

## **Supporting information for**

# **“Mesoscale spatio-temporal dynamics of demersal assemblages of the Eastern Ionian Sea in relationship with natural and fisheries factors”**

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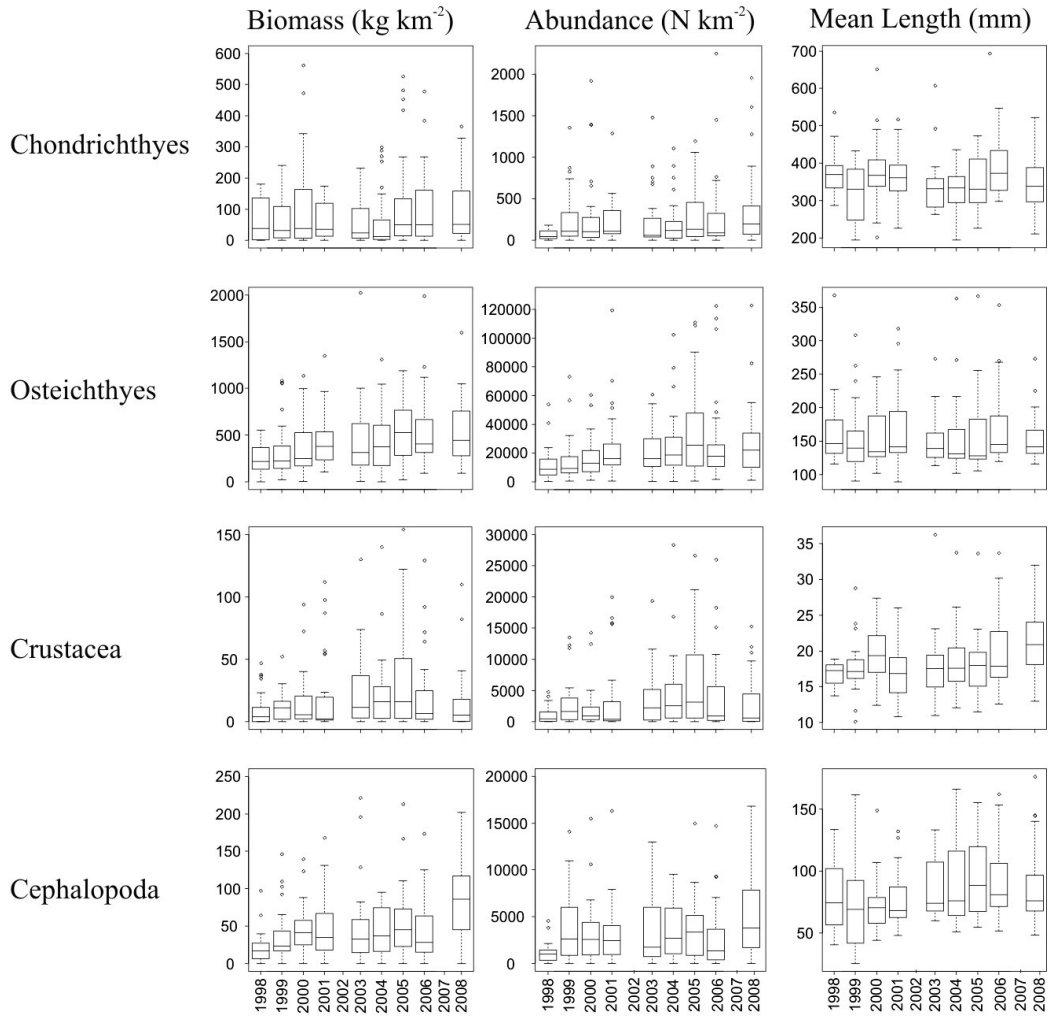
Konstantinos Tsagarakis, Chryssi Mytilineou, John Haralabous, Pascal Lorange, Chrissi-Yianna Politou and John Dokos

**Annexes: Lists of species included in the analysis****Table S1.** List of Osteichthyes species included in the analysis.

<i>Acantholabrus palloni</i>	<i>Epigonus denticulatus</i>	<i>Pagrus pagrus</i>
<i>Argentina sphyraena</i>	<i>Epigonus telescopus</i>	<i>Paralepis speciosa</i>
<i>Arnoglossus imperialis</i>	<i>Epinephelus aeneus</i>	<i>Peristedion cataphractum</i>
<i>Arnoglossus kessleri</i>	<i>Epinephelus guaza</i>	<i>Phycis blennoides</i>
<i>Arnoglossus laterna</i>	<i>Eutrigla gurnardus</i>	<i>Phycis phycis</i>
<i>Arnoglossus rueppelli</i>	<i>Gadella maraldi</i>	<i>Psetta maxima</i>
<i>Arnoglossus thori</i>	<i>Gadiculus argenteus</i>	<i>Scophthalmus rhombus</i>
<i>Aspitrigla cuculus</i>	<i>Gaidropsarus mediterraneus</i>	<i>Scorpaena elongata</i>
<i>Aspitrigla obscura</i>	<i>Gaidropsarus spp.</i>	<i>Scorpaena notata</i>
<i>Aulopus filamentosus</i>	<i>Gnathophis mystax</i>	<i>Scorpaena porcus</i>
<i>Bellotia apoda</i>	<i>Gobius niger</i>	<i>Scorpaena scrofa</i>
<i>Benthocometes robustus</i>	<i>Gobius paganellus</i>	<i>Scorpaena sp.</i>
<i>Benthoema glaciale</i>	<i>Gobius spp.</i>	<i>Serranus cabrilla</i>
<i>Blenniidae</i>	<i>Helicolenus dactylopterus</i>	<i>Serranus hepatus</i>
<i>Blennius ocellaris</i>	<i>Hoplostethus mediterraneus</i>	<i>Solea impar</i>
<i>Boops boops</i>	<i>Hymenocephalus italicus</i>	<i>Solea kleini</i>
<i>Bothus podas</i>	<i>Lepidopus caudatus</i>	<i>Solea spp.</i>
<i>Callanthias ruber</i>	<i>Lepidorhombus boscii</i>	<i>Solea vulgaris</i>
<i>Callionymus lyra</i>	<i>Lepidorhombus whiffiagonis</i>	<i>Sparus aurata</i>
<i>Callionymus maculatus</i>	<i>Lepidotrigla cavillone</i>	<i>Sphoeroides cutaneus</i>
<i>Callionymus risso</i>	<i>Lepidotrigla dieuzeidei</i>	<i>Spicara flexuosa</i>
<i>Callionymus spp.</i>	<i>Leusueurigobius friesii</i>	<i>Spicara maena</i>
<i>Capros aper</i>	<i>Lophius budegassa</i>	<i>Spicara smaris</i>
<i>Caranx rhonchus</i>	<i>Lophius piscatorius</i>	<i>Stomias boa</i>
<i>Carapus acus</i>	<i>Macrorhamphosus scolopax</i>	<i>Symbolophorus veranyi</i>
<i>Centracanthus cirrus</i>	<i>Merlangius merlangus</i>	<i>Symphodus spp.</i>
<i>Centrolophus niger</i>	<i>Merluccius merluccius</i>	<i>Symphurus ligulatus</i>
<i>Cepola macrophthalma</i>	<i>Microchirus ocellatus</i>	<i>Symphurus nigrescens</i>
<i>Cerastocopelus maderensis</i>	<i>Microchirus variegatus</i>	<i>Symphurus spp.</i>
<i>Chlorophthalmus agassizii</i>	<i>Micromesistius poutassou</i>	<i>Synchiropus phaeton</i>
<i>Citharus linguatula</i>	<i>Molva dipterygia</i>	<i>Syngnathus acus</i>
<i>Coelorhynchus coelorhynchus</i>	<i>Monochirus hispidus</i>	<i>Syngnathus spp.</i>
<i>Conger conger</i>	<i>Mugil cephalus</i>	<i>Synodus saurus</i>
<i>Dactylopterus volitans</i>	<i>Mullus barbatus</i>	<i>Trachinus araneus</i>
<i>Deltentosteus quadrimaculatus</i>	<i>Mullus surmuletus</i>	<i>Trachinus draco</i>
<i>Dentex dentex</i>	<i>Muraena helena</i>	<i>Trachinus radiatus</i>
<i>Dentex gibbosus</i>	<i>Nettastoma melanurum</i>	<i>Trigla lucerna</i>
<i>Dentex macrophthalmus</i>	<i>Nezumia sclerorhynchus</i>	<i>Trigla lyra</i>
<i>Dentex maroccanus</i>	<i>Notacanthus bonapartei</i>	<i>Trigloporus lastoviza</i>
<i>Diplodus annularis</i>	<i>Ophichthus rufus</i>	<i>Trisopterus minutus capelanus</i>
<i>Diplodus vulgaris</i>	<i>Pagellus acarne</i>	<i>Uranoscopus scaber</i>
<i>Echelus myrus</i>	<i>Pagellus bogaraveo</i>	<i>Zeus faber</i>
<i>Epigonus constanciae</i>	<i>Pagellus erythrinus</i>	

**Table S2.** List of Chondrichthyes, Crustaceans and Cephalopod species included in the analysis.

<b>Chondrichthyes</b>	<i>Ebalia granulosa</i>	<i>Pontocaris lacazei</i>
<i>Centrophorus granulosus</i>	<i>Ergasticus clouei</i>	<i>Pontophilus norvegicus</i>
<i>Centrophorus uyato</i>	<i>Ethusa mascarone</i>	<i>Pontophilus spinosus</i>
<i>Chimaera monstrosa</i>	<i>Eurynome aspera</i>	<i>Processa canaliculata</i>
<i>Dalatias licha</i>	<i>Gennadas elegans</i>	<i>Rissoides desmaresti</i>
<i>Dasyatis pastinaca</i>	<i>Goneplax rhomboides</i>	<i>Rissoides pallidus</i>
<i>Etmopterus spinax</i>	<i>Homola barbata</i>	<i>Scyllarides latus</i>
<i>Galeorhinus galeus</i>	<i>Inachus communissimus</i>	<i>Solenocera membranacea</i>
<i>Galeus melastomus</i>	<i>Inachus dorsettensis</i>	<i>Squilla mantis</i>
<i>Heptranchias perlo</i>	<i>Inachus sp.</i>	<i>Stenopus spinosus</i>
<i>Mustelus mustelus</i>	<i>Inachus thoracicus</i>	
<i>Myliobatis aquila</i>	<i>Latreillia elegans</i>	<b>Cephalopoda</b>
<i>Oxyntotus centrina</i>	<i>Liocarcinus depurator</i>	<i>Abralia veranyi</i>
<i>Raja asterias</i>	<i>Lysmata seticaudata</i>	<i>Alloteuthis media</i>
<i>Raja brachyura</i>	<i>Macropipus tuberculatus</i>	<i>Alloteuthis subulata</i>
<i>Raja clavata</i>	<i>Macropodia longipes</i>	<i>Bathypolypus sponsalis</i>
<i>Raja miraletus</i>	<i>Macropodia longirostris</i>	<i>Eledone cirrhosa</i>
<i>Raja montagui</i>	<i>Macropodia rostrata</i>	<i>Eledone moschata</i>
<i>Raja naevus</i>	<i>Maja goltziana</i>	<i>Illex coindetii</i>
<i>Raja oxyrinchus</i>	<i>Maja squinado</i>	<i>Loligo forbesi</i>
<i>Raja polystigma</i>	<i>Medaeus couchi</i>	<i>Loligo vulgaris</i>
<i>Raja radula</i>	<i>Munida iris</i>	<i>Neorossia caroli</i>
<i>Raja rondeleti</i>	<i>Munida rugosa</i>	<i>Octopus macropus</i>
<i>Raja undulata</i>	<i>Munida sp.</i>	<i>Octopus salutii</i>
<i>Scyliorhinus canicula</i>	<i>Nematocarcinus ensifer</i>	<i>Octopus vulgaris</i>
<i>Squalus acanthias</i>	<i>Nephrops norvegicus</i>	<i>Pteroctopus tetracirrhus</i>
<i>Squalus blainville</i>	<i>Palicus caronii</i>	<i>Rondeletiola minor</i>
<i>Torpedo marmorata</i>	<i>Parapenaeus longirostris</i>	<i>Rossia macrosoma</i>
<i>Torpedo nobiliana</i>	<i>Parthenope macrochelos</i>	<i>Scaevurgus unicolor</i>
<i>Torpedo torpedo</i>	<i>Parthenope massena</i>	<i>Sepia elegans</i>
	<i>Pasiphaea sivado</i>	<i>Sepia officinalis</i>
<b>Crustacea</b>	<i>Penaeus kerathurus</i>	<i>Sepia orbignyana</i>
<i>Alpheus glaber</i>	<i>Pilumnus spinifer</i>	<i>Sepietta neglecta</i>
<i>Aristaeomorpha foliacea</i>	<i>Pisa armata</i>	<i>Sepietta oweniana</i>
<i>Aristeus antennatus</i>	<i>Plesionika acanthonotus</i>	<i>Sepietta spp.</i>
<i>Bathynectes maravigna</i>	<i>Plesionika antigai</i>	<i>Sepiolo affinis</i>
<i>Calappa granulata</i>	<i>Plesionika edwardsii</i>	<i>Sepiolo intermedia</i>
<i>Calappa pelii</i>	<i>Plesionika gigliolii</i>	<i>Sepiolo ligulata</i>
<i>Calocaris macandreae</i>	<i>Plesionika heterocarpus</i>	<i>Sepiolo rondeleti</i>
<i>Chlorotocus crassicornis</i>	<i>Plesionika martia</i>	<i>Sepiolo spp</i>
<i>Dorippe lanata</i>	<i>Polycheles typhlops</i>	<i>Todaropsis eblanae</i>
<i>Dromia personata</i>	<i>Pontocaris cataphractus</i>	



**Fig. S1.** Annual box-plots for biomass and abundance indices and mean length for the four sub-communities examined.

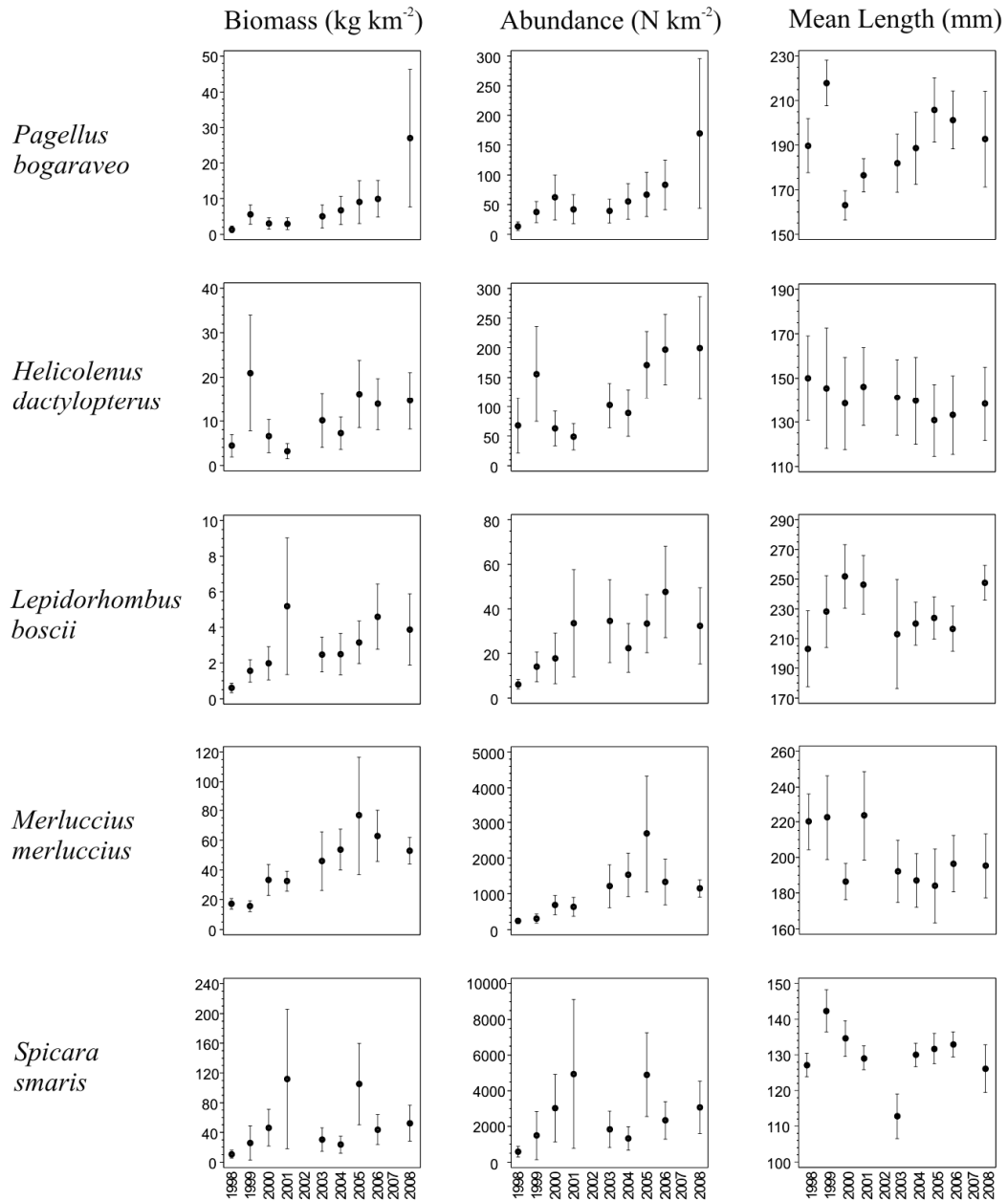


Fig. S2. Annual means and standard errors of biomass and abundance indices and mean length of the ten species examined.

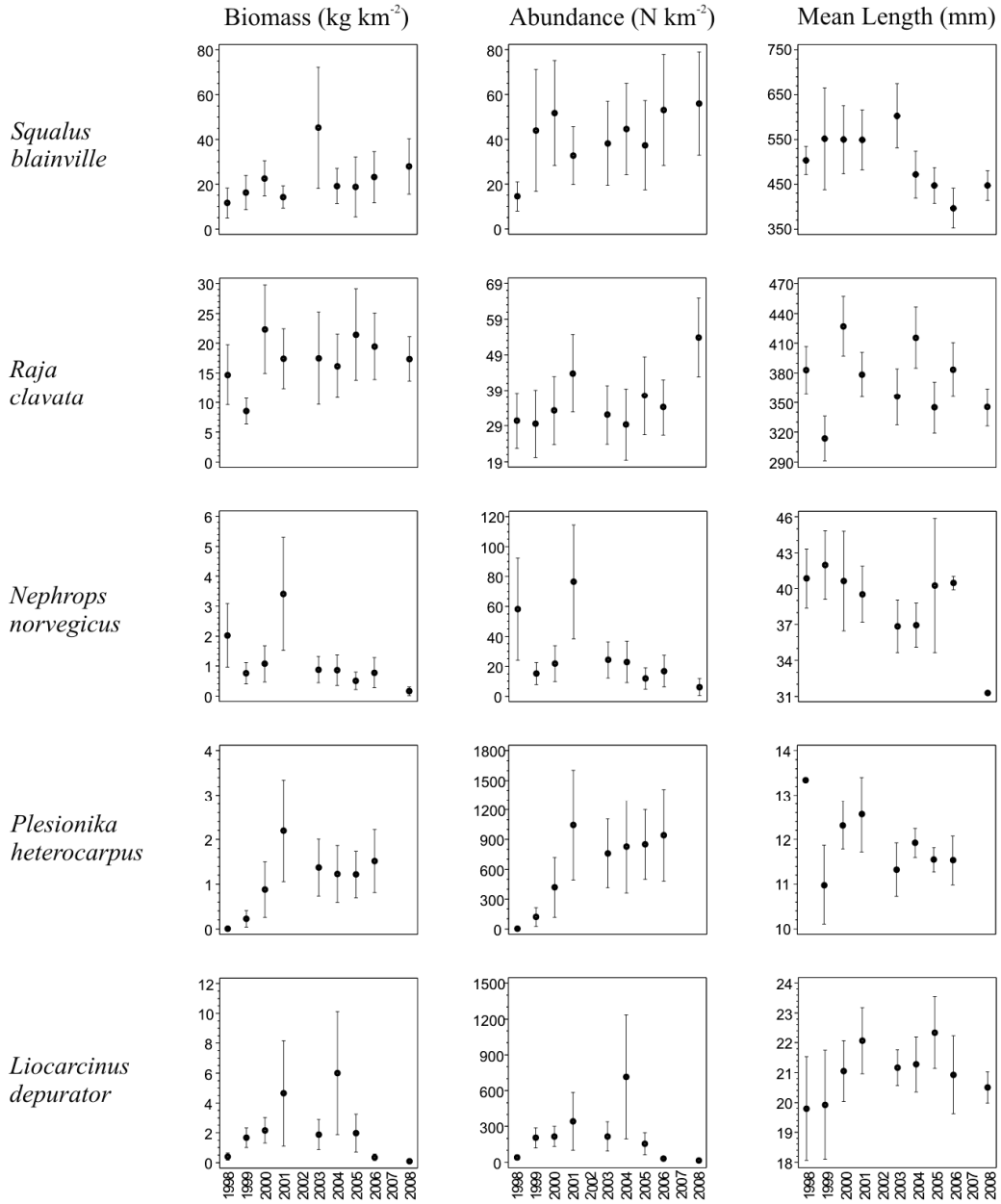
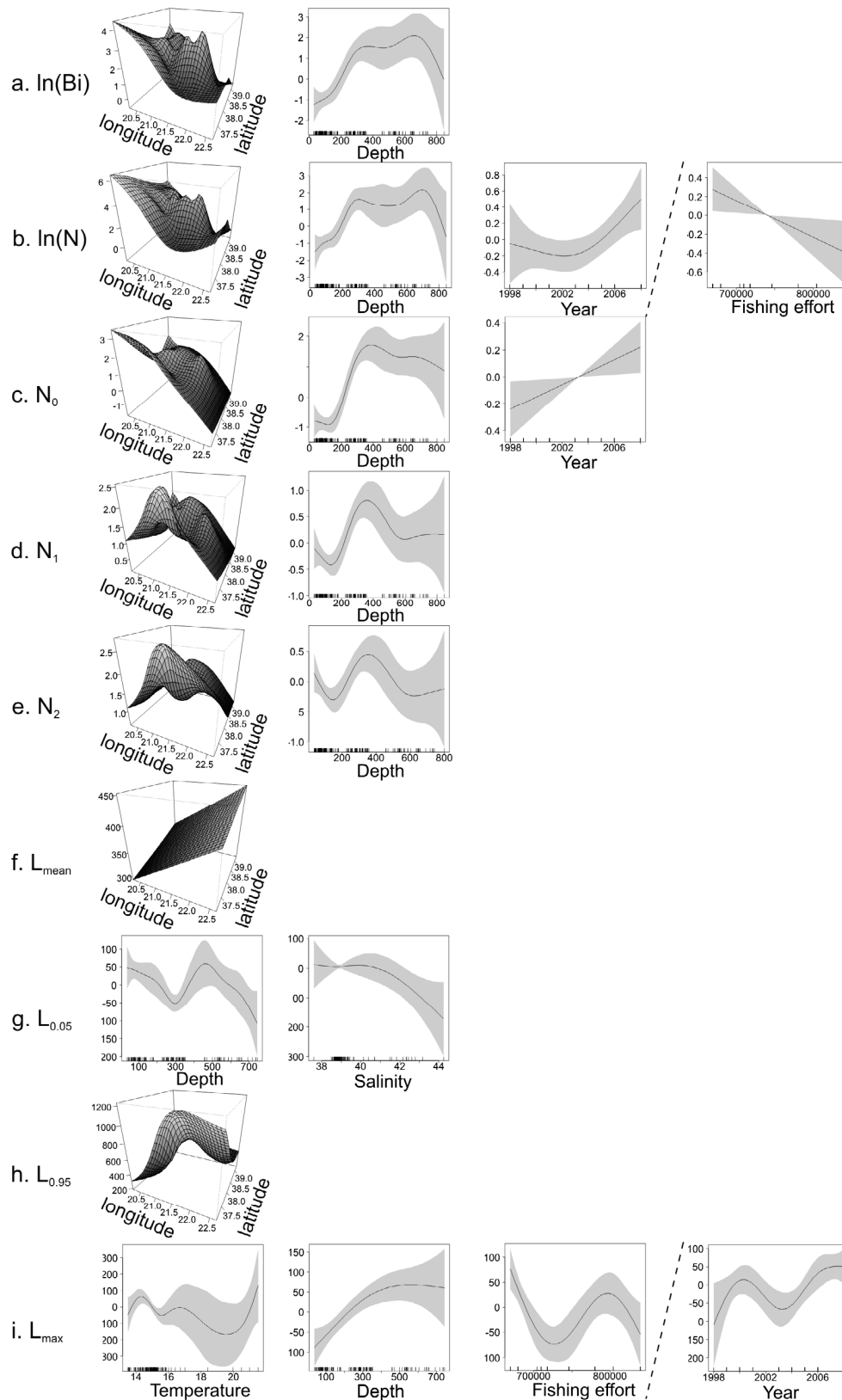
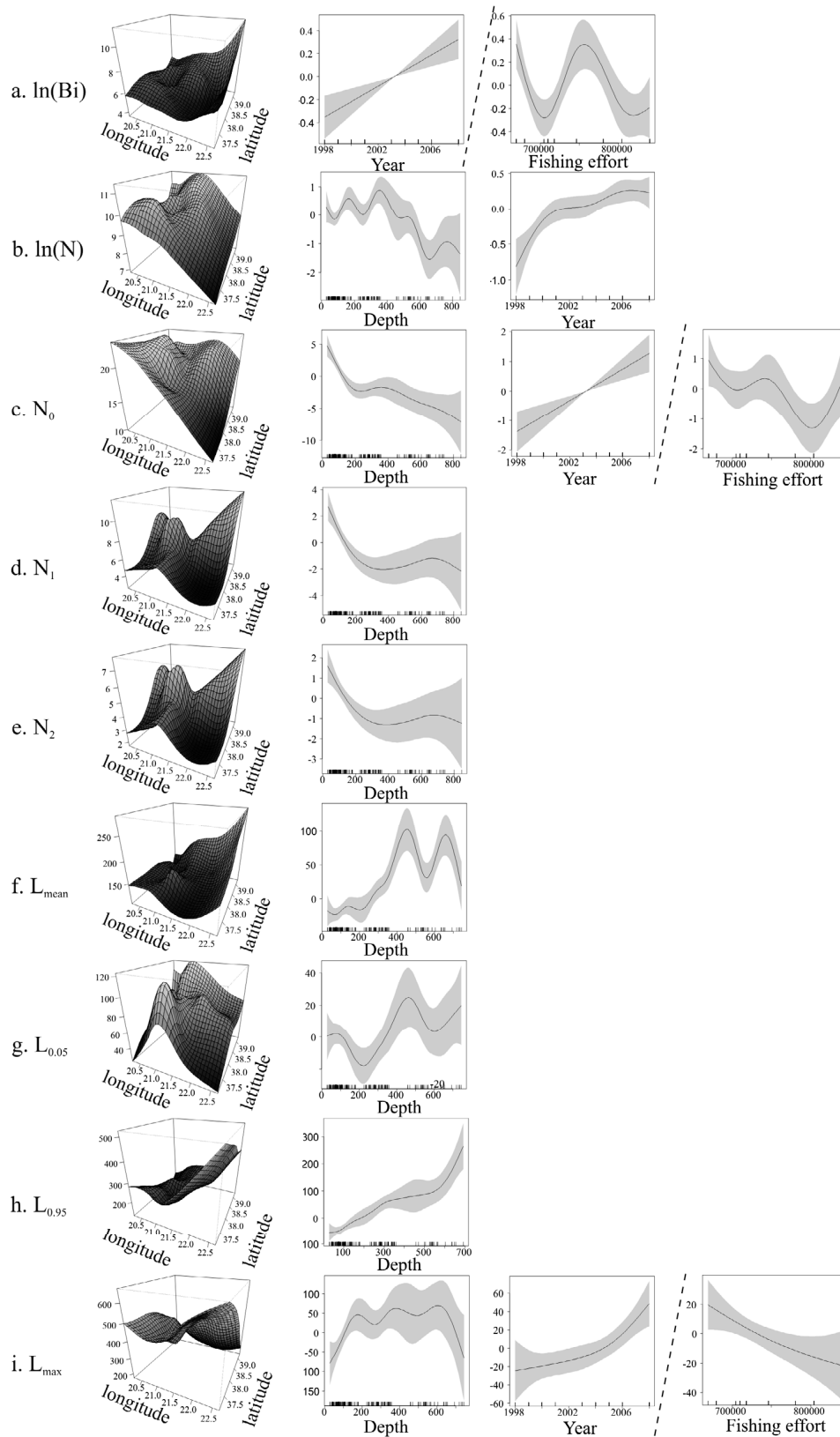


Fig. S2. (continued).

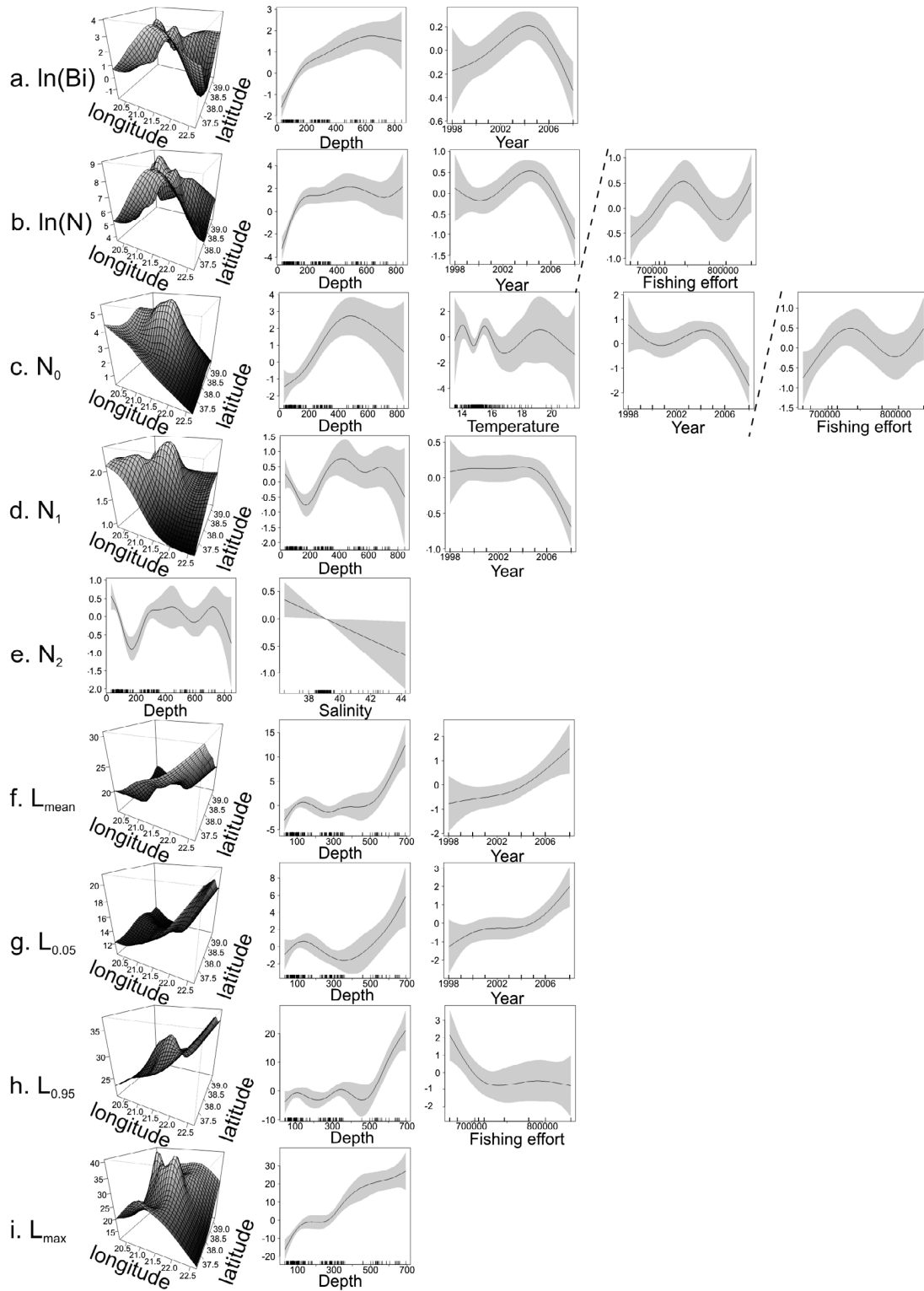


**Fig. S3.** Chondrichthyes. Estimated smooth terms of the parameters contributing to the selected GAMs for metrics of the Chondrichthyes sub-community.  $\ln(Bi)$ : natural logarithm of biomass;  $\ln(N)$ : natural logarithm of abundance;  $N_0$ ,  $N_1$  and  $N_2$ : diversity indices from Hill's series; for definition of the remaining length metrics see text; diagonal dashed lines indicate alternative models (see Table 3 for more information); grey areas are 95% confidence intervals; Rug plots indicate the distribution of the observed values.

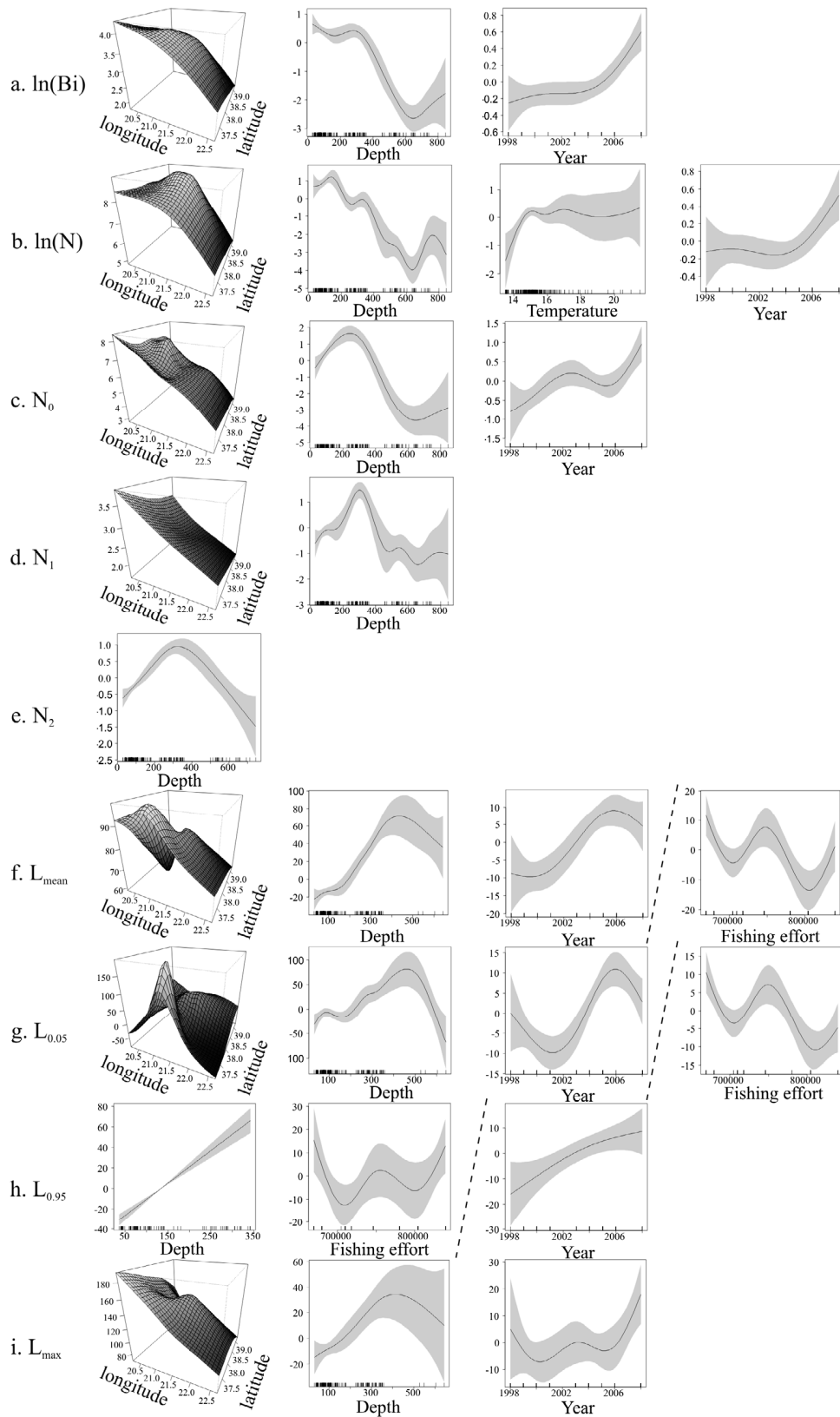


**Fig. S4.** Osteichthyes. Estimated smooth terms of the parameters contributing to the selected GAMs for metrics of the Osteichthyes sub-community.  $\ln(Bi)$ : natural logarithm of biomass;  $\ln(N)$ : natural logarithm of abundance;  $N_0$ ,  $N_1$  and  $N_2$ : diversity indices from Hill's series; for definition of the remaining length metrics see text; diagonal dashed lines indicate alternative models (see Table 3 for more information); grey areas are 95% confidence intervals; Rug plots indicate the distribution of the observed values.

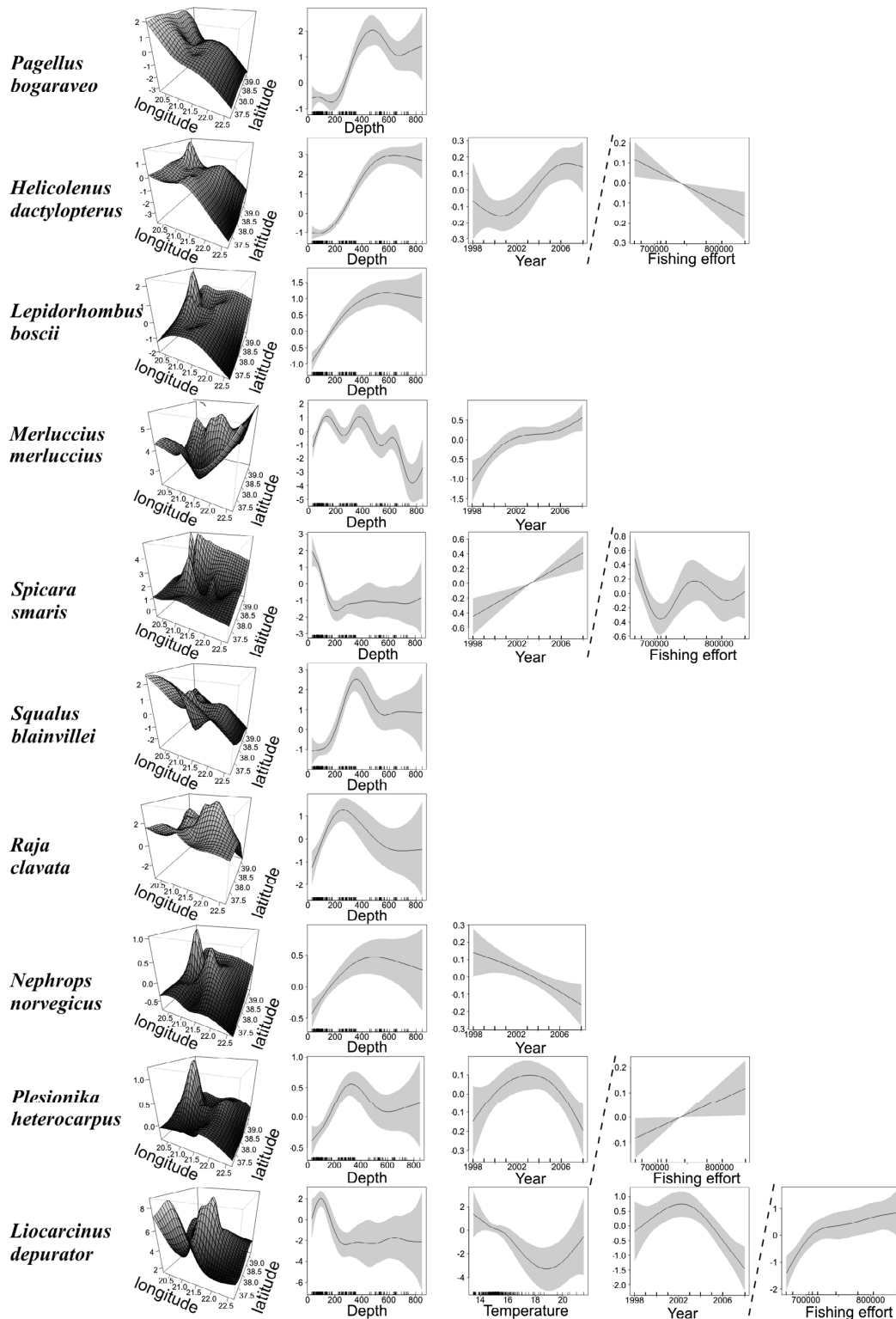




**Fig. S5.** Crustaceans. Estimated smooth terms of the parameters contributing to the selected GAMs for metrics of the Crustacean sub-community.  $\ln(Bi)$ : natural logarithm of biomass;  $\ln(N)$ : natural logarithm of abundance;  $N_0$ ,  $N_1$  and  $N_2$ : diversity indices from Hill's series; for definition of the remaining length metrics see text; diagonal dashed lines indicate alternative models (see Table 3 for more information); grey areas are 95% confidence intervals; Rug plots indicate the distribution of the observed values.



**Fig. S6.** Cephalopoda. Estimated smooth terms of the parameters contributing to the selected GAMs for metrics of the Cephalopod sub-community.  $\ln(Bi)$ : natural logarithm of biomass;  $\ln(N)$ : natural logarithm of abundance;  $N_0$ ,  $N_1$  and  $N_2$ : diversity indices from Hill's series; for definition of the remaining length metrics see text; diagonal dashed lines indicate alternative models (see Table 3 for more information); grey areas are 95% confidence intervals; Rug plots indicate the distribution of the observed values.



**Fig. S7.** All selected species. Estimated smooth terms of the parameters contributing to the selected GAMs for the natural transformed biomass of selected species. Diagonal dashed lines indicate alternative models (see Table 5 for more information); grey areas are 95% confidence intervals; rug plots indicate the distribution of the observed values.