

THE ATLANTIC PUFFIN POPULATION SIZE OF THE WESTMAN ISLANDS, ICELAND

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An estimate of the Atlantic puffin (*Fratercula arctica*) breeding population in the Westman Islands archipelago (Hansen, 1995) is presented. The preliminary estimate is $\approx 1,300,000$ burrows (N). The estimate is calculated as $N = A \times C_A \times D$, where A is the two-dimensional surface area (m²) of the puffin colonies, C_A is area correction factor due to slope and landscape, and D is burrow density (burrows⁻¹.m²). Colonies were readily identifiable from aerial photographs (taken at either 1220m or 1830m HOSL, occasionally 610m). After digitizing, A was estimated in the program Microstation[™]. C_A is calculated as the ratio of A (2D) to the 3D surface area. Both variables were estimated in the sub-colony Stórhöfði, Heimaey, utilizing the program ArcView[™]. D was estimated in 9175m² within puffin colonies: 64 randomly located 25m² squares (1600m²) and in 9 transects (7575m²). Pending final analysis includes randomization- stratification methodology to reduce the variance of the population estimate.

References

Hansen E.S. 1995. Habitat selection of the Atlantic Puffin *Fratercula arctica*: In the perspective of a functional constraint by aerodynamical 'take-off' capacity and the geometrical aspects of burrowing. B.S. Honours thesis, University of Iceland. 133p. [www.nattsud.is]