

**SUPPLEMENTARY MATERIAL:**  
 TABLE S1. Summary of colouration abnormalities in Atlantic Puffins (ATPU), Common Murres (COMU), and Thick-billed Murres (TBMU). Terminology follows van Grouw (2013).

Species	Date	Location collected/observed	Original description	Technical description	Specimen notes/ museum catalogue no.*	Reference
ATPU	May 2009	Isles of Scilly, UK	White puffin	Progressive greying	Photographed	Harris and Wanless (2011)
ATPU	9 July 1874	Faroe Islands	Albino	Progressive greying	NHMUK 1886.9.13.25	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	11 July 1878	Faroe Islands	Albino	Progressive greying	NHMUK 1886.9.13.26	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	16 July 1878	Faroe Islands	Albino	Progressive greying	NHMUK 1886.9.13.27	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	26 July 1874	Faroe Islands	Albino	Progressive greying	NHMUK 1886.9.13.28	H. van Grouw (pers. comm.); Lockley (1953)
ATPU		Faroe Islands	Brown	Brown	NHMUK 1886.9.13.29	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	1 August 1873	Faroe Islands	Brown	Brown	NHMUK 1886.9.13.56	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	June 1893	Faroe Islands	Albino	Progressive greying	NHMUK 1894.11.22.3	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	22 June 1886	Thorshavn, Faroe Islands	Albino	Progressive greying	NHMUK 1894.11.22.4	H. van Grouw (pers. comm.); Lockley (1953)
ATPU	5 June 2012	Gull Island, NL	Grey head	Somatic mutation?	Photographed	This paper
ATPU	13 June 2002	Machias Seal Island, NB	White puffin	Progressive greying	Photographed	This paper
ATPU	June 2004	Machias Seal Island, NB	White puffin	Progressive greying	Photographed	This paper
ATPU	20 August 2009	Grand Manan basin, NB	White puffin	Progressive greying	Photographed	This paper
ATPU	14 May 2013	Machias Seal Island, NB	White flecks on collar/back	Progressive greying	Photographed	This paper
COMU	29 August 1949	Dillon Beach, California, USA	Albino	Melanistic	Specimen lost	Arnold (1950)
COMU		Yorkshire, UK	All black			Clarke (1913)
COMU			Albino			Deane (1876)
COMU	26 June 1976	Great Saltee Island, Ireland	Leucistic	Brown		Kelly (1980), van Grouw <i>et al.</i> (2011)
COMU	30 May 1911	Farallon Islands, California, USA	All black	Melanistic	CAS 18072	Loomis (1918)
COMU			White claws, yellow bill and feet	Progressive greying		Newton (1877)
COMU	19 February 1931	Comox, BC	Partial melanism	Melanistic	MVZ 82123	Storer (1952)
COMU		Iceland	White crown, melanin missing from maxilla	Progressive greying	AMNH 748006	Storer (1952)
COMU	2 August 2011	Cabot Island, NL	Missing pigment on feet, part of bill	Progressive greying	Photographed	This paper
COMU	9 May 1905	Funk Island, NL	Albino chick			Tueck (1961)
COMU	9 May 1905	Funk Island, NL	Partial albino chick			Tueck (1961)
COMU	11 May 1905	Funk Island, NL	Albino chick			Tueck (1961)

TABLE S1. Summary of colouration abnormalities in Atlantic Puffins (ATPU), Common Murres (COMU), and Thick-billed Murres (TBMU). Terminology follows van Grouw (2013).  
(continued)

Species	Date	Location collected/observed	Original description	Technical description	Specimen museum catalogue no. *	Reference	notes/
COMU	11 May 1905	Funk Island, NL	Albino chick			Tuck (1961)	
COMU	11 May 1905	Funk Island, NL	Albino chick			Tuck (1961)	
COMU	11 June 2010	Bempton Cliffs, UK	Dilution	Dilution		van Grouw <i>et al.</i> (2011)	
COMU	24 June 1896	Buckton, UK	Melanistic	Melanistic	NHMUK 1939.12.9.3690	van Grouw <i>et al.</i> (2011)	
COMU	February 1880	Helgoland, Germany	Grizzle	Progressive greying?		van Grouw <i>et al.</i> (2011)	
COMU	2009–2011	Hornoy, Norway	Brown	Brown		van Grouw <i>et al.</i> (2011)	
COMU	10 August 2008	Monterey Bay, California, USA	Brown	Brown		van Grouw <i>et al.</i> (2011)	
COMU	27 October 1996	Monterey Bay, California, USA	Leucistic	Partial leucism		van Grouw <i>et al.</i> (2011)	
COMU	4 December 1898	Scarborough Harbour, Yorkshire, UK	Brown	Brown	NHMUK 1939.12.9.3692	van Grouw <i>et al.</i> (2011)	
COMU	20 June 2011	Stonehaven, Scotland	Brown	Brown		van Grouw <i>et al.</i> (2011)	
COMU	1996–1997	Sumburgh Head, Scotland	Leucistic	Partial leucism		van Grouw <i>et al.</i> (2011)	
COMU	Before 1911	Probably Helgoland, Germany	Brown	Brown	NHMUK 1996.41.2365	van Grouw <i>et al.</i> (2011); H. Van Grouw (pers. comm.)	
TBMU	13 July 1848	Iceland	Yellowish-red feet and bill	Progressive greying		Krüper (1857)	
TBMU	June/July 1974	Franz Josef Land, Russia	Completely white			Reinsch (1983)	
TBMU	11 June 1967	St. Lawrence Island, Alaska, USA	Melanistic	Melanistic		Sealy (1969)	
TBMU		Greenland	Albino	Progressive greying	AMNH 3946	Storer (1952)	
TBMU	20 November 1885	Greenland	Albino	Brown	AMNH 747964	Storer (1952)	
TBMU		Greenland	Albino	Dilution	AMNH 747970	Storer (1952)	
TBMU	23 July 1926	Kangamiut, Greenland	White patches, feet and bill without melanin	Progressive greying	AMNH 747966	Storer (1952)	
TBMU	21 October 1931	Red Bay, NL	Albino	Brown (maybe dark ino)	UMMZ 68403	Storer (1952)	
TBMU		Shetland Islands, UK	Albino	Dilution	AMNH 747971	Storer (1952)	
TBMU		Tjornes, Iceland	85% white	Progressive greying	AMNH 748007	Storer (1952)	
TBMU	12 March 1951	Hants Harbour, NL	Leucistic	Dilution	CMNAV 37719	This paper	
TBMU	31 January 1952	Trinity Bay, NL	Melanistic	Melanistic	CMNAV 38151	This paper; Tuck (1961)	
TBMU		Newfoundland	Albino			Tuck (1961)	
TBMU		Newfoundland	Albino			Tuck (1961)	
TBMU		Newfoundland	Albino			Tuck (1961)	
TBMU		Newfoundland	Partial albino			Tuck (1961)	
TBMU		Newfoundland	Partial albino			Tuck (1961)	
TBMU		Newfoundland	Partial albino			Tuck (1961)	

\*Museums are American Museum of Natural History (AMNH), Natural History Museum UK (NHMUK), California Academy of Sciences (CAS), Canadian Museum of Nature (CMNAV), Museum of Vertebrate Zoology (MVZ), and University of Michigan Museum of Zoology (UMMZ).