

**附录1 Marsh等(2017)和Stasko等(2017)研究中鱼类营养级与稳定同位素特征**

**Appendix 1 The trophic levels and stable isotope signatures for fishes study of Marsh et al (2017) and Stasko et al (2017)**

	种类 Species	$\delta^{13}\text{C}$ 均值 $\delta^{13}\text{C}$ mean	$\delta^{13}\text{C}$ 范围 $\delta^{13}\text{C}$ range	$\delta^{15}\text{N}$ 均值 $\delta^{15}\text{N}$ mean	$\delta^{15}\text{N}$ 范围 $\delta^{15}\text{N}$ range	营养级 Trophic level
Marsh et al, 2017	短角床杜父鱼 <i>Myoxocephalus scorpius</i>	-19.48	-19.80 to -19.20	13.98	12.90-15.40	3.14
	北极狼绵鲷 <i>Lycodes polaris</i>	-18.80	-18.80 to -18.80	16.50	16.50-16.50	4.00
	斑鳍北鲷 <i>Lumpenus fabricii</i>	-20.05	-21.10 to -19.00	14.05	13.50-14.60	3.15
	太平洋拟庸鲷 <i>Hippoglossoides elassodon</i>	-19.80	-20.60 to -19.00	14.65	13.80-15.50	3.35
	三叉裸棘杜父鱼 <i>Gymnocanthus tricuspis</i>	-19.65	-20.30 to -19.00	15.10	14.10-16.10	3.50
	黄线狭鳕 <i>Gadus chalcogrammus</i>	-20.40	-21.10 to -19.40	14.47	14.10-15.10	3.47
	细身宽突鳕 <i>Eleginus gracilis</i>	-20.54	-21.20 to -19.40	13.94	12.80-15.50	3.16
	白令海北鳕 <i>Boreogadus saida</i>	-20.62	-21.40 to -20.10	13.38	12.10-14.50	3.00
	粗糙钩杜父鱼 <i>Artediellus scaber</i>	-18.90	-19.10 to -18.70	14.85	14.40-15.30	3.35
	中间弧线鲷 <i>Anisarchus medius</i>	-19.75	-20.60 to -18.90	14.45	13.70-15.20	3.35
	六斑玉筋鱼 <i>Ammodytes hexapterus</i>	-21.45	-21.90 to -20.50	12.28	11.30-13.10	2.70
Stasko et al, 2017	中间弧线鲷 <i>Anisarchus medius</i>	-22.26	-23.04 to -21.29	15.47	14.98-15.91	-
	北极胶八角鱼 <i>Aspidophoroides olrikii</i>	-21.43	-22.74 to -20.80	14.85	13.83-15.58	-
	白令海北鳕 <i>Boreogadus saida</i>	-23.56	-24.15 to -23.14	14.04	12.49-15.05	-
	半花裸鲷 <i>Gymnelus hemifasciatus</i>	-22.01	-22.44 to -21.57	14.73	13.49-15.96	-
	三叉裸棘杜父鱼 <i>Gymnocanthus tricuspis</i>	-21.80	-23.7 to -20.62	14.56	13.55-16.02	-
	匙形冰杜父鱼 <i>Icelusspatula</i>	-21.89	-22.48 to -21.21	15.71	14.76-16.95	-
	费氏狮子鱼 <i>Liparis fabricii</i>	-23.76	-25.56 to -22.85	14.75	11.8-16.91	-
	斑鳍北鲷 <i>Lumpenus fabricii</i>	-24.06	-24.18 to -23.94	13.30	13.29-13.31	-
	阿氏狼绵鲷 <i>Lycodes adolfi</i>	-21.78	-22.53 to -20.79	17.58	16.48-19.54	-
	苍色狼绵鲷 <i>Lycodes pallidus</i>	-21.72	-22.44 to -21.07	16.57	15.53-17.18	-
	砂栖狼绵鲷 <i>Lycodes polaris</i>	-21.25	-22.9 to -19.20	15.69	14.12-16.81	-
	半裸狼绵鲷 <i>Lycodes seminudus</i>	-21.19	-21.5 to -20.91	17.39	16.77-17.95	-
	尼氏鲱杜父鱼 <i>Triglops nybelini</i>	-23.43	-23.43 to -23.43	14.28	14.28-14.28	-