

potential to highlight critical constraints on fitness and the evolution of life histories.

Table 1: Mean (SE) raw ^{15}N values and carotenoid types and relative concentrations in seabird prey items

Species	Tissue Type	<i>n</i>	^{15}N (‰)	Carotenoid Type (Relative Concentration)
Euphausiid (<i>Thysanoessa spinifera</i>)	Whole	5	11.09 (.33)	Astaxanthin (high)
Copepod (<i>Neocalanus cristatus</i>)	Whole	5	11.36 (.33)	Astaxanthin (high)
Squid	Muscle	2	13.41 (.53)	Astaxanthin (high)



Figure 2. Carotenoid concentrations and yolk coloration in five species of auks at Triangle Island. Darker data points correspond to yolks with redder coloration. Note that the range of carotenoid concentrations vary by over an order of magnitude. *a*, Concentrations (g g^{-1}) of lutein and zeaxanthin combined versus astaxanthin. Lutein and zeaxanthin were combined for this figure because these two carotenoids had highly correlated concentrations across all species ($r^2 > 0.94$), and they always occurred together when present. *b*, Yolk hue versus total carotenoid concentrations. Note that lower hue values correspond to more red, less yellow coloration.

noceros auklets virtually spanned that of the other four species combined.

Total yolk carotenoid concentrations varied dramatically, by a factor of 23, among the five auk species. Of the five candidate

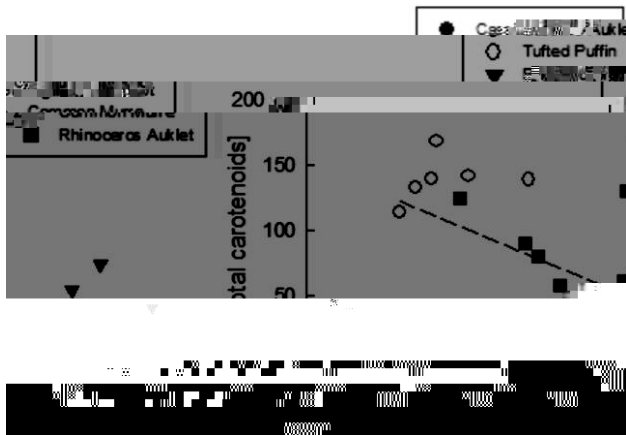


Figure 3. Total carotenoid concentrations ($\mu\text{g g}^{-1}$) in relation to trophic level (^{15}N) in the yolks of eggs laid by five species of auks at Triangle Island.

Table 3: Results of Akaike's Information Criterion (AIC) model comparisons to explain interspecific variation in total yolk carotenoid concentrations in eggs laid by five species of auks

Model	R^2	ΔAIC_c	AIC_w	k
Species ^{15}N	.86	.00	.83	7
Species	.82	3.20	.17	6
^{15}N	.49	17.14	.00	8
Species ^{15}N				
species \times ^{15}N	.86	24.15	.00	12

Note. The only model that received strong support ($\Delta\text{AIC}_c \leq 2$) included both species and ^{15}N , and this model received almost five times the support of the second-ranked model. No other model, including the null model, had $\text{AIC}_w \geq 1.000$ (AIC_w measures

Table 4: Parameter estimates and standard errors (SE) for variables in the top-ranked AIC model (species ^{15}N) explaining variation in total yolk carotenoid concentrations in five auk species

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