

APPENDIX 1

HENDERSON & SEALY – MARBLED MURRELET *BRACHYRAMPHUS MARMORATUS* USE OF A FRESHWATER LAKE ON VANCOUVER ISLAND, BRITISH COLUMBIA, 2018–2023

A. Table of survey effort (E) expressed as hours, and Marbled Murrelets counted per hour (M/h), at Kleekoot Arm of Sproat Lake, Vancouver Island, British Columbia, in 10-day periods of each month, 2019–2023. Page 2.

Definitions of abbreviations used in the table of survey effort. Page 3.

B. Plot of standardized counts. Marbled Murrelets per hour of survey effort (M/h) for each 10-day period in 2019–2022 (full-survey years). Plot produced using the ggplot2 package in R (version 4.1.2). Page 4.

Henderson & Sealy: Marbled Murrelet use of a freshwater lake in Canada

Mo.	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sep			Oct			Nov			Dec			Avg	
	Per.	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3				
2019	E	0.33	0.65	3.08	2.85	2.70	1.17	0.80	0.78	1.32	1.75	1.03	0.87	1.00	2.47	1.20	1.88	3.33	0.75	3.90	2.35	2.60	1.25	3.85	2.13	2.90	3.97	4.83	3.47	1.08	3.98	4.23	3.52	2.47	4.50	1.25	1.12	2.26
	M/h	6.00	6.15	4.22	1.05	1.48	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.81	0.00	0.00	0.90	6.67	2.30	1.70	0.00	0.00	0.00	0.00	0.69	0.00	0.41	0.00	0.00	1.00	1.89	1.71	7.30	2.67	4.80	12.5
2020	E	0.52	1.03	1.87	4.90	1.25	0.87	2.02	1.68	2.68	2.73	1.12	3.10	0.37	1.47	1.10	1.35	1.10	0.50	0.68	1.85	0.58	0.75	1.60	0.52	0.47	1.93	1.17	0.43	3.22	1.70	2.05	nd	2.98	2.33	2.70	1.35	1.60
	M/h	7.74	7.74	6.43	2.65	4.80	6.92	2.48	0.59	0.00	0.73	0.00	0.00	0.00	2.73	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	5.88	3.41	nd	3.02	4.29	2.22	5.93	1.97	
2021	E	3.30	2.61	3.85	4.77	4.58	4.22	4.48	2.02	1.70	3.75	4.32	2.33	2.00	2.25	1.58	2.90	2.03	1.73	4.40	3.67	3.07	1.60	5.85	3.72	4.62	1.73	1.30	3.70	4.73	1.73	2.10	4.00	2.47	3.22	3.93	3.97	3.17
	M/h	2.42	3.06	1.56	2.52	0.87	0.47	0.45	0.00	0.00	0.00	0.69	0.86	0.00	0.00	0.00	0.34	1.97	1.15	1.59	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.00	0.81	0.62	0.00	0.00	0.57
2022	E	2.32	3.83	4.43	1.65	2.67	1.31	3.65	1.37	2.83	1.38	3.35	1.80	1.82	2.05	1.83	4.75	4.20	nd	3.20	3.90	1.25	2.95	2.10	3.38	1.55	3.77	3.30	1.53	3.47	1.47	3.02	2.57	1.67	1.27	5.60	4.83	2.74
	M/h	0.00	0.26	0.00	0.61	0.75	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	nd	3.13	1.28	1.60	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.79	0.71	0.62	0.33
2023	E	4.77	4.83	1.58	2.78	3.83	1.38	2.47	1.42	3.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.91
	M/h	0.63	0.83	0.00	0.36	0.26	0.00	0.00	0.00	0.00	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.23

Abbreviations:

Mo., month

Avg., average values of survey effort and murrelets/hour for each year

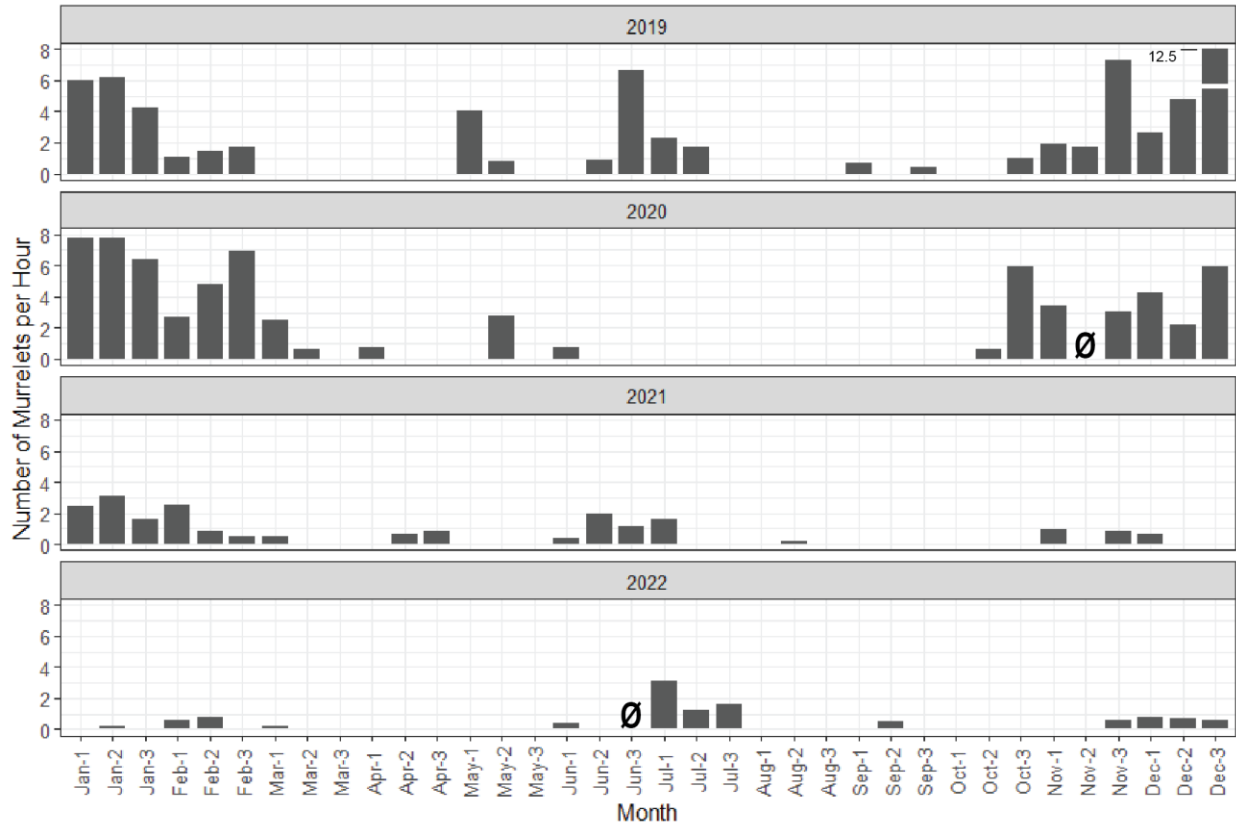
Per., 10-day periods in each month; days 1–10, days 11–20, days 21 to end

E, survey effort in hours (i.e., number of hours lakeside, including scanning the lake for murrelet presence, counting, observing murrelet behavior, etc.). Total minutes in a period were converted to hours, hence the number of hours is given to two decimal places.

M/h, number of murrelets observed per hour of effort. This standardized value was calculated as the sum of the numbers of Marbled Murrelets detected for all survey days within each 10-day period, divided by the total number of hours of observation in the period. For example, if 5 birds were observed on one day and 4 birds on a subsequent day of the same period, and the total survey time was 1.5 hours, then the value would be $(5 + 4)/1.5 = 6$ murrelets per hour. As in this example, the M/h value may be more than the maximum daily count.

n.d., no data (period not surveyed)

Henderson & Sealy: Marbled Murrelet use of a freshwater lake in Canada



∅, period not surveyed (period-2 of November 2020, period-3 of June 2022; surveys were conducted in all other periods)