

United States Department of the Interior

FISH AND WILDLIFE SERVICE Division of Migratory Bird Management Branch of Assessment and Decision Support 11510 American Holly Drive Laurel, Maryland, 20708-4016

MEMORANDUM

TO: Mark Seamans

FROM: Joshua Dooley

DATE: 18 August 2022

SUBJECT: Atlantic Population Canada Goose Integrated Population Model 2023 Abundance Prediction

In fall 2020, the Atlantic Flyway Council adopted the use of an integrated population model (IPM) to inform harvest management decisions for Atlantic Population Canada geese (AP CAGO; Dooley 2019). The AP CAGO harvest strategy considers setting hunting regulations based on the IPM out-year prediction of breeding pairs. The AP CAGO IPM predicted 2023 median number of breeding pairs was 180,500 (95% CI = 124,500–249,500; Figure 1, Table 2).

Input data included in the AP CAGO IPM were provided in Table 1. Aerial surveys and banding operations resumed in 2022 after not being conducted in 2020 and 2021 due to the COVID-19 pandemic. The IPM predicted adult harvest probability for the 2022–23 hunting season is 0.034 (95% CI = 0.026–0.045; Figure 1, Table 2). The IPM predicted August 2022 juvenile:adult age ratio is 1.36 (95% CI = 1.10–1.62), which is similar to the observed 1997–2019 average (1.38). Average temperature during May 2022 at Kuujjuaq, Québec was 1.3°C ($\bar{x}_{1997-2021}$ = 1.5°C), and the proportion of snow/ice cover on the Ungava Peninsula on 15 June 2022 was 0.12 ($\bar{x}_{1997-2021}$ = 0.41). In last year's memo, the out-year (2022) median breeding pair prediction from the IPM was 153,000 (95% CI = 92,000–235,000), which was -6.5% lower than the observed 2022 aerial survey breeding pair estimate of 163,714 ± 16,711 (SE; Harvey et al. 2022).

LITERATURE CITED

- Dooley, J. L. 2019. Atlantic Population Canada Goose Integrated Population Model. Unpubl. Report to Atlantic Flyway Technical Section. U. S. Fish and Wildlife Service, Laurel, MD. November 2019.
- Harvey, W., C. Lepage, J. Lefebvre, and R. Spangler. 2022. A breeding pair survey of Canada Geese in northern Québec - 2022. Maryland Department of Natural Resources and Canadian Wildlife Service, Québec Region. Report to Atlantic Flyway Technical Section. July 2022.



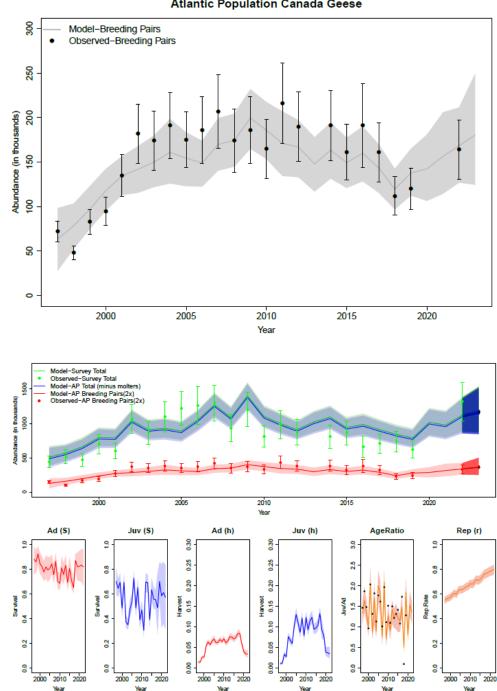
Table 1. Input data included in the Atlantic Population Canada goose integratedpopulation model and summarized band-recovery data, 1997–2022.

Harvest Regulations (days, bag)

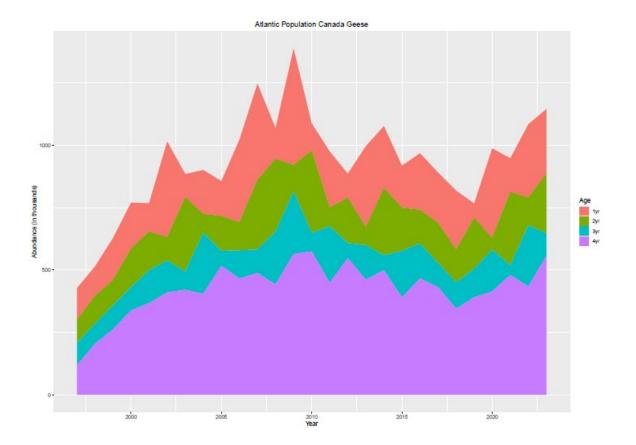
	(in thousands) age 1		Banding age ratio	<u>C1</u>	nes.	MidAt	1/NE	Can	ada	To	otal		
Year	Breeding Pairs	Total	Juv:Ad	MayTemp	Prop. SnowIce	d	b	d	b	d	b	d	b
1997	72	443	1.47	1.5	0.25	0	0	0	0	0	0	0	0
1998	48	513	1.86	2.9	0.09	0	0	0	0	0	0	0	0
1999	83	468	1.48	2.8	0.61	6	1	15	1	20	3	41	5
2000	95	694	0.96	0.8	0.83	6	1	15	1	20	3	41	5
2001	135	602	2.03	4.8	0.07	30	1	30	2	30	5	90	8
2002	182	1068	1.31	-1.1	0.65	45	1	45	2	45	5	135	8
2003	174	864	1.82	4.7	0.18	45	1	45	2	45	5	135	8
2004	191	1095	1.13	-0.6	0.76	45	1.5	45	3	45	5	135	9.5
2005	175	1218	1.77	4.7	0.08	45	2	45	3	45	5	135	10
2006	186	1262	1.61	5.3	0.26	45	2	45	3	45	5	135	10
2007	207	1296	1.02	-1.7	0.84	45	2	45	3	45	5	135	10
2008	174	933	1.97	5.5	0.09	45	2	45	3	45	5	135	10
2009	186	1202	1.11	-1.9	0.90	45	2	45	3	45	5	135	10
2010	165	810	1.52	1.2	0.28	45	2	45	3	60	5	150	10
2011	216	980	1.1	-1.0	0.46	45	2	45	3	60	5	150	10
2012	190	871	1.5	1.9	0.10	50	2	50	3	60	5	160	10
2013	I	Η	1.22	0.8	0.28	50	2	50	3	60	5	160	10
2014	191	807	1.32	1.7	0.13	50	2	50	3	60	5	160	10
2015	161	864	1.41	1.5	0.34	50	2	50	3	60	5	160	10
2016	191	663	1.08	0.9	0.45	50	2	50	3	60	5	160	10
2017	161	705	1.73	2.1	0.18	50	2	50	3	60	5	160	10
2018	112	738	0.1	-5.1	0.99	50	2	50	3	60	5	160	10
2019	120	622	1.28	4.3	0.18	30	1	30	2	60	5	120	8
2020	I	Η	Η	-0.8	0.94	30	1	30	2	30	3	90	6
2021	I	Η	Η	3.4	0.42	30	1	30	1	30	3	90	5
2022	164	1316	I	1.3	0.12	30	1	30	1	30	3	90	5

ADULT																										
Year	Bandings						2002			2005		2007	2008					2013							2020	2021
1997	1299	6	6	14	15	28	29	16	19	17	14	7	6	8	5	1	2	0	2	0	3	1	0	0	0	0
1998	1981	0	17	21	25	44	47	18	33	36	11	14	9	11	14	8	6	3	1	3	0	1	0	0	0	0
1999	2987	0	0	43	45	97	65	60	48	40	38	18	27	19	11	8	5	6	2	5	4	2	0	1	1	0
2000	2312	0	0	0	34	69	63	42	39	37	24	19	16	21	13	9	5	4	3	2	3	0	2	0	0	0
2001	2706	0	0	0	0	79	83	72	61	56	37	24	28	22	15	18	10	15	4	3	4	3	1	1	0	1
2002	3098	0	0	0	0	0	137	98	80	67	49	35	30	33	23	12	19	18	14	3	4	6	1	1	0	0
2003	2064	0	0	0	0	0	0	71	73	57	42	32	40	23	21	13	11	9	9	5	8	2	3	2	1	1
2004	1119	0	0	0	0	0	0	0	55	43	25	20	26	16	26	7	7	2	8	2	5	3	0	1	0	0
2005	1127	0	0	0	0	0	0	0	0	61	34	30	28	23	18	6	12	8	6	6	5	4	4	0	0	0
2006	2911	0	0	0	0	0	0	0	0	0	121	84	92	59	52	32	25	31	23	24	16	7	8	6	2	3
2007	2106	0	0	0	0	0	0	0	0	0	0	97	64	56	44	23	20	18	19	17	14	13	4	6	3	1
2008	2187	0	0	0	0	0	0	0	0	0	0	0	116	59	71	24	45	31	26	13	14	19	7	5	3	1
2009	1412	0	0	0	0	0	0	0	0	0	0	0	0	63	39	27	25	21	18	13	7	7	4	7	3	2
2010	1825	0	0	0	0	0	0	0	0	0	0	0	0	0	98	34	32	44	42	22	23	13	6	5	7	7
2011	1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	36	30	25	22	10	14	13	6	4	3
2012	1416	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	49	45	25	26	25	12	10	13	3
2013	1720	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	68	54	39	31	24	19	9	6
2014	1773	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	49	53	43	22	27	14	9
2015	1317	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	50	40	22	30	12	13
2016	1928	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	75	60	27	24	15
2017	1502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	45	30	27	23 58
2018	3722	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	276	163	75	
2019	1332	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	40	32
2020 2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JUVENILE	:																									
JUVENILE Year	Bandings	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
		1997 12	1998 12	1999 16	2000 7	2001 22	2002 30	2003 17	2004 12	2005 18	2006 13	2007 10	2008 8	2009 4	2010 10	2011 3	2012 2	2013 3	2014 1	2015 3	2016 1	2017 1	2018 0	2019 1	2020 0	2021 0
Year	Bandings																									
Year 1997	Bandings 1676	12	12	16	7	22	30	17	12	18	13	10	8	4	10	3	2	3	1	3	1	1	0	1	0	0
Year 1997 1998	Bandings 1676 3502	12 0	12 28	16 41	7 28	22 46	30 44	17 37	12 35	18 32	13 29	10 26	8 16	4 12	10 18	3 12	2 9	3 11	1 6	3 3	1 5	1 0	0 1	1 0	0 0	0 0
Year 1997 1998 1999	Bandings 1676 3502 4303	12 0 0	12 28 0	16 41 84	7 28 54	22 46 82	30 44 71	17 37 46	12 35 65	18 32 47	13 29 25	10 26 30	8 16 28	4 12 19	10 18 12	3 12 9	2 9 14	3 11 9	1 6 11	3 3 1	1 5 2	1 0 6	0 1 3	1 0 3	0 0 0	0 0 0
Year 1997 1998 1999 2000	Bandings 1676 3502 4303 2214	12 0 0 0	12 28 0 0	16 41 84 0	7 28 54 27	22 46 82 39	30 44 71 31	17 37 46 16	12 35 65 19	18 32 47 21	13 29 25 18	10 26 30 12	8 16 28 10	4 12 19 7	10 18 12 8	3 12 9 5	2 9 14 2	3 11 9 4	1 6 11 5	3 3 1 6	1 5 2 2	1 0 6 2	0 1 3 0	1 0 3 1	0 0 0 1	0 0 0
Year 1997 1998 1999 2000 2001	Bandings 1676 3502 4303 2214 5389	12 0 0 0 0	12 28 0 0 0	16 41 84 0 0	7 28 54 27 0	22 46 82 39 244	30 44 71 31 166	17 37 46 16 84	12 35 65 19 79	18 32 47 21 82	13 29 25 18 45	10 26 30 12 49	8 16 28 10 38	4 12 19 7 39	10 18 12 8 35	3 12 9 5 23	2 9 14 2 20	3 11 9 4 19	1 6 11 5 14	3 1 6 14	1 5 2 2 12	1 0 6 2 11	0 1 3 0 3	1 0 3 1 3	0 0 1 2	0 0 0 0
Year 1997 1998 1999 2000 2001 2002	Bandings 1676 3502 4303 2214 5389 4007	12 0 0 0 0	12 28 0 0 0 0	16 41 84 0 0 0	7 28 54 27 0 0	22 46 82 39 244 0 0 0	30 44 71 31 166 172	17 37 46 16 84 63	12 35 65 19 79 54 106 175	18 32 47 21 82 36	13 29 25 18 45 27 50 28	10 26 30 12 49 15 44 30	8 16 28 10 38 26	4 12 19 7 39 21 35 20	10 18 12 8 35 18 24 15	3 12 9 5 23 8	2 9 14 2 20 8	3 9 4 19 7 16 6	1 6 11 5 14 3 13 7	3 1 6 14 3 12 5	1 5 2 12 4 8 9	1 6 2 11 8 5 5	0 1 3 0 3 2	1 0 3 1 3	0 0 1 2 0 0 2	0 0 0 0 1 1
Year 1997 1998 1999 2000 2001 2002 2003	Bandings 1676 3502 4303 2214 5389 4007 6185	12 0 0 0 0 0 0	12 28 0 0 0 0 0	16 41 84 0 0 0 0	7 28 54 27 0 0 0	22 46 82 39 244 0 0	30 44 71 31 166 172 0	17 37 46 16 84 63 195	12 35 65 19 79 54 106	18 32 47 21 82 36 68	13 29 25 18 45 27 50	10 26 30 12 49 15 44	8 16 28 10 38 26 33	4 12 19 7 39 21 35	10 18 12 8 35 18 24	3 12 9 5 23 8 13	2 9 14 2 20 8 13	3 11 9 4 19 7 16	1 6 11 5 14 3 13	3 1 6 14 3 12	1 5 2 12 4 8	1 0 2 11 8 5	0 1 3 0 3 2 6	1 0 3 1 3 1 3	0 0 1 2 0	0 0 0 0 0 1
Year 1997 1998 1999 2000 2001 2002 2003 2003	Bandings 1676 3502 4303 2214 5389 4007 6185 2430	12 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0	16 41 84 0 0 0 0 0	7 28 54 27 0 0 0 0	22 46 82 39 244 0 0 0	30 44 71 31 166 172 0 0	17 37 46 16 84 63 195 0	12 35 65 19 79 54 106 175	18 32 47 21 82 36 68 59	13 29 25 18 45 27 50 28	10 26 30 12 49 15 44 30	8 28 10 38 26 33 26	4 12 19 7 39 21 35 20	10 18 12 8 35 18 24 15	3 12 9 5 23 8 13 8	2 9 14 2 20 8 13 9	3 9 4 19 7 16 6	1 6 11 5 14 3 13 7	3 1 6 14 3 12 5	1 5 2 12 4 8 9	1 6 2 11 8 5 5	0 1 3 0 3 2 6 5	1 3 1 3 1 3 4	0 0 1 2 0 0 2	0 0 0 0 1 1
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909	12 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0	22 46 82 39 244 0 0 0 0	30 44 71 31 166 172 0 0 0	17 37 46 16 84 63 195 0 0	12 35 65 19 79 54 106 175 0	18 32 47 21 82 36 68 59 338	13 29 25 18 45 27 50 28 103	10 26 30 12 49 15 44 30 73	8 16 28 10 38 26 33 26 54	4 19 7 39 21 35 20 37	10 18 12 8 35 18 24 15 42	3 9 5 23 8 13 8 26	2 9 14 2 20 8 13 9 22	3 11 9 4 19 7 16 6 15	1 6 11 5 14 3 13 7 11	3 1 6 14 3 12 5 8	1 5 2 12 4 8 9 7	1 0 2 11 8 5 5 13	0 1 3 0 3 2 6 5 6	1 0 3 1 3 1 3 4 6	0 0 1 2 0 0 2 1	0 0 0 0 1 1 1 1 2
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909 4674	12 0 0 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0 0	22 46 82 39 244 0 0 0 0 0	30 44 71 31 166 172 0 0 0 0 0	17 37 46 16 84 63 195 0 0 0	12 35 65 19 79 54 106 175 0 0	18 32 47 21 82 36 68 59 338 0	13 29 25 18 45 27 50 28 103 324	10 26 30 12 49 15 44 30 73 197	8 16 28 10 38 26 33 26 54 111	4 12 19 7 39 21 35 20 37 82	10 18 12 8 35 18 24 15 42 72	3 12 9 5 23 8 13 8 26 42	2 9 14 2 20 8 13 9 22 38	3 11 9 4 19 7 16 6 15 29	1 6 11 5 14 3 13 7 11 18	3 1 6 14 3 12 5 8 22	1 5 2 12 4 8 9 7 12	1 0 2 11 8 5 5 13 14	0 1 3 0 3 2 6 5 6 12	1 0 3 1 3 1 3 4 6 18	0 0 1 2 0 0 2 1 2 0 8	0 0 0 0 1 1 1 1
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909 4674 2144	12 0 0 0 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0 0 0	22 46 82 39 244 0 0 0 0 0 0	30 44 71 31 166 172 0 0 0 0 0	17 37 46 16 84 63 195 0 0 0 0 0	12 35 65 19 79 54 106 175 0 0 0	18 32 47 21 82 36 68 59 338 0 0	13 29 25 18 45 27 50 28 103 324 0	10 26 30 12 49 15 44 30 73 197 118	8 16 28 10 38 26 33 26 54 111 66	4 12 19 7 39 21 35 20 37 82 33	10 18 12 8 35 18 24 15 42 72 23	3 12 9 5 23 8 13 8 26 42 13	2 9 14 2 20 8 13 9 22 38 10	3 11 9 4 19 7 16 6 15 29 13	1 6 11 5 14 3 13 7 11 18 11	3 1 6 14 3 12 5 8 22 8	1 5 2 12 4 8 9 7 12 8	1 0 2 11 8 5 5 13 14 13	0 1 3 0 3 2 6 5 6 12 6	1 0 3 1 3 4 6 18 5	0 0 1 2 0 0 2 1 2 0	0 0 0 0 1 1 1 1 2
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909 4674 2144 4300	12 0 0 0 0 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0 0 0 0	22 46 82 39 244 0 0 0 0 0 0 0 0	30 44 71 31 166 172 0 0 0 0 0 0	17 37 46 16 84 63 195 0 0 0 0 0 0 0	12 35 65 19 79 54 106 175 0 0 0 0	18 32 47 21 82 36 68 59 338 0 0 0	13 29 25 18 45 27 50 28 103 324 0 0	10 26 30 12 49 15 44 30 73 197 118 0	8 16 28 10 38 26 33 26 54 111 66 346	4 12 19 7 39 21 35 20 37 82 33 183	10 18 12 8 35 18 24 15 42 72 23 80	3 12 9 5 23 8 13 8 26 42 13 44	2 9 14 2 20 8 13 9 22 38 10 37	3 11 9 4 19 7 16 6 15 29 13 40	1 6 11 5 14 3 13 7 11 18 11 36	3 1 6 14 3 12 5 8 22 8 18 5 14	1 5 2 12 4 8 9 7 12 8 18	1 0 2 11 8 5 5 13 14 13 18	0 1 3 0 3 2 6 5 6 12 6 12	1 0 3 1 3 4 6 18 5 8	0 0 1 2 0 0 2 1 2 0 8	0 0 0 1 1 1 2 4 1 2
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909 4674 2144 4300 1555	12 0 0 0 0 0 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0 0 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0 0 0 0 0 0 0 0	22 46 82 39 244 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30 44 71 31 166 172 0 0 0 0 0 0 0	17 37 46 16 84 63 195 0 0 0 0 0 0 0	12 35 65 19 79 54 106 175 0 0 0 0 0	18 32 47 21 82 36 68 59 338 0 0 0 0	13 29 25 18 45 27 50 28 103 324 0 0 0 0 0 0	10 26 30 12 49 15 44 30 73 197 118 0 0	8 16 28 10 38 26 33 26 54 111 66 346 0	4 12 19 7 39 21 35 20 37 82 33 183 67	10 18 12 8 35 18 24 15 42 72 23 80 32	3 12 9 5 23 8 13 8 26 42 13 44 22	2 9 14 2 20 8 13 9 22 38 10 37 11	3 11 9 4 19 7 16 6 15 29 13 40 15 46 12	1 6 11 5 14 3 13 7 11 18 11 36 15	3 1 6 14 3 12 5 8 22 8 18 5 14 7	1 5 2 12 4 8 9 7 12 8 18 5	1 0 2 11 8 5 5 13 14 13 18 5	0 1 3 0 3 2 6 5 6 12 6 12 1 9 1	1 0 3 1 3 4 6 18 5 8 3	0 0 1 2 0 2 1 2 0 8 3 3 1	0 0 0 1 1 1 1 2 4 1 2 1
Year 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010	Bandings 1676 3502 4303 2214 5389 4007 6185 2430 3909 4674 2144 4300 1555 2774	12 0 0 0 0 0 0 0 0 0 0 0 0 0	12 28 0 0 0 0 0 0 0 0 0 0 0 0	16 41 84 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 28 54 27 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22 46 82 39 244 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30 44 71 31 166 172 0 0 0 0 0 0 0 0 0	17 37 46 84 63 195 0 0 0 0 0 0 0 0 0	12 35 65 19 79 54 106 175 0 0 0 0 0 0	18 32 47 21 82 36 68 59 338 0 0 0 0 0 0 0	13 29 25 18 45 27 50 28 103 324 0 0 0 0 0 0	10 26 30 12 49 15 44 30 73 197 118 0 0 0	8 16 28 10 38 26 33 26 54 111 66 346 0 0 0 0	4 12 19 7 39 21 35 20 37 82 33 183 67 0	10 18 12 8 35 18 24 15 42 72 23 80 32 251	3 9 5 23 8 13 8 26 42 13 44 22 82	2 9 14 2 20 8 13 9 22 38 10 37 11 46	3 11 9 4 19 7 16 6 15 29 13 40 15 46 12 97	1 6 11 5 14 3 13 7 11 18 11 36 15 30	3 1 6 14 3 12 5 8 22 8 18 5 14	1 5 2 12 4 8 9 7 12 8 18 5 17	1 6 2 11 8 5 5 13 14 13 18 5 13	0 1 3 0 3 2 6 5 6 12 6 12 1 9	1 0 3 1 3 4 6 18 5 8 3 9	0 0 1 2 0 2 1 2 0 8 3 3 1 5	0 0 0 0 1 1 1 1 2 4 1 2 1 4
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Figure 1 and Table 2. Atlantic Population Canada goose IPM posterior estimates (median/95% CI [line/shading]) of breeding pairs (top plot), total and breeding abundance indices (with 2023 out-year prediction in darker shading), other model parameters (middle plot; ad=adult; juv=juvenile; S=survival; h=harvest rate; AgeRatio=juvenile:adult at banding; r=reporting rate), and abundance indices by age class (bottom plot). Observed data values are included as points (bars=95% CL).



Atlantic Population Canada Geese



		Abundance						Su	rvival			Ha	Juv:Adult			
Year		Breeding Pairs (2X)			Total		Adult		Juvenile		Adult		Juvenile	Age Ratio		
	median	95% CI	median	95% CI	median	95% CI	median	95% CI	median	95% CI	median	95% CI	median	95% CI	median	95% CI
1997	63,500	(28,000-98,500)	127,000	(56,000-197,000)	507,000	(386,000-666,000)	0.882	(0.760-0.986)	0.703	(0.599-0.810)	0.015	(0.011-0.019)	0.011	(0.008-0.015)	1.33	(1.08-1.59)
1998	78,500	(52,500-103,500)	157,000	(105,000-207,000)	569,000	(458,000-698,025)	0.861	(0.770-0.955)	0.647	(0.578-0.723)	0.015	(0.012-0.019)	0.012	(0.009-0.017)	1.65	(1.37-1.98)
1999	97,000	(75,000-123,000)	194,000	(150,000-246,000)	658,000	(546,000-792,000)	0.926	(0.844-0.988)	0.694	(0.624-0.769)	0.027	(0.024-0.032)	0.034	(0.028-0.040)	1.36	(1.13-1.64)
2000	118,000	(95,500-142,500)	236,000	(191,000-285,000)	795,000	(670,000-939,000)	0.848	(0.767-0.935)	0.486	(0.419-0.562)	0.027	(0.024-0.031)	0.028	(0.022-0.034)	1.00	(0.79-1.18)
2001	134,500	(113,000-156,500)	269,000	(226,000-313,000)	790,000	(670,000-927,000)	0.823	(0.744-0.906)	0.696	(0.633-0.760)	0.054	(0.049-0.060)	0.077	(0.068-0.086)	2.05	(1.73-2.43)
2002	142,000	(115,500-168,000)	284,000	(231,000-336,000)	1,042,000	(898,000-1,201,000)	0.779	(0.706-0.864)	0.374	(0.329-0.427)	0.064	(0.058-0.070)	0.068	(0.059-0.077)	0.88	(0.72-1.06)
2003	150,000	(122,000-180,000)	300,000	(244,000-360,000)	909,000	(781,000-1,054,000)	0.819	(0.727-0.914)	0.352	(0.313-0.398)	0.057	(0.052-0.064)	0.060	(0.053-0.068)	1.71	(1.07-2.07)
2004	161,000	(126,000-198,500)	322,000	(252,000-397,000)	929,000	(794,000-1,077,000)	0.796	(0.700-0.900)	0.478	(0.410-0.556)	0.066	(0.059-0.073)	0.102	(0.089-0.115)	0.90	(0.75-1.11)
2005	154,500	(123,000-183,500)	309,000	(246,000-367,000)	889,000	(761,000-1,030,000)	0.807	(0.719-0.898)	0.536	(0.480-0.599)	0.071	(0.063-0.079)	0.131	(0.118-0.145)	2.01	(1.67-2.36)
2006	149,000	(122,500-174,000)	298,000	(245,000-348,000)	1,053,000	(918,000-1,199,000)	0.845	(0.766-0.919)	0.730	(0.668-0.782)	0.062	(0.056-0.068)	0.110	(0.099-0.122)	1.82	(1.26-2.13)
2007	170,000	(140,500-199,500)	340,000	(281,000-399,000)	1,271,000	(1,110,000-1,446,000)	0.758	(0.690-0.837)	0.488	(0.421-0.563)	0.063	(0.057-0.069)	0.087	(0.075-0.101)	0.75	(0.58-0.88)
2008	174,500	(145,000-204,500)	349,000	(290,000-409,000)	1,087,000	(949,000-1,245,000)	0.865	(0.778-0.931)	0.652	(0.582-0.724)	0.070	(0.063-0.077)	0.122	(0.110-0.134)	2.09	(1.56-2.38)
2009	199,500	(165,000-232,000)	399,000	(330,000-464,000)	1,401,500	(1,227,000-1,595,000)	0.703	(0.648-0.783)	0.390	(0.326-0.468)	0.065	(0.059-0.072)	0.079	(0.066-0.092)	0.71	(0.54-0.83)
2010	186,000	(153,500-217,500)	372,000	(307,000-435,000)	1,102,000	(965,000-1,259,000)	0.687	(0.631-0.772)	0.472	(0.410-0.546)	0.071	(0.065-0.078)	0.124	(0.111-0.138)	1.28	(1.07-1.53)
2011	171,000	(134,500-207,000)	342,000	(269,000-414,000)	998,000	(869,000-1,152,000)	0.812	(0.715-0.906)	0.307	(0.257-0.367)	0.062	(0.055-0.069)	0.093	(0.080-0.109)	0.92	(0.72-1.08)
2012	167,000	(133,000-197,000)	334,000	(266,000-394,000)	909,000	(793,000-1,044,025)	0.758	(0.681-0.849)	0.698	(0.619-0.767)	0.066	(0.059-0.073)	0.115	(0.101-0.130)	1.43	(1.08-1.64)
2013	148,000	(117,000-178,000)	296,000	(234,000-356,000)	1,019,000	(877,000-1,178,000)	0.833	(0.748-0.910)	0.693	(0.610-0.761)	0.077	(0.070-0.085)	0.124	(0.110-0.139)	1.22	(0.99-1.45)
2014	163,500	(131,500-194,500)	327,000	(263,000-389,000)	1,092,000	(942,000-1,258,000)	0.694	(0.635-0.780)	0.394	(0.334-0.464)	0.076	(0.069-0.084)	0.095	(0.083-0.107)	1.34	(0.95-1.55)
2015	149,500	(121,000-177,500)	299,000	(242,000-355,000)	940,000	(809,975-1,089,000)	0.808	(0.716-0.899)	0.634	(0.544-0.731)	0.071	(0.064-0.079)	0.098	(0.085-0.111)	1.23	(0.88-1.41)
2016	160,000	(128,500-190,000)	320,000	(257,000-380,000)	983,000	(842,000-1,142,000)	0.710	(0.646-0.794)	0.560	(0.480-0.652)	0.074	(0.067-0.082)	0.104	(0.091-0.118)	1.14	(0.89-1.32)
2017	143,500	(115,500-170,000)	287,000	(231,000-340,000)	909,000	(775,000-1,057,000)	0.652	(0.608-0.715)	0.555	(0.481-0.637)	0.084	(0.076-0.092)	0.133	(0.119-0.147)	1.48	(1.26-1.80)
2018	119,500	(97,000-142,500)	239,000	(194,000-285,000)	841,000	(718,000-980,000)	0.873	(0.787-0.928)	0.489	(0.280-0.768)	0.085	(0.078-0.093)	0.093	(0.073-0.117)	0.50	(0.40-0.59)
2019	138,000	(112,500-165,000)	276,000	(225,000-330,000)	790,000	(669,000-927,000)	0.821	(0.714-0.936)	0.702	(0.564-0.858)	0.060	(0.054-0.067)	0.080	(0.069-0.092)	1.86	(1.53-2.20)
2020	142,500	(106,500-181,000)	285,000	(213,000-362,000)	1,015,000	(832,000-1,223,000)	0.825	(0.705-0.949)	0.585	(0.326-0.843)	0.041	(0.035-0.048)	0.039	(0.030-0.050)	0.81	(0.66-0.98)
2021	156,500	(114,500-206,000)	313,000	(229,000-412,000)	976,000	(793,000-1,186,000)	0.834	(0.698-0.965)	0.612	(0.361-0.861)	0.035	(0.029-0.042)	0.038	(0.027-0.052)	1.54	(1.27-1.85)
2022	168,500	(127,000-211,512)	337,000	(254,000-423,025)	1,121,000	(881,000-1,379,000)	0.821	(0.668-0.963)	0.574	(0.317-0.832)	0.034	(0.026-0.045)	0.035	(0.024-0.051)	1.36	(1.10-1.62)
2023	180,500	(124,500-249,500)	361,000	(249,000-499,000)												