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* Email: savery@zoology.ubc.ca

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Northern fulmars as biological monitors of trends of plastic pollution in the eastern North Pacific

Stephanie Avery-Gomm [a,*], Patrick D. O'Hara [b], Lydia Kleine [c], Victoria Bowes [d], Laurie K. Wilson [e], Karen L. Barry [f]

[a] Zoology Department, University of British Columbia, Vancouver, BC, Canada V6T 1Z4
[b] Environment Canada – Canadian Wildlife Service, c/o Institute of Ocean Sciences, P.O. Box 6000, 9860 W Saanich Road, Sidney, BC, Canada V8L 4B2
[c] Slater Museum of Natural History, University of Puget Sound, 1500 N Warner, Tacoma, WA 98416, USA
[d] BC Ministry of Agriculture Animal Health Center, 1767 Angus Campbell Road, Abbotsford, BC, Canada V3G 2M3
[e] Environment Canada – Canadian Wildlife Service, 5421 Robertson Road, Delta, BC, Canada V4K 3N2
[f] Bird Studies Canada, 5421 Robertson Road, Delta, BC, Canada V4K 3N2

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ABSTRACT

Marine plastic debris is a global issue, which highlights the need for internationally standardized methods of monitoring plastic pollution. The stomach contents of beached northern fulmar (*Fulmarus glacialis*) have proven a cost-effective biomonitor in Europe. However, recent information on northern fulmar plastic ingestion is lacking in the North Pacific. We quantified the stomach contents of 67 fulmars from beaches in the eastern North Pacific in 2009–2010 and found that 92.5% of fulmars had ingested an average of 36.8 pieces, or 0.385 g of plastic. Plastic ingestion in these fulmars is among the highest recorded globally. Compared to earlier studies in the North Pacific, our findings indicate an increase in plastic ingestion over the past 40 years. This study substantiates the use of northern fulmar as biomonitors of plastic pollution in the North Pacific and suggests that the high levels of plastic pollution in this region warrant further monitoring.