

Table S1. Ranking of generalized linear mixed-effects models of common benthivorous marine bird species. Species were analyzed in separate candidate models sets. All models include an offset term for sampling area and a random effect of transect. Season (winter, summer) and region (Katmai, Kenai Fjords) of primary occurrence is shown and indicates the seasonal/regional data used in the models. Δ AIC denotes the difference in Akaike information criterion (AIC) between the best model and the one being compared, ω denotes Akaike weight, and df denotes the degrees of freedom in the model.

Species	Region/Season	Models	Δ AIC	ω	df
Barrow's Goldeneye	Both/Winter	PMH	0.0	0.45	4
		PMH + Region	0.9	0.29	5
		Null	2.0	0.17	3
		Region	3.0	0.10	4
Black Oystercatcher	Both/Summer	PMH + Region	0.0	0.76	5
		PMH	2.7	0.20	4
		Region	6.5	0.03	4
		Null	9.2	0.01	3
Black Scoter	Katmai/Winter	Null	0.0	0.67	3
		PMH	1.4	0.33	4
Bufflehead	Both/Winter	PMH + Region	0.0	0.63	5
		Region	1.2	0.35	4
		PMH	7.4	0.02	4
		Null	8.4	0.01	3
Emperor Goose	Katmai/Winter	Null	0.0	0.70	3
		PMH	1.7	0.30	4
Harlequin Duck	Both/Both	Season * Region + PMH * Season	0.0	0.52	8
		Season * Region	0.2	0.48	6
		PMH * Season + Region	29.1	0.00	7
		Season + Region	30.9	0.00	5
		PMH + Season + Region	31.4	0.00	6
		Season	51.8	0.00	4
		Region	254.5	0.00	4
		Null	271.1	0.00	3
PMH	273.1	0.00	4		
Long-tailed Duck	Katmai/Winter	PMH	0.0	0.99	4
		Null	14.1	< 0.01	3

Rock Sandpiper	Both/Winter	Region	0.0	0.67	4
		PMH + Region	1.4	0.33	5
		Null	19.1	< 0.01	3
		PMH	21.0	< 0.01	4
Surf Scoter	Both/Both	Season * Region	0.0	0.30	6
		Season + Region	0.2	0.27	5
		PMH + Season + Region	1.4	0.15	6
		Season * Region + PMH * Season	1.5	0.14	8
		PMH * Season + Region	1.7	0.13	7
		Season	12.9	< 0.01	4
		Region	358.6	< 0.01	4
		Null	367.1	< 0.01	3
		PMH	368.6	< 0.01	4
White-winged Scoter	Katmai/Both	PMH + Season	0.0	0.71	5
		Season	1.8	0.29	4
		Null	780.8	< 0.01	3
		PMH	782.2	< 0.01	4