Text S1: Ethanol preservation effects on fish lengths

Field-collected black sea bass, tautog, and cunner were stored in 70% ethanol for stomach content analysis and were measured for "preserved" total length in the laboratory (TL_p; ± 1 mm). Juvenile fishes preserved in ethanol, however, are prone to shrinkage and decreases in body length (Buchheister & Wilson 2005, Taylor et al. 2019), thereby complicating direct comparisons between "fresh" total length (TL_f) and TL_p measurements made during field sampling and diet-related laboratory work, respectively. To account for decreases in fish length owing to ethanol preservation, a least-squares linear regression model was used to quantitate the relationship between TL_f and TL_p. The TL_f–TL_p relationship was derived from the analysis of 12 sea bass, 11 tautog, and 24 cunner collected from mid-Narragansett Bay in 2018. Each fish was measured for TL_f immediately after capture [mean ± 1 SD TL_f = 76.8 ± 39.4 mm (range = 34-173 mm)], preserved in 70% ethanol for ≥ 2 weeks, and individually re-measured for TL_p in the laboratory [mean ± 1 SD TL_p = 73.9 ± 36.4 mm (range = 33-160 mm)]. The pairwise length data were pooled across species, statistically analyzed via a paired sample t-test, and regressed to produce a TL_f–TL_p linear model, after which the model was used to convert TL_p to TL_f for statistical analyses and data representations.

The TL_p of sea bass, tautog, and cunner differed significantly from their corresponding TL_f (Paired sample t-test: $t\text{-value}_{1,46} = -5.53$, $p < 0.0001$), such that ethanol preservation resulted in a mean reduction in total length of 3.1 ± 2.2%. The least-squares linear regression model used to quantitate the relationship between TL_f and TL_p was highly significant and yielded the following equation:

$$TL_f = 1.080 \times TL_p - 3.019 \ (F_{1,46} = 15{,}505,\ R^2 = 0.997,\ p < 0.0001) \quad \text{(S1)}$$

Text S2: Ethanol preservation effects on stable isotope signatures

Ethanol preservation reportedly effects the stable nitrogen and carbon isotope signatures of fish tissues (Arrington & Winemiller 2002, Horri et al. 2015). In this study, to account for preservation effects on isotopic measurements, tautog and cunner originally iced and frozen after collection (without ethanol preservation) were partially thawed in the laboratory and their gastrointestinal tracts were removed (n = 8; TL_f = 40-111 mm). The remaining fish whole bodies were then halved by completely bisecting each individual through the sagittal plane, after which one body half was re-frozen at –20°C and the other half preserved in 70% ethanol for ≥ 2 weeks prior to sample preparation for stable isotope analysis. After nitrogen and carbon isotope analysis, the resulting pairwise data (i.e. two body halves per fish) were pooled across species and statistically compared using paired sample t-tests. If significant results were obtained from a t-test analysis ($p < 0.05$), then a least-squares linear regression model was used to relate the isotopic signatures of ethanol- versus non-ethanol preserved (frozen) body tissues.

Carbon isotopic signatures of tautog and cunner did not differ between ethanol-preserved and frozen body tissues (mean ± 1 SD: $\delta^{13}C_e$ = –17.9 ± 1.5‰; $\delta^{13}C_f$ = –18.0 ± 1.6‰) (Paired sample t-test: $t\text{-value}_{1,7} = 1.21$, $p = 0.26$). Nitrogen isotopic signatures of ethanol-preserved tissues ($\delta^{15}N_e$ = 16.5 ± 0.5‰), in contrast, were significantly higher than frozen samples ($\delta^{15}N_f$ = 16.1 ± 0.5‰) (Paired sample t-test: $t\text{-value}_{1,7} = 18.1$, $p < 0.0001$). Moreover, the effect of ethanol preservation on $\delta^{15}N$ values was directionally uniform across corresponding fresh tissues, and produced the following significant linear regression model:

$$\delta^{15}\mathrm{N_f} = 1.043 \times \delta^{15}\mathrm{N_e} - 1.144 \ (F_{1,7} = 386.9,\ R^2 = 0.985,\ p < 0.0001) \qquad \text{(S2)}$$

Text S3: Spatiotemporal variations in the stable nitrogen isotope signatures of a baseline primary consumer: periwinkle *Littorina littorea*

Nitrogen isotope ($\delta^{15}N$) signatures were used to calculate the trophic position of focal fish species (black sea bass, tautog, and cunner) and their prey, which is predicated on the $\delta^{15}N$ values of a baseline primary consumer. In this study, periwinkles (n = 30, 17.2-28.2 mm shell length) were selected as the baseline primary consumer because of their bay-wide distribution, high site fidelity, and consistent macroalgal diet (Imrie et al. 1990). The time period during which periwinkles were collected from Narragansett Bay was early June to late August in 2018 and 2019 [days of year (DOY) = 163-236], with geographic coordinates ranging from 41.3995 °N to 41.7547 °N. Multiple linear regression analysis revealed that periwinkle $\delta^{15}N$ signatures differed significantly as a function of time (DOY) and latitude (decimal degrees) ($F_{2,29} = 19.2$, $R^2 = 0.587$, $p < 0.0001$). More specifically, pronounced ^{15}N depletion occurred over time and across a north-south gradient in the study area, which is presumably unrelated to the periwinkle's trophic status. Accordingly, the following multiple linear regression equation was used to account for spatiotemporal variations in $\delta^{15}N$ signatures in focal fish and prey that were potentially affected by factors other than their respective trophic positioning (Oczkowski et al. 2008).

$$\delta^{15}\mathrm{N}_{\mathrm{periwinkle}} = (-0.02117 \times \mathrm{DOY}) + (8.229 \times \mathrm{Latitude}) - 326.29 \quad \text{(S3)}$$

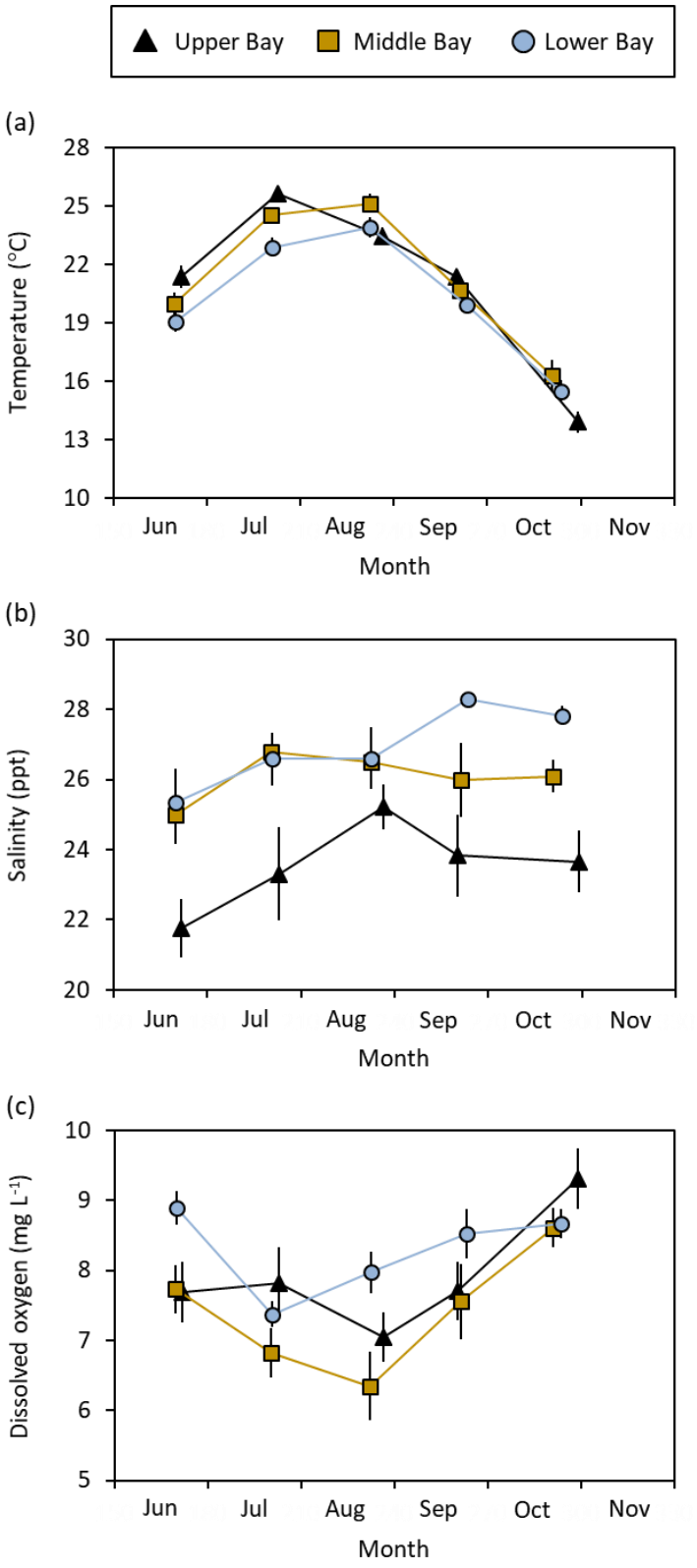

Fig. S1. Water temperature (°C) (a), salinity (ppt) (b), and dissolved oxygen (mg L^{-1}) (c) measured at three locations in Narragansett Bay: upper, middle, and lower Bay (Fig. 1). Data points represent monthly means averaged across years (2018 and 2019), and error bars denote ± 1 standard error.

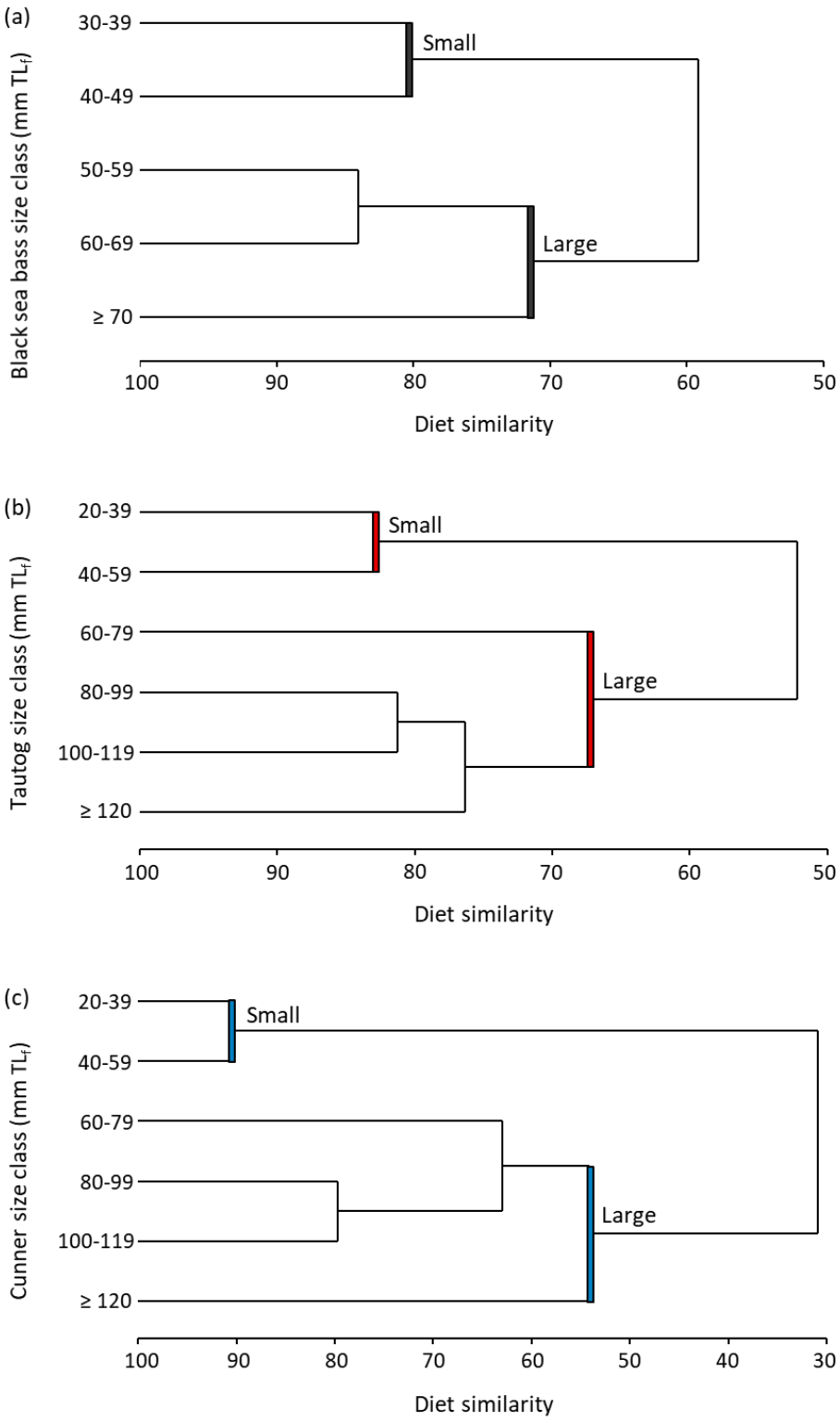

Fig. S2. Dendrograms derived from hierarchical cluster analyses that represent the dietary similarities of black sea bass (a), tautog (b), and cunner (c) across 10-mm or 20-mm size increments ("fresh" total length, TL_f). Thick vertical colored bars represent distinct dietary groups based on body size classification (small and large), as determined from cluster analyses and similarity profiling.

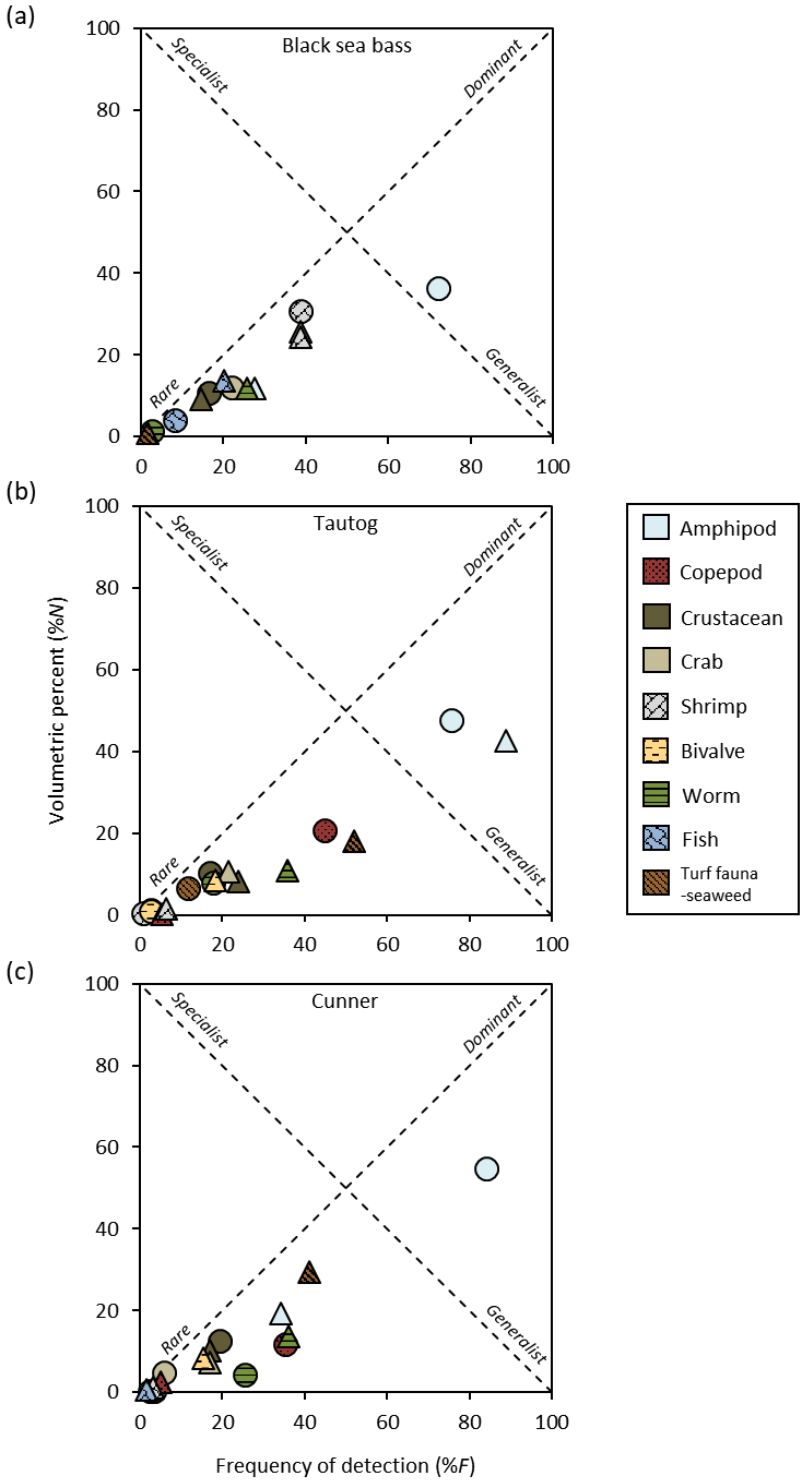

Fig. S3. Costello diagrams showing contributions of prey taxa to the diet of black sea bass (a), tautog (b), and cunner (c), expressed as frequency of detection (%*F*) and volumetric percent (%*V*). Prey denoted by circles and triangles are for "small" and "large" fish, respectively (Fig. S2). Prey importance to a fish's diet is shown along the dashed line from the bottom left ("rare) to the upper right ("dominant"), and feeding strategy is represented along the dashed line from the bottom right ("generalist") to the upper left ("specialist") (Costello 1990).

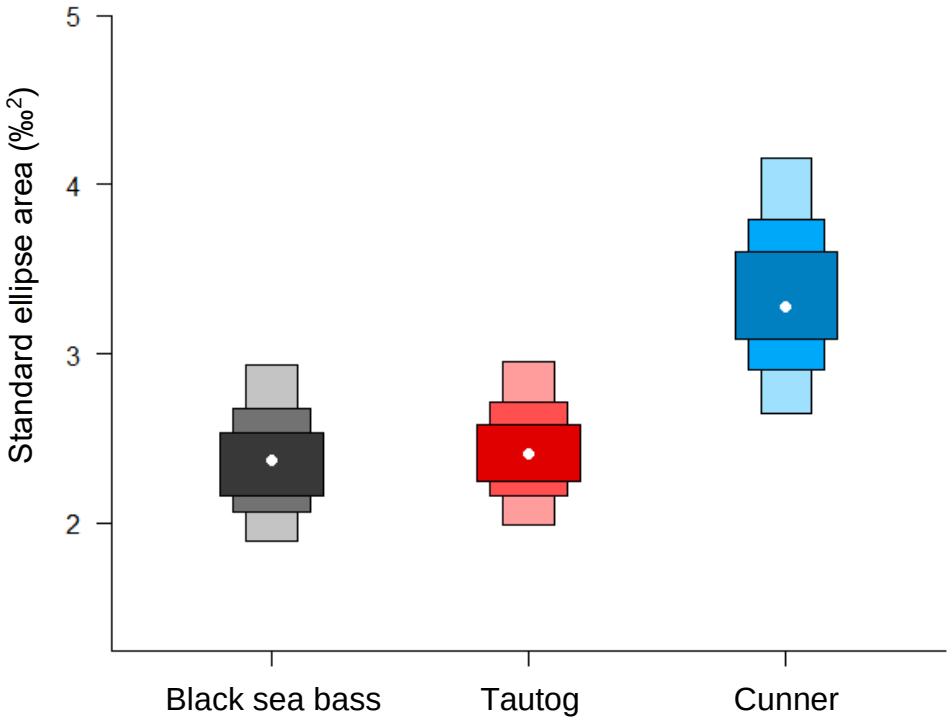

Fig. S4. Core isotopic niche sizes (i.e. Bayesian standard ellipse areas, SEA_B; ‰^{2}) for black sea bass, tautog, and cunner. White dots represent modes, and shaded boxes are the 50%, 75%, and 95% credible intervals represented by darker to lighter color gradations.

Table S1. Literature review of juvenile black sea bass dietary habits in the Middle-South Atlantic Bight and Gulf of Mexico. The following information is provided for each source document: study area, habitat, sea bass total length (mm TL), total number of stomach examined (n), percent of empty stomachs (% empty), prey taxa identified in sea bass stomachs and their corresponding contribution to diet (%), expressed as weight percent (%*W*), frequency of detection (%*F*), volumetric percent (%V), numeric percent (%*N*), or index of relative importance (%*IRI*). Only prey taxa with dietary contributions ≥ 4% are reported. nr = not reported

Study area	Habitat	TL	n	% empty	Prey	Contribution	Index
Middle Atlantic Bight							
Southern New England to Cape Hatteras (Bowman et al. 2000)[1]	Continental shelf	10-100	91	13.2	Amphipod	32	%*W*
					Shrimp, e.g. *Crangon septemspinosa*	31	
					Crustacean, unidentified	13	
					Decapod, unidentified	12	
					Crab, e.g. *Cancer irroratus*	12	
					Polychaete	6	
					Mysid	4	
New Jersey (La Rosa 2018)	Coastal reef	< 170	15	20.0	Crab, *Cancer irroratus*	36	%*W*
					Bivalve, unidentified	27	
					Decapod, unidentified	5	
					Fish	4	
New Jersey (Allen et al. 1978)	Tidal embayment	40-200	201	7.5	Crab, e.g. larvae and *Pagurus* sp.	35	%*F*
					Mysid	26	
					Shrimp, *Crangon septemspinosa*	25	
					Detritus, plant	22	
					Amphipod	20	
					Polychaete	14	
					Fish, e.g. *Anchoa* and *Menidia* sp.	14	
					Isopod	6	

Virginia (Kimmel 1973)[2]	Shallow bay, soft bottom	30-146	48	12.5	Mysid, e.g. *Neomysis americana*	37	%*V*
					Crab, e.g. *Panopeus herbstii*	17	
					Amphipod	11	
					Polychaete	8	
					Crustacean, unidentified	5	
North Carolina (La Rosa 2018)	Coastal reef	< 170	20	5.0	Bivalve, *Laevicardium* sp.	66	%*W*
					Crab, *Calappa* and *Parthenope* sp.	14	
					Decapod, other	6	
					Polychaete, *Sthenelais* sp.	5	
South Atlantic Bight							
South Carolina (Michael 2016)	Inner and middle continental shelf	< 200	230	14.3	Fish	41	%*IRI*
					Crab, e.g. *Pinnixa* sp.	18	
					Shrimp zoea	12	
					Ophiuroid	12	
					Ascidian	6	
South Carolina and Georgia (Sedberry 1988)[3]	Coastal live-bottom reef	60-120	24	20.8	Amphipod	75	%*V*
					Squid, *Loligo* sp.	7	
					Isopod	6	
					Decapod, unidentified	5	
					Mysid	4	
Gulf of Mexico							
Florida (Hood et al. 1994)[4]	Inshore, lower estuary	nr	71	nr	Shrimp, e.g. caridean and penaeid	53	%*N*
					Crab, e.g. xanthid and portunid	24	
					Amphipod	10	
					Fish	5	

[1] Weight percent averaged across two size classes: 10-50 and 60-100 mm TL.
[2] Volume percent averaged across two size classes: 30-91 and 92-146 mm TL.
[3] TL converted from standard length (Able & Fahay 1998).
[4] Sea bass for entire study were age-0+. Body sizes were not reported for inshore fish, but individuals were categorized as “younger”.

Table S2. Summary of stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N_f$) isotope signatures and niche metrics for black sea bass, tautog, and cunner. Trophic positions were calculated using Eq. (5), and $\delta^{15}N_f$ values were based on frozen tissues (direct measurements or equivalencies; Text S2 and Eq. S2). Bayesian standard ellipses contain 40% of the species-specific data and were corrected for small sample sizes. Ambit and core niche overlap between two species were calculated as the percent of overlapping ellipse areas (95% or 40% ellipses, respectively) relative to the total area occupied by both fishes.

	Focal fish species		
	Black sea bass (n = 80)	Tautog (n = 103)	Cunner (n = 75)
$\delta^{13}C$ (‰)			
Mean ± SD	–17.0 ± 0.8	–17.4 ± 1.1	–18.4 ± 1.1
Range	3.5	5.5	5.7
$\delta^{15}N_f$ (‰)			
Mean ± SD	15.5 ± 1.0	15.8 ± 0.7	15.7 ± 1.0
Range	4.4	4.0	4.3
Trophic position			
Mean ± SD	3.26 ± 0.29	3.24 ± 0.27	3.27 ± 0.31
Range	1.19	1.41	1.64
Isotopic niche area ($‰^2$)			
Total area (convex hull)	10.5	12.5	17.4
Ambit niche (95% confidence ellipse)	14.5	14.6	19.5
Core niche (Bayesian standard ellipse)	2.40	2.45	3.39
Isotopic niche overlap (%)			
Ambit niche (95% confidence ellipse)			
Black sea bass	–	–	–
Tautog	60.9	–	–
Cunner	45.4	54.9	–
Core niche (Bayesian standard ellipse)			
Black sea bass	–	–	–
Tautog	47.7	–	–
Cunner	9.4	26.6	–

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