The following supplement accompanies the article

Compound-specific isotopic analysis of amino acids reveals dietary changes in mesophotic coral-reef fish

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Table S1. Amino acid nitrogen isotopic composition, in per mil (‰), of mesophotic and shallow fish collected from the Hawaiian Islands of Mau‘i and O‘ahu.

		Ala	Asp	Glu	Ile	Leu	Pro	Val	Gly	Lys	Phe	Ser	Thr	Tyr
Meso-photic	Chaetodontidae *Chaetodon*	18.1 ± 0.9	16.8 ± 0.3	15.0 ± 0.7	--	14.7 ± 0.7	13.3 ± 0.3	13.1 ± 2.4	2.8 ± 0.0	0.8 ± 1.1	1.4 ± 0.3	1.9 ± 0.4	-18.5 ± 0.7	--
	Chaetodontidae *Forcipiger longirostris*	23.4 ± 0.3	20.9 ± 0.6	20.5 ± 0.4	20.4 ± 1.2	20.0 ± 1.5	21.6 ± 0.4	19.0 ± 1.9	--	3.5 ± 0.3	2.6 ± 2.6	2.9 ± 1.0	-22.6 ± 4.8	5.4 ± 1.1
	Holocentridae *Myripristis*	21.1 ± 2.8	14.0 ± 1.5	17.8 ± 1.3	16.8 ± 3.2	17.5 ± 2.1	15.0 ± 0.9	18.0 ± 2.1	-2.1 ± 0.7	0.7 ± 0.6	0.6 ± 0.9	-0.1 ± 2.3	-24.2 ± 3.4	--
	Holocentridae *Sargocentron*	22.7 ± 1.5	16.2 ± 1.2	20.6 ± 0.9	--	21.4 ± 1.4	16.6 ± 1.4	--	1.3 ± 2.3	1.0 ± 1.5	2.4 ± 1.6	1.6 ± 0.9	-24.5 ± 2.8	--
	Labridae *Pseudocheilinus*	22.4 ± 2.6	14.9 ± 1.1	18.1 ± 1.0	--	18.3 ± 0.7	16.4 ± 2.8	--	4.0 ± 2.0	2.0 ± 0.9	1.5 ± 0.8	2.0 ± 0.6	-22.0 ± 5.2	--
	Labridae *Labroides*	20.6 ± 0.9	11.9 ± 0.7	17.8 ± 0.4	15.9 ± 0.2	16.3 ± 0.6	12.4 ± 0.5	15.6 ± 0.3	2.0 ± 0.8	0.4 ± 0.3	1.1 ± 0.4	2.7 ± 0.3	-19.8 ± 1.1	4.8 ± 0.8
	Mullidae	19.8 ± 0.8	12.3 ± 0.7	17.6 ± 0.3	16.9 ± 1.4	16.4 ± 0.5	12.5 ± 0.1	13.6 ± 3.3	1.9 ± 1.5	0.9 ± 1.0	1.1 ± 0.2	2.0 ± 0.8	-17.2 ± 3.5	4.9 ± 0.2
	Pomacanthidae	17.3 ± 1.4	13.4 ± 1.9	15.2 ± 1.6	--	14.3 ± 0.9	12.5 ± 1.7	--	3.1 ± 2.2	3.0 ± 1.1	1.9 ± 0.9	3.1 ± 0.9	--	3.0 ± 2.5

		Ala	Asp	Glu	Ile	Leu	Pro	Val	Gly	Lys	Phe	Ser	Thr	Tyr
	Pomacentridae *Chromis*	19.9 ± 0.2	14.3 ± 1.0	18.9 ± 0.5	--	18.9 ± 1.6	17.0 ± 0.6	19.0 ± 1.3	-0.3 ± 1.1	0.9 ± 1.1	0.4 ± 1.2	0.6 ± 0.5	-19.4 ± 4.2	6.6 ± 2.3
	Pomacentridae *Dascyllus*	21.8 ± 4.5	14.1 ± 0.6	18.0 ± 1.1	18.1 ± 2.9	17.7 ± 2.7	13.3 ± 2.9	18.4 ± 3.7	3.4 ± 0.7	1.3 ± 0.8	0.4 ± 0.7	2.3 ± 0.9	-13.4 ± 4.9	4.1 ± 3.0
Shallow	Chaetodontidae *Chaetodon*	19.2 ± 2.6	18.5 ± 3.3	16.5 ± 3.5	16.7 ± 2.9	16.5 ± 2.3	15.3 ± 3.8	15.1 ± 4.1	2.9 ± 0.8	1.0 ± 0.7	2.4 ± 1.9	3.0 ± 0.7	-13.5 ± 2.0	2.8 ± 1.1
	Chaetodontidae *Forcipiger flavissimus*	23.2 ± 2.0	17.1 ± 0.2	20.6 ± 1.2	--	21.8 ± 3.3	20.7 ± 2.0	21.3 ± 0.2	-1.4 ± 2.8	2.0 ± 2.5	2.0 ± 1.2	1.9 ± 4.7	-21.8 ± 3.6	4.5 ± 3.5
	Chaetodontidae *Forcipiger longirostris*	20.4 ± 1.9	14.4 ± 1.4	16.8 ± 0.7	--	18.4 ± 0.4	14.1 ± 1.7	17.4 ± 2.9	2.4 ± 2.0	1.3 ± 0.6	2.7 ± 2.9	3.6 ± 2.5	-17.2 ± 0.9	4.7 ± 1.5
	Holocentridae *Myripristis*	20.9 ± 2.9	14.3 ± 1.7	18.6 ± 1.5	--	18.2 ± 2.1	15.9 ± 1.3	18.7 ± 2.5	1.2 ± 3.8	0.9 ± 0.7	2.5 ± 2.9	0.8 ± 2.7	-22.3 ± 1.9	4.0 ± 1.3
	Holocentridae *Sargocentron*	22.4 ± 2.4	15.8 ± 0.7	19.2 ± 0.7	--	19.4 ± 0.8	18.0 ± 2.1	19.2 ± 2.9	4.3 ± 2.6	1.9 ± 0.9	2.6 ± 0.2	3.8 ± 1.1	-18.7 ± 2.5	5.4 ± 1.6
	Labridae *Pseudocheilinus*	20.6 ± 0.5	14.6 ± 0.8	18.0 ± 0.7	16.8 ± 0.7	17.2 ± 0.8	15.2 ± 1.0	18.3 ± 0.7	4.0 ± 1.6	2.5 ± 0.5	1.9 ± 1.8	3.8 ± 0.4	-14.7 ± 0.7	4.4 ± 1.8
	Labridae *Labroides*	17.7 ± 0.7	14.6 ± 0.4	16.2 ± 0.2	15.6 ± 0.7	14.8 ± 0.5	13.8 ± 0.6	15.5 ± 0.8	4.8 ± 0.7	3.6 ± 0.8	3.2 ± 0.2	2.6 ± 1.0	-8.5 ± 0.5	2.9 ± 0.5
	Mullidae	19.9 ± 0.6	14.5 ± 2.1	16.6 ± 0.7	16.1 ± 0.7	16.1 ± 1.2	13.8 ± 2.6	--	--	3.2 ± 1.0	2.0 ± 0.9	3.2 ± 0.1	-13.1 ± 2.6	6.3 ± 0.9
	Pomacanthidae	16.4 ± 1.4	14.5 ± 0.5	15.6 ± 0.6	14.6 ± 1.7	15.4 ± 0.6	14.3 ± 1.8	16.0 ± 1.3	--	2.9 ± 0.9	2.7 ± 0.6	3.7 ± 0.9	-3.7 ± 1.6	1.6 ± 1.5
	Pomcentridae *Chromis*	21.5 ± 0.7	15.2 ± 0.7	18.8 ± 0.3	18.5 ± 0.6	18.8 ± 1.0	16.5 ± 2.3	18.7 ± 0.3	1.7 ± 0.1	0.8 ± 0.0	1.9 ± 0.4	3.1 ± 1.1	-17.2 ± 0.5	5.2 ± 0.3
	Pomacentridae *Dascyllus*	18.9 ± 1.5	13.0 ± 0.7	16.8 ± 0.9	--	16.1 ± 0.4	15 ± 0.7	16.7 ± 1.1	0.4 ± 2.3	0.1 ± 0.9	0.4 ± 0.3	2.3 ± 0.8	-19.1 ± 1.3	4.7 ± 0.3

Table S2. Mean standard length, Δ_{TS}, and estimated trophic position of mesophotic and shallow fish collected from the Hawaiian Islands of Mau‘i and O‘ahu from AA-CSIA.

Feeding Guild	Fish Species	Published Trophic Position	Mesophotic			Shallow		
			Mean SL (mm)	Mean Trophic Source Difference	Estimated Trophic Position (Glu-Phe)	Mean SL (mm)	Mean Trophic Source Difference	Estimated Trophic Position (Glu-Phe)
Omnivore	*Centropyge potteri*	2.6 ± 0.3	83 ± 12	12.7 ± 1.2	2.3 ± 0.2	70 ± 11	12.1 ± 1.1	2.2 ± 0.1
Planktivore	*Chaetodon miliaris*	3.0 ± 0.1	111 ± 11	14.6 ± 1.5	2.4 ± 0.1	116 ± 13	14.7 ± 1.8	2.4 ± 0.2
Planktivore	*Dascyllus albisella*	3.1 ± 0.4	77 ± 19	17.2 ± 3.3	2.9 ± 0.2	93 ± 22	17.1 ± 0.5	2.8 ± 0.1
Planktivore	*Chromis verater*	3.3 ± 0.4	117 ± 12	18.8 ± 0.9	3.0 ± 0.2	108 ± 24	17.0 ± 0.6	2.7 ± 0.1
Planktivore	*Myripristis berndti*	3.7 ± 0.6				137 ± 12	17.8 ± 2.1	2.7 ± 0.3
Planktivore	*Myripristis chryseres*	4.0 ± 0.7	142 ± 48	18.8 ± 1.4	2.8 ± 0.2			
Benthic Invertivore	*Forcipiger flavissimus*	3.1 ± 0.3				114 ± 9	15.3 ± 1.0	2.4 ± 0.2
Benthic Invertivore	*Forcipiger longirostris*	3.5 ± 0.5	130 ± 13	18.2 ± 0.7	2.9 ± 0.3	157 ± 6	20.5 ± 1.7	3.0 ± 0.5
Benthic Invertivore	*Sargocentron diadema*	3.4 ± 0.5				100 ± 15	16.4 ± 1.8	2.8 ± 0.1
Benthic Invertivore	*Sargocentron xantherhythrum*	3.5 ± 0.5	109 ± 10	18.0 ± 1.1	2.7 ± 0.1	103 ± 9	18.0 ± 0.2	2.8 ± 0.2
Benthic Invertivore	*Sargocentron ensifer*	4.0 ± 0.7	174 ± 10	20.2 ± 0.9	3.2 ± 0.1			

Benthic Invertivore	*Parupeneus multifasciatus*	3.5 ± 0.6	173 ± 58	15.7 ± 1.4	2.7 ± 0.2	137 ± 35	14.6 ± 0.4	2.5 ± 0.2
Benthic Invertivore	*Parupeneus porphyreus*	3.5 ± 0.6				196	12.5 ± 1.4	2.3 ± 0.3
Benthic Invertivore	*Pseudocheilinus evanidus*	3.5 ± 0.4	42 ± 6	16.5 ± 1.0	2.7 ± 0.2	57 ± 12	15.7 ± 1.3	2.7 ± 0.3
Benthic Invertivore	*Labroides phthirophagus*	4.0 ± 0.7	62	25.9 ± 2.1	3.6 ± 0.4	50	18.8 ± 1.4	2.9 ± 0.2
Benthic Invertivore	*Ostorhincus maculiferus*	3.5 ± 0.5	96	14.7 ± 1.2	2.5 ± 0.3			
Benthic Invertivore	*Pristiapogon kallopterus*	3.5 ± 0.6	109	16.1 ± 2.9	2.7 ± 0.3			