Philip Harrison Hydronet 2013 Abstract

Title: **Home range and spatial behaviour of burbot *Lota lota* in a hydropower reservoir in Southeastern BC**

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Burbot, a holarctic distributed benthic piscivore, are valued for their contribution to winter recreational and First Nations fisheries. Burbot are commonly found in hydropower impoundments throughout Canada, however, they are threatened and endangered towards the southern edge of their range. Despite their threatened status and high value, little is known about burbot spatially distribute themselves in hydropower impoundments and how movement patterns may influence entrainment vulnerability. While burbot are generally thought of as sedentary, several authors have anecdotally observed pre-spawning fall migrations in lake environments. In this study we utilized a continuous monitoring telemetry array to monitor the horizontal movements of 47 burbot over two full years in Kinbasket Reservoir, British Columbia. Specifically, we modelled the influence of season and body size on home-range size and horizontal movement rates. Our results suggest burbot exhibit sedentary behaviour and low movement rates in the Kinbasket system. While a wide variety of individual movement patterns were observed, our results indicate that burbot do not make predictable seasonal migrations and exhibit high site fidelity to capture site. Our results, therefore, suggest that burbot closer to the forebay, may be more likely to encounter the forebay area and therefore have a greater entrainment vulnerability. Study findings further suggest that any burbot entrainment compensatory strategies, such as habitat rehabilitation, would be more effective if focused on areas closer to the forebay.