200 loons wintering off the Rhode Island coast were killed in the Cape Cod oil spill. On-site replacement of loons was deemed logistically impractical because loons do not breed in the state, so state and federal trustees made a precedent-setting decision that mitigation would entail the purchase of lake shoreline breeding habitat in New England. Progress has been made on many fronts which should ensure a bright future for Common Loon populations in North America.