

Supplements

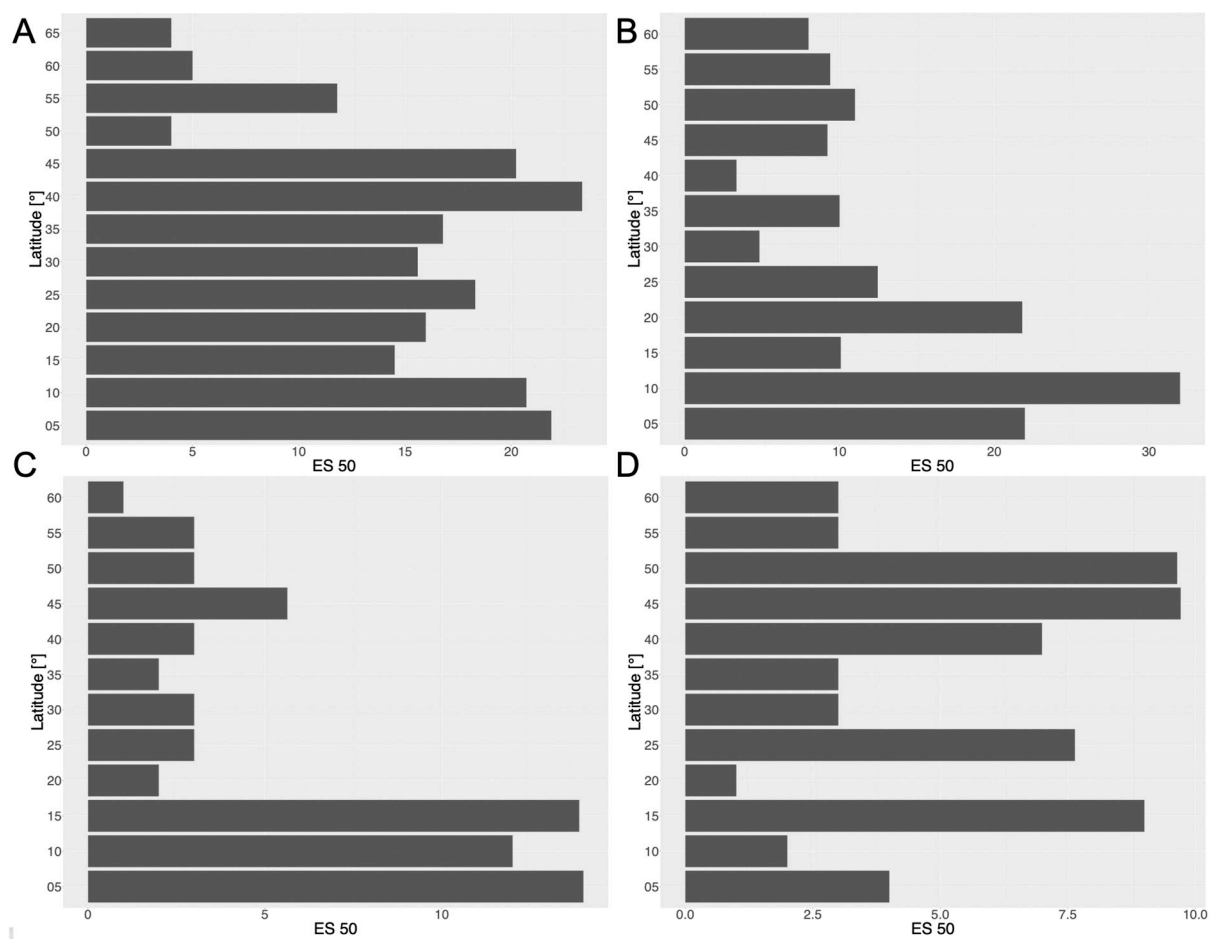


Figure S1: Estimated species richness (ES50) for (A) shallow-water polychaetes, (B) deep-sea polychaetes, (C) shallow-water sipunculans and (D) deep-sea sipunculans in the Northwest Pacific.

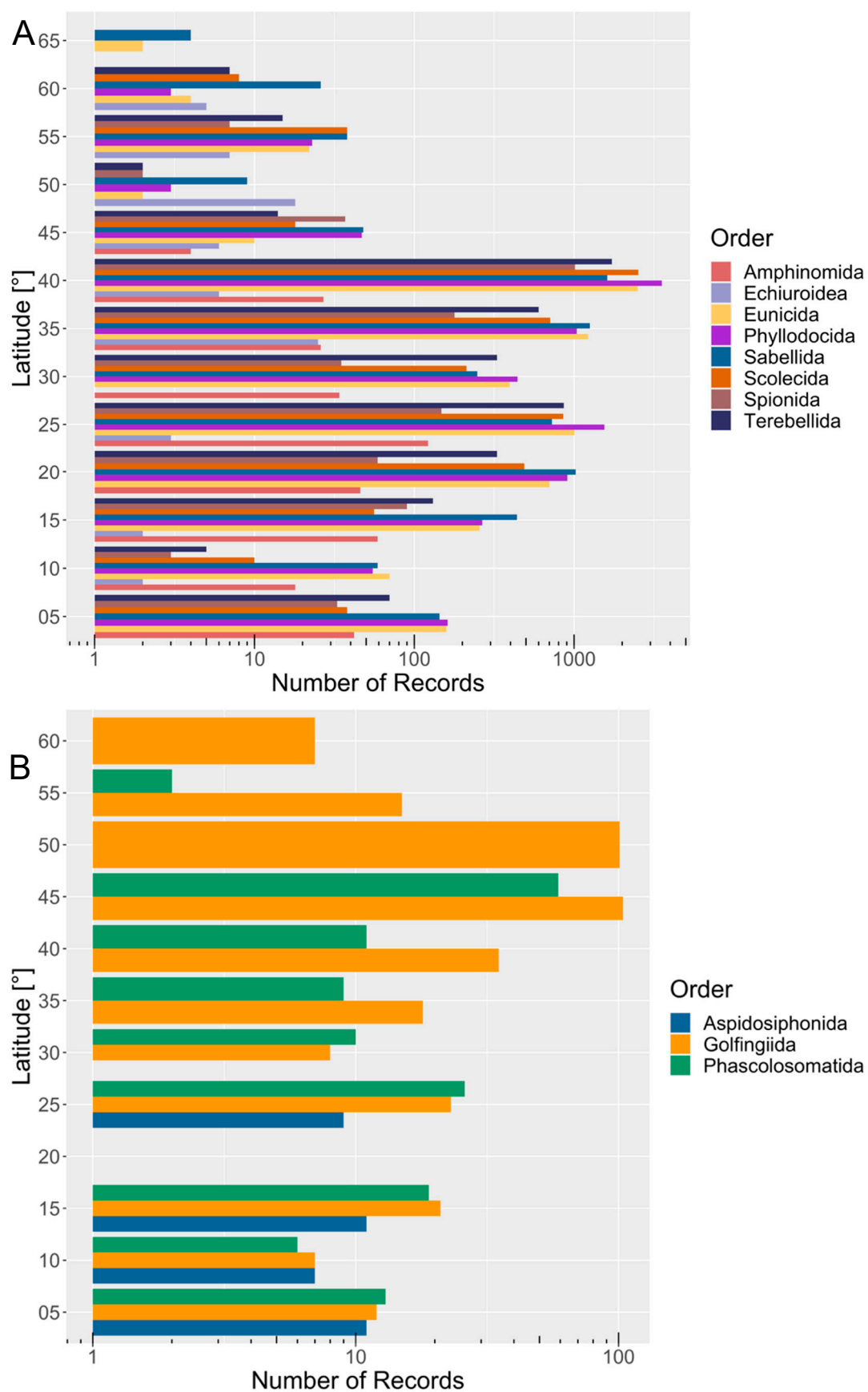
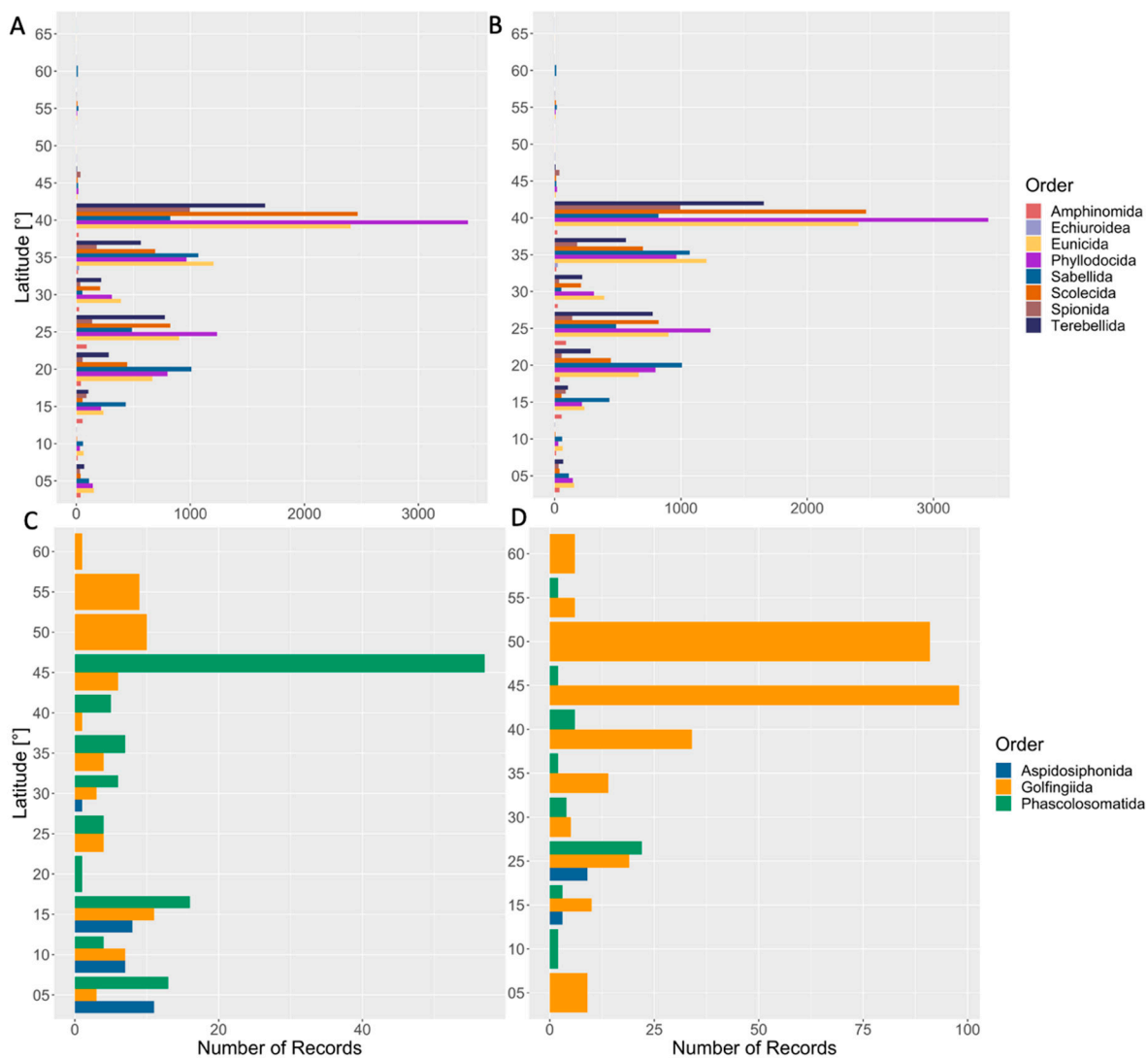


Figure S2: Number of occurrence records for (A) Polychaeta order and (B) Sipuncula families per 5°-latitudinal bands in the Northwest Pacific. The x-axis are logarithmic.



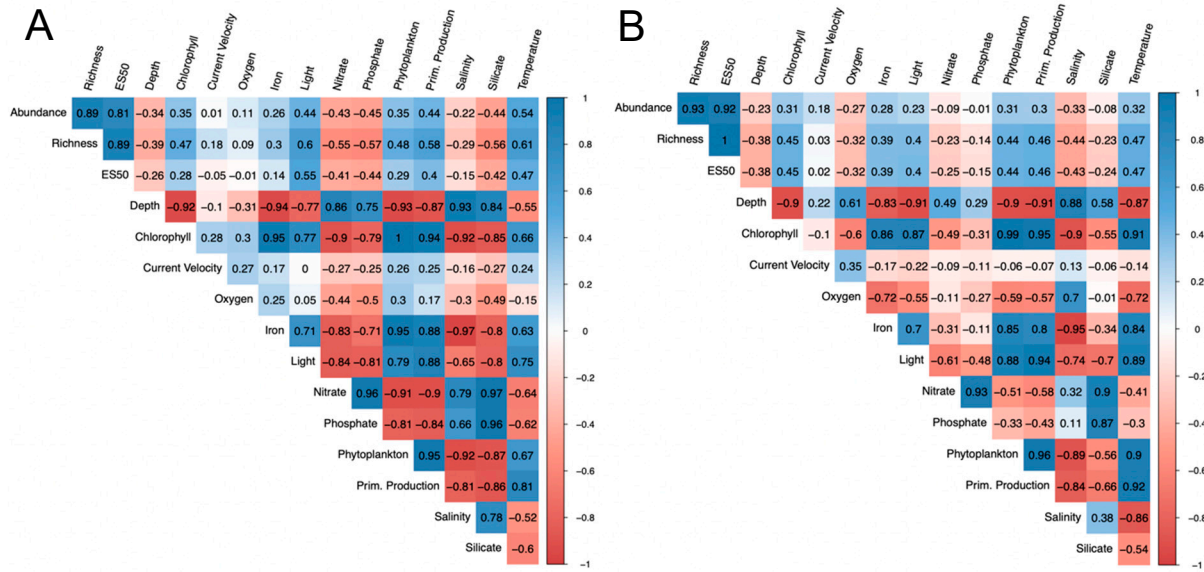


Figure S4: Correlation matrices of biodiversity parameters and environmental factors in the Northwest Pacific for (A) Polychaeta and (B) Sipuncula on the 5 % confidence value. The color red indicates a strong negative correlation while blue indicates a strong positive correlation. We used ORACLE-layers for the environmental factors and ran a Spearman correlation analysis between them and biodiversity parameters from the 700,000 km² hexagons: the species richness (number of species per hexagon), the abundance (number of occurrence records per hexagon) and the estimated species richness per hexagon (ES50).

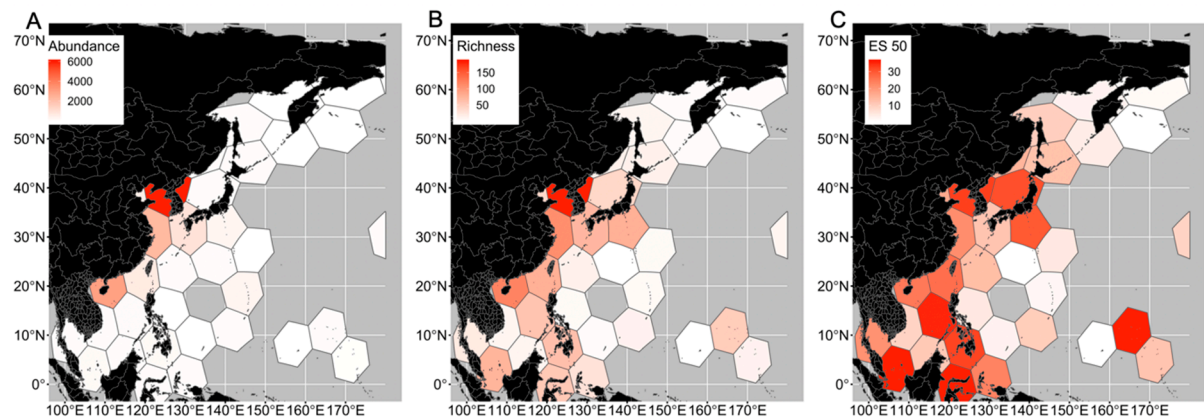


Figure S5: Distribution and diversity of shallow-water Polychaeta and Sipuncula in the Northwest Pacific. (A) Sampling effort (number of distribution records), (B) alpha species richness (number of species per hexagon), and (C) ES50 (estimated number of species) of benthic polychaetes and sipunculans in the NWP per 700,000 km² hexagons. Grey hexagons had zero values.

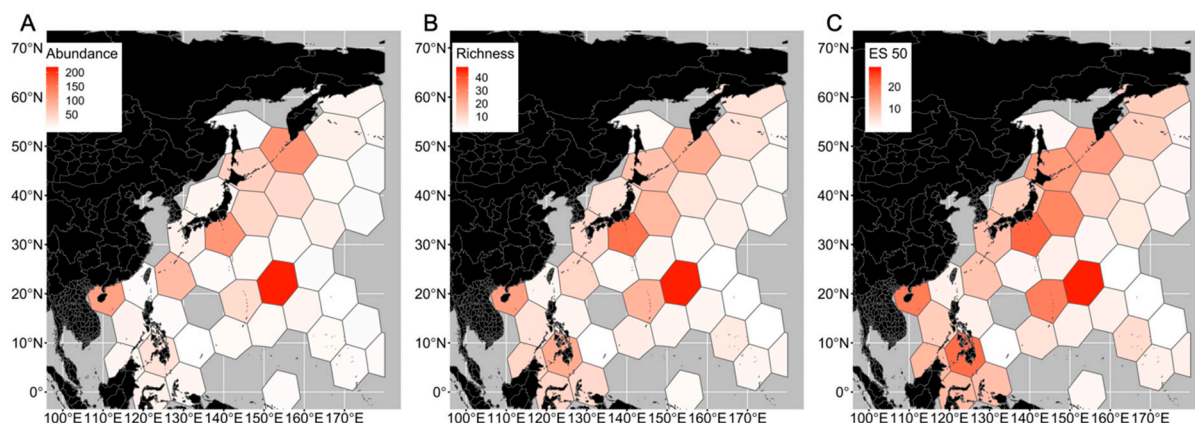


Figure S6: Distribution and diversity of deep-sea Polychaeta and Sipuncula in the Northwest Pacific. (A) Sampling effort (number of distribution records), (B) alpha species richness (number of species per hexagon), and (C) ES50 (estimated number of species) of benthic polychaetes and sipunculans in the NWP per 700,000 km² hexagons. Grey hexagons had zero values.

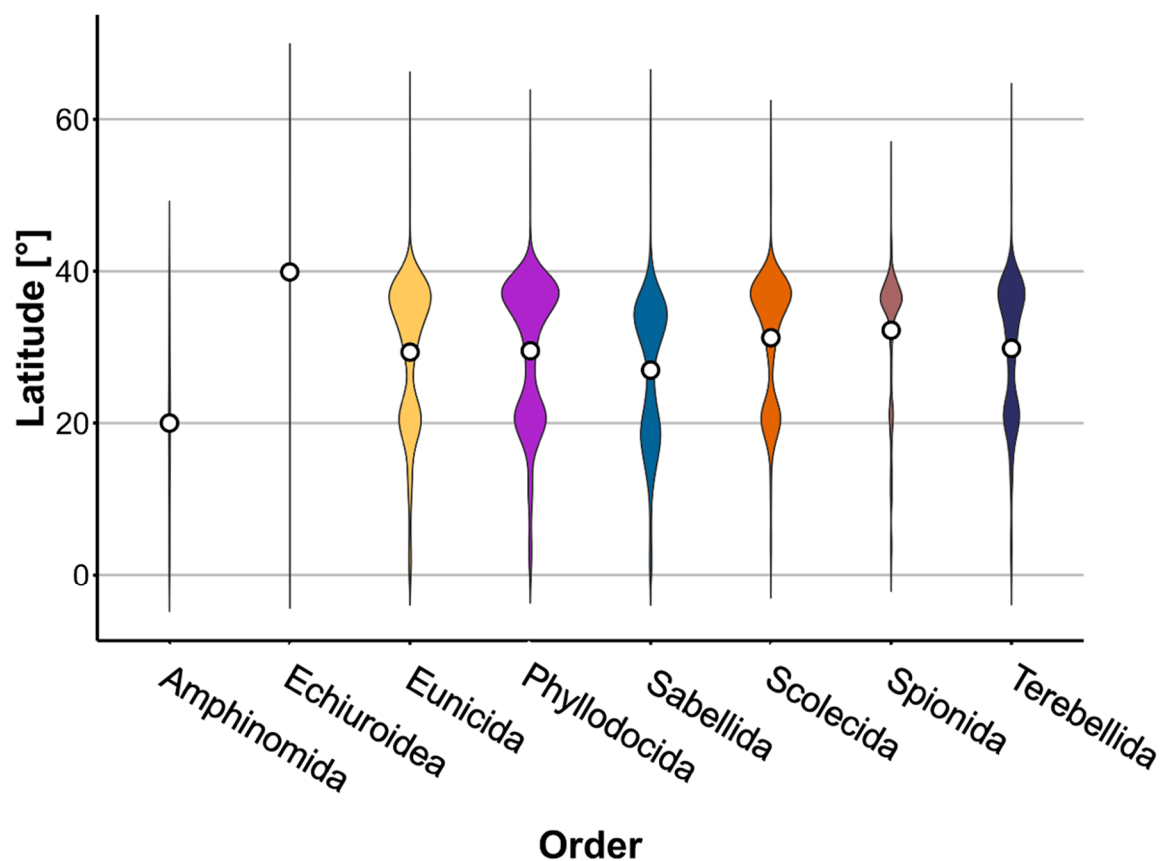


Figure S7: Violin plot representing the latitudinal distribution of polychaete records for each order across the Northwest Pacific. The width of the plots is proportional to the number of observations and thus shows sampling intensity. The white dots indicate the median.

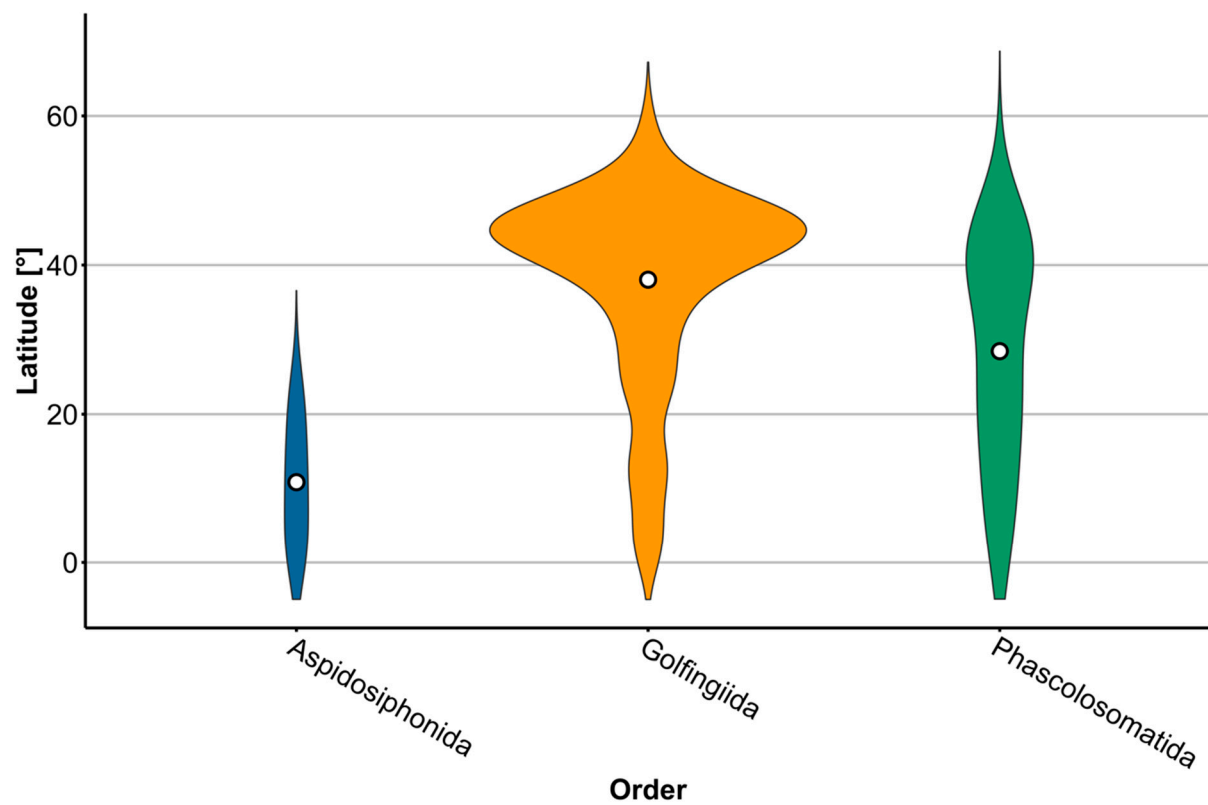


Figure S8: Violin plot representing the latitudinal distribution of sipunculan records for each occurring family across the Northwest Pacific. The width of the plots is proportional to the number of observations and thus shows sampling intensity. The white dots indicate the median.

Table S1: Citations of the OBIS dataset.

ID	Citation
c998748f-0dd0-4c5f-bb7d-1663ce3dacad	Murina G.V. (2013). Zoobenthos data from different sources (collected and extracted from literature), personal archive of G.V. Murina (IBSS). Dataset published in electronic format by IBSS in 2013, consulted via iOBIS on [date].
9db24ef5-0c19-4a5b-82a7-be3a31dec4b8	The Plankton Society of Japan, The Japanese Association of Benthology (2018) Plankton&
89e23fc8-3f61-4480-9de3-358fe6eefe0b	National Museum of Natural History, Smithsonian Institution NMNH Invertebrate Zoology Collection Database. National Museum of Natural History, Smithsonian Institution, 10th and Constitution Ave. N.W., Washington, DC 20560-0193, 2001, Version 3.2.04 (0802221).
b04ae33b-2f2a-4d06-844a-4f2040993fcc	NA
b74b429a-4052-4f5b-bff3-fe0b5a2e8669	WoRMS Editorial Board (2021). Type locality distributions from the World Register of Marine Species. Available from http://www.marinespecies.org at VLIZ. Accessed on YYYY-MM-DD.
1518e369-0e28-4734-b85e-bc1c1ed4f00d	Ishida S (2016). Marine Invertebrata specimen database of Osaka Museum of Natutal History. National Institute of Genetics, ROIS. Occurrence dataset https://doi.org/10.15468/zhubgk accessed via GBIF.org on yyyy-mm-dd.
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287f44a3-d5b7-4efb-8708-809d1a5323ae	Saeedi H &
6963aa86-a154-459c-aeb0-0496668512f6	Japan Agency for Marine-Earth Science and Technology (2016 onwards). JAMSTEC Marine Biological Samples Database. https://doi.org/10.48518/00001 . Accessed on yyyy-mm-dd.
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a0a3811f-4040-4ade-aa01-31c91e915938	NA
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f6e5b0ee-d645-40fc-a433-17fd8965c941	JODC (2013) JODC Dataset. (Available: http://www.godac.jamstec.go.jp/bismal/j/JODC_J-DOSS . Accessed: YYYY-MM-DD).
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da77ef95-bff6-43f9-8af8-2a1dfa400ba8	Coral Reef Ecosystem Division (CRED), NOAA Pacific Island Fisheries Science Center, 2008-05-08, CRED Rapid Ecological Assessment of Invertebrate in the Pacific Ocean, from 2002 to 2008
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