Tens of millions of marine birds use Canada’s Pacific coast for critical activities such as breeding, foraging, over wintering and migration, including multiple species listed under Canada’s Species at Risk Act. Despite the diversity and uniqueness of this marine bird community, significant knowledge gaps regarding the at-sea distribution and density of marine birds remain, particularly in remote waters. As a consequence, wildlife management, conservation, and commercial developments often proceed without the benefit of adequate at-sea marine bird information.

To address these issues, systematic ship-based marine bird line-transect surveys in the Great Bear Sea were completed from 2005-2008. Using an ensemble approach, we generated predictive models for 20 bird species/groups and subsequently combined this information in order to identify marine bird diversity ‘hotspots’ within the study area, with particular consideration for species at risk. A preliminary spatial risk assessment of marine birds and anthropogenic activities will also be discussed. Lastly, this research is provided against the backdrop of major energy development projects currently being proposed for Canada’s Pacific coast, and serves to underscore the need for high-quality environmental information in this region.