Text S1. See Table S1 in Supplement 1

List of prey to the lowest taxon identifiable and their energy contents as determined by bomb calorimetry in 2009. With northern lampfish (*Stenobrachius leucopsarus*) and Pacific lamprey (*Lampetra tridentatus*), the dried fishmeal was too oily for pellet formation and reliable energy densities were not obtained, so we used the value of 8050 J/g wet-mass from Van Pelt et al. (1997). For species for which we did not have whole samples collected by the end of the 2009 season, we used an average of all energy densities from all fish. For partial fish that were only identifiable to higher taxonomic categories (i.e. genus or family), we estimated energy density by averaging the values for all species in that category represented in the auklet diet.

If a significant linear regression between length and energy density (defined by $R^2 > 0.5$ and $P < 0.05$) existed for any of the prey identifiable to species, we used the regression parameters to calculate length-specific energy densities for each individual of that species. In all other cases, we averaged the energy densities to obtain a representative value for each species. Both Pacific herring (*Clupea pallasii*) and northern anchovy (*Engraulis mordax*) showed step-wise length vs. energy density patterns, with the step at lengths corresponding to the age-0 to age-1 transition described in the literature (herring: 120 mm SL, Foy & Paul 1999; anchovy: 95 mm SL, Hart 1973, Litz et al. 2008). Above the transition, both species had a higher and more variable energy density that was not related to length (herring: $R^2 < 0.0001$, $P = 0.907$; anchovy: $R^2 < 0.0001$, $P = 0.988$). Below the transition, the relationship between length and energy density was linear and significant for herring ($R^2 = 0.88$, $P < 0.001$), but noisier for anchovy ($R^2 = 0.30$, $P = 0.158$), probably due to low sample size ($N = 8$). Tirelli et al. (2006) found a similar relationship between length and energy density for European anchovy (*E. encrasicolus*), with a similar step-wise increase in variability. We therefore used the age-class transitions from the literature to separate herring and anchovy into age-0 and age-1+ categories to estimate energy density and applied the same decision rules ($R^2 > 0.5$; $P < 0.05$) to determine whether to use regression parameters or energy density averages.

References:

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Table S2
Principal component scores used in PCA regression analysis for breeding and diet metrics. PC_1, which accounted for 46% of variation, described conditions similar to the NE Pacific MHW, with elevated SSTs, decreased primary productivity and upwelling, and so on. PC_2, which accounted for 17% of observed variation, described more moderate conditions for the NE Pacific. The three years of the NE Pacific MHW are bold.

Year	PC_1	PC_2
2010	-0.1	-0.9
2011	-1.62	-1.09
2012	-1.25	-0.73
2013	-0.44	0.55
2014	**0.58**	**0.21**
2015	**1.96**	**0.77**
2016	**1.98**	**-0.094**
2017	0.44	1.52
2018	0.37	0.54
2019	0.33	0.11

Table S3. Results of pairwise least-square means test on individual condition for major prey species at Destruction Island and Protection Island whose initial linear mixed-models had significant results. Pair-wise comparisons that differ significantly are shown in **bold.**

Destruction Island

Pacific Sand Lance

Year	2013	2016	2017
2016	0.13	-	-
2017	0.1	0.24	-
2019	0.99	**0.04**	0.67

Smelt Spp.

Year	2010	2013	2016	2018
2013	0.80	-	-	-
2016	0.89	0.52	-	-
2018	0.16	**0.03**	0.97	-
2019	0.32	**0.04**	0.99	0.83

Protection Island

Pacific Sand Lance

Year	2010	2013	2015	2016	2017	2018
2013	0.56	-	-	-	-	-
2015	**0.00002**	**0.00001**	-	-	-	-
2016	0.17	0.06	**0.002**	-	-	-
2017	0.99	0.96	**<0.00001**	0.05	-	-
2018	**<0.00001**	**<0.00001**	0.06	0.11	**<0.00001**	-
2019	**0.02**	**0.00008**	**0.00004**	0.99	**0.02**	**0.0008**

Pacific Herring

Year	2010	2013	2015	2016	2017	2018
2013	**0.000006**	-	-	-	-	-
2015	0.99	**0.001**	-	-	-	-
2016	0.23	**0.008**	0.66	-	-	-
2017	**0.00001**	0.41	**0.04**	0.87	-	-
2018	0.96	**0.0001**	0.99	0.99	**0.02**	-
2019	0.78	**0.001**	0.35	0.99	0.09	0.99