

Fig. S1. Map of marine ecoregions included in this study (after Spalding et al., 2007). Biogeographic provinces within each realm are also indicated.

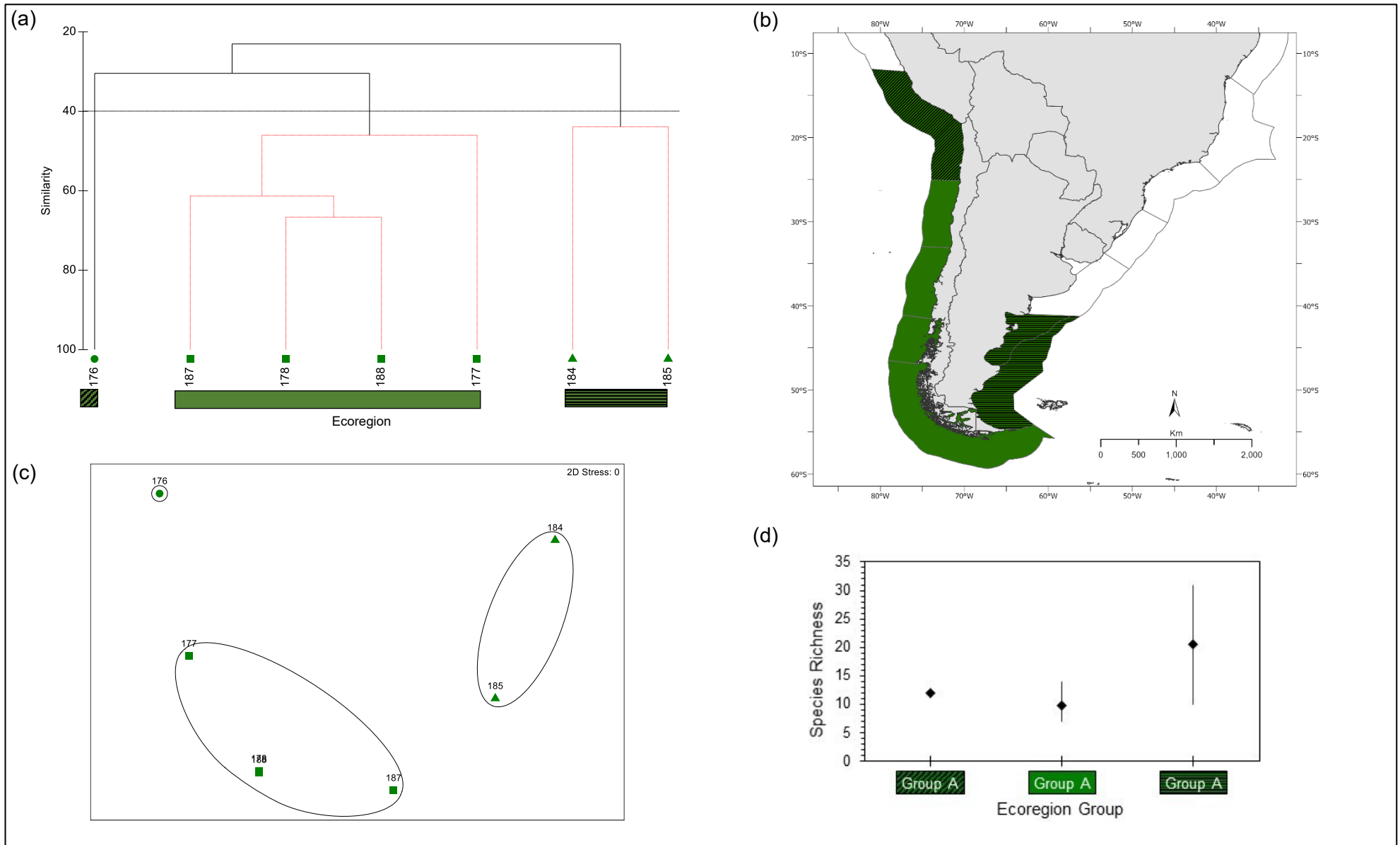


Fig. S2. Analysis of estuary-associated fish species meta-assemblages recorded in Group A ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 40%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities (groupings identified in the cluster analysis at a similarity of 40% are also indicated); (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

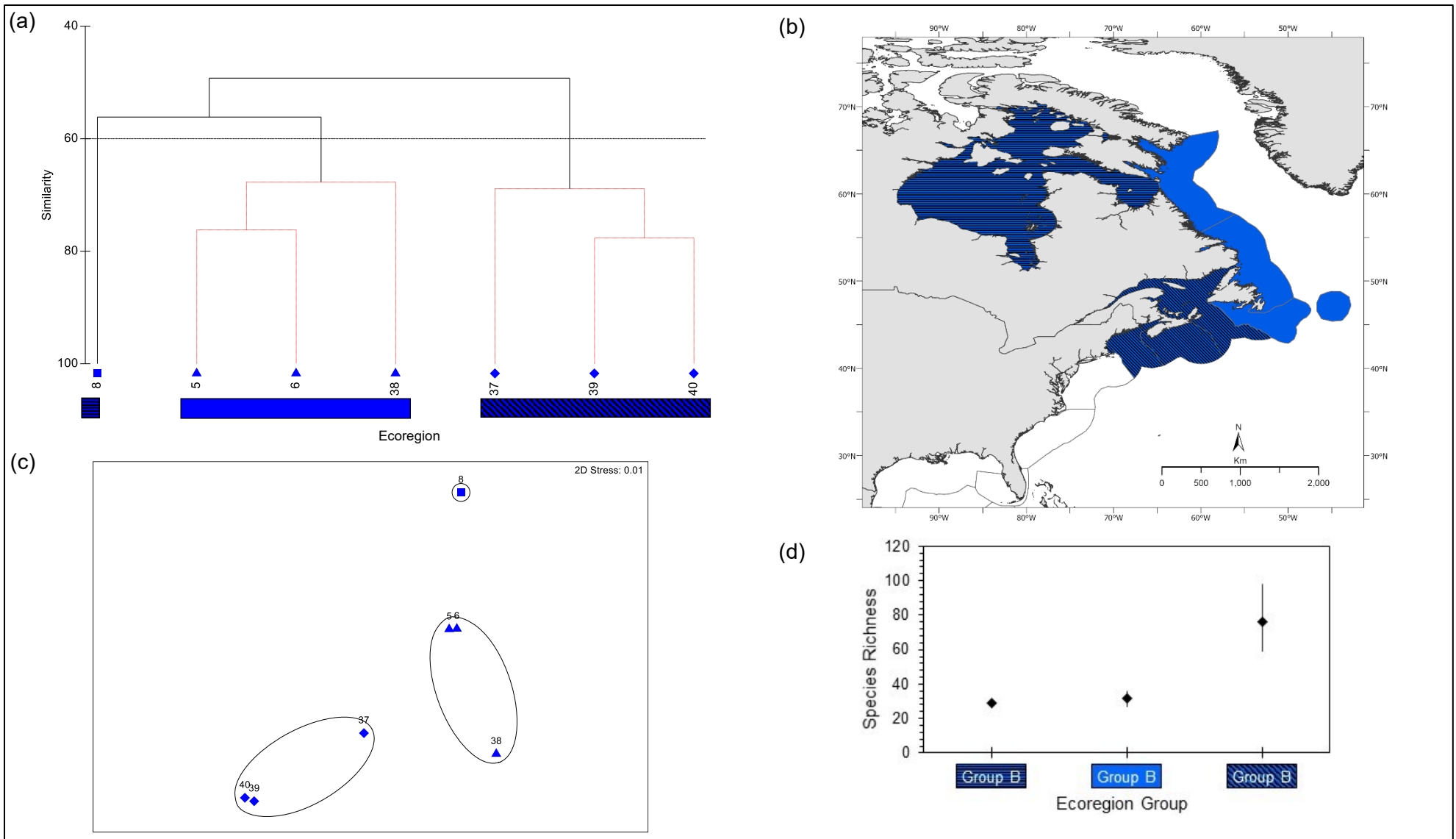


Fig. S3. Analysis of estuary-associated fish species meta-assemblages recorded in Group B ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 60%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 60% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

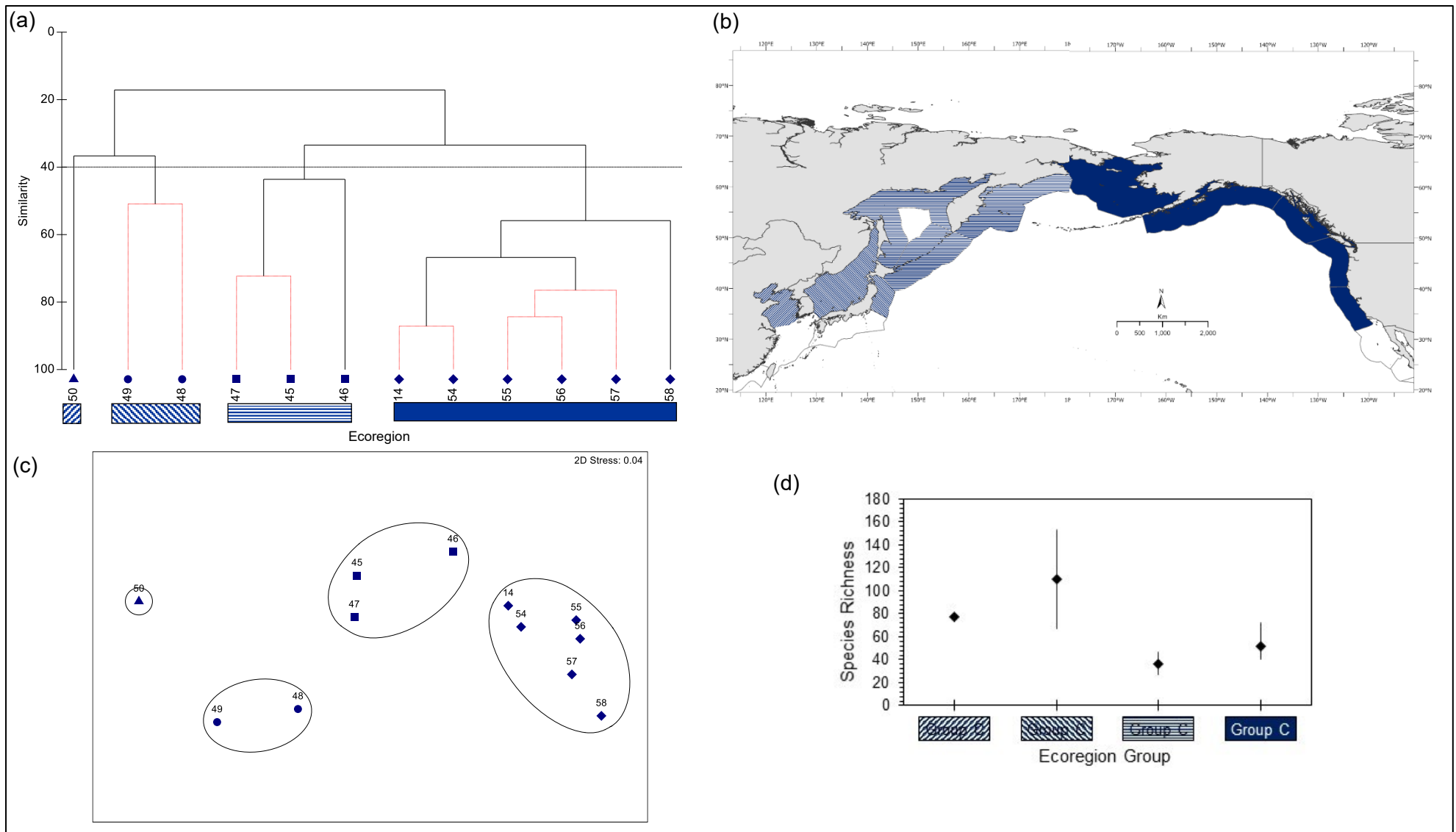


Fig. S4. Analysis of estuary-associated fish species meta-assemblages recorded in Group C ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 40%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

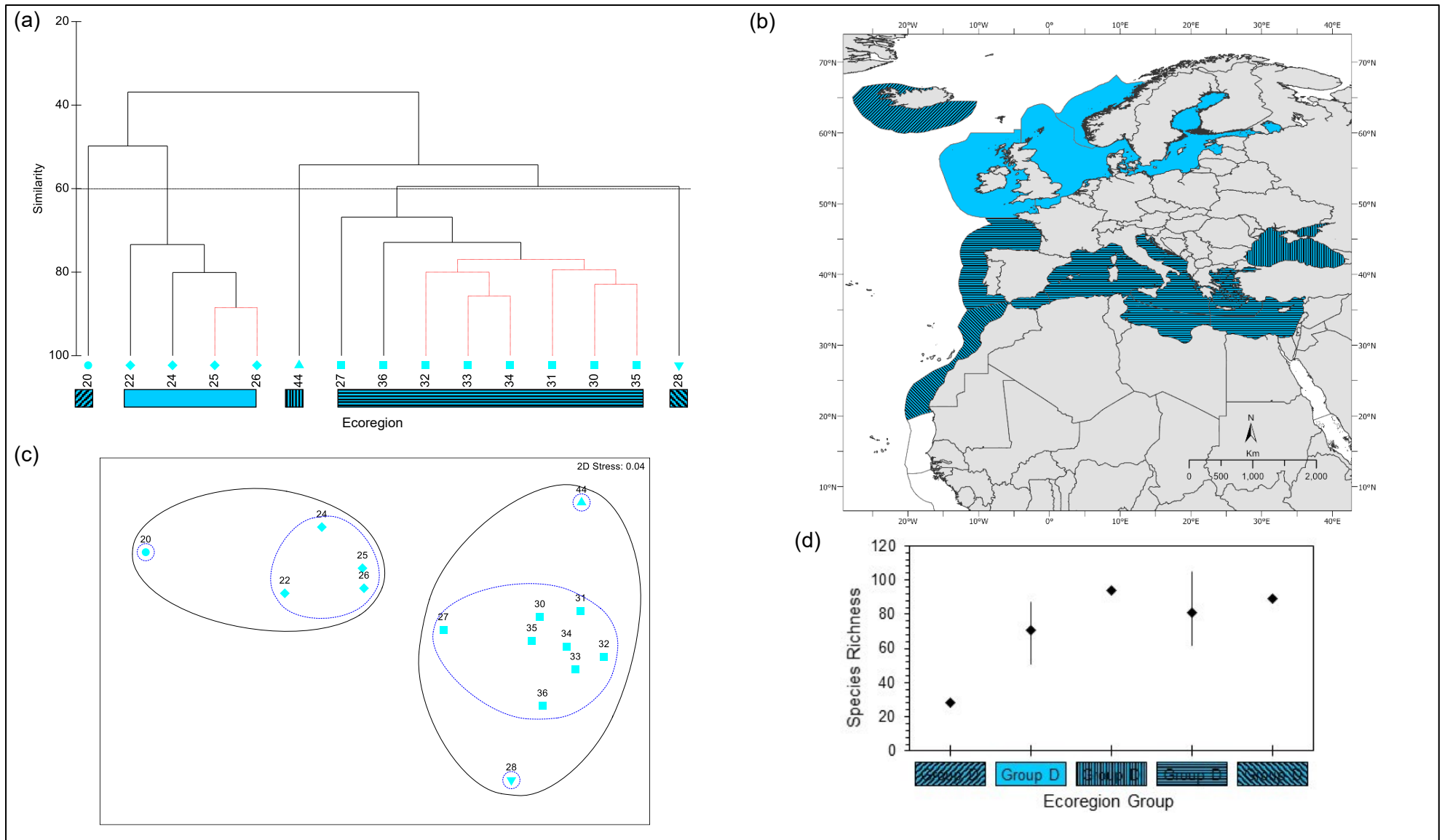


Fig. S5. Analysis of estuary-associated fish species meta-assemblages recorded in Group D ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 60%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2006)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% (solid line) and 60% (dashed line) are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

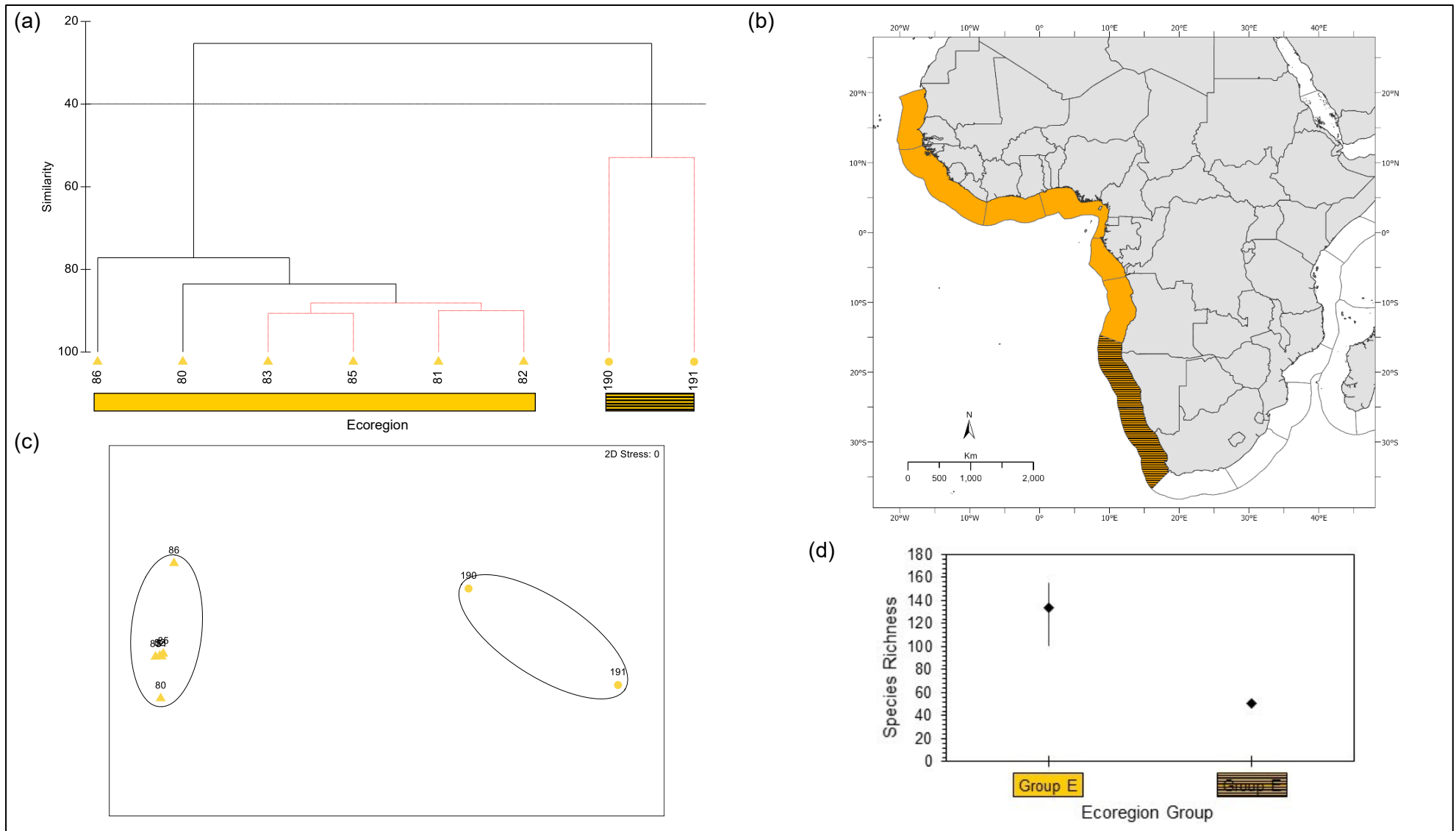


Fig. S6. Analysis of estuary-associated fish species meta-assemblages recorded in Group E ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 40%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

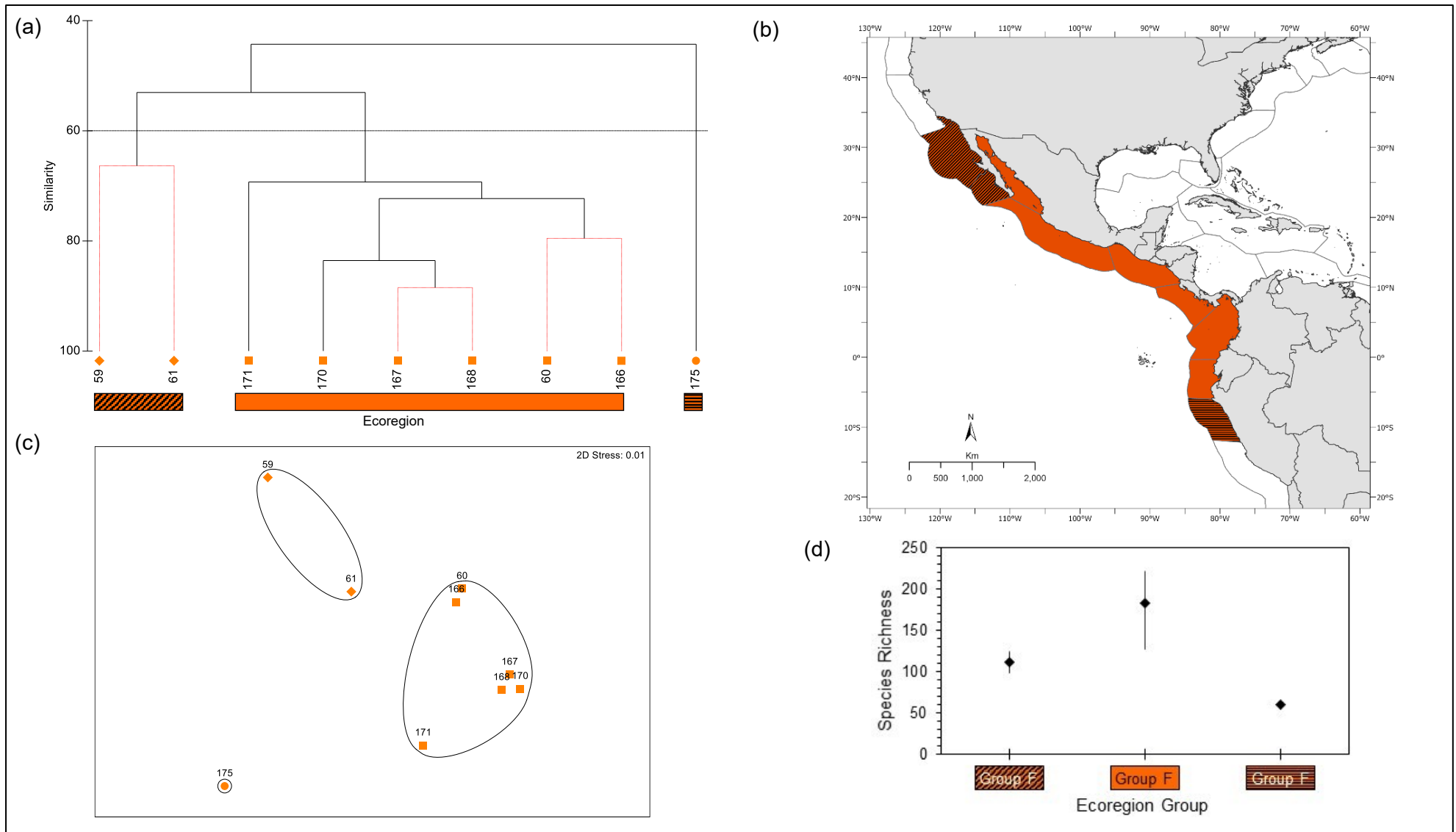


Fig. S7. Analysis of estuary-associated fish species meta-assemblages recorded in Group F ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 60%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2006)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 60% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

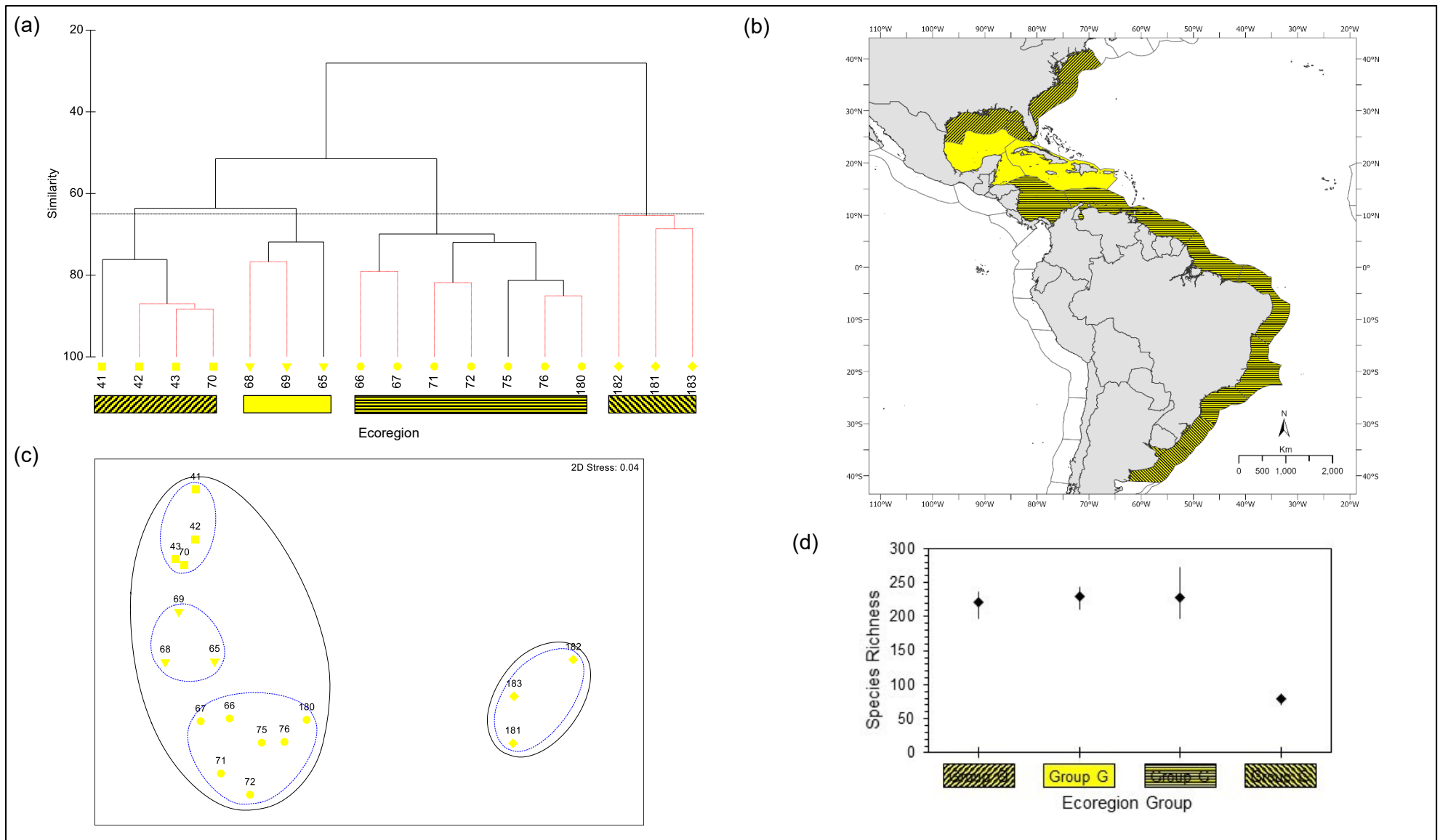


Fig. S8. Analysis of estuary-associated fish species meta-assemblages recorded in Group G ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 65%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% (solid line) and 65% (dashed line) are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).



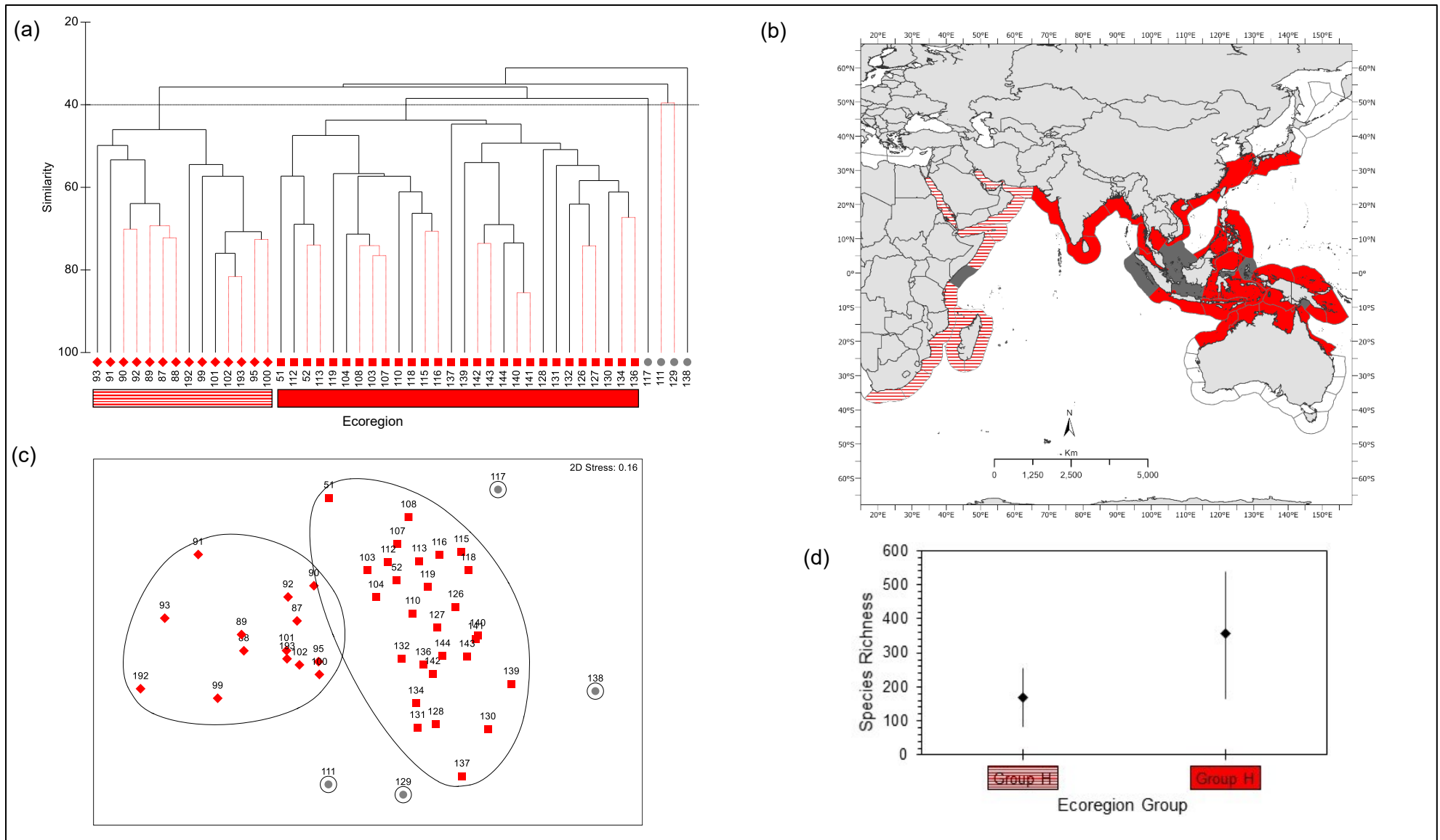


Fig. S9. Analysis of estuary-associated fish species meta-assemblages recorded in Group H ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 40%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2006)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

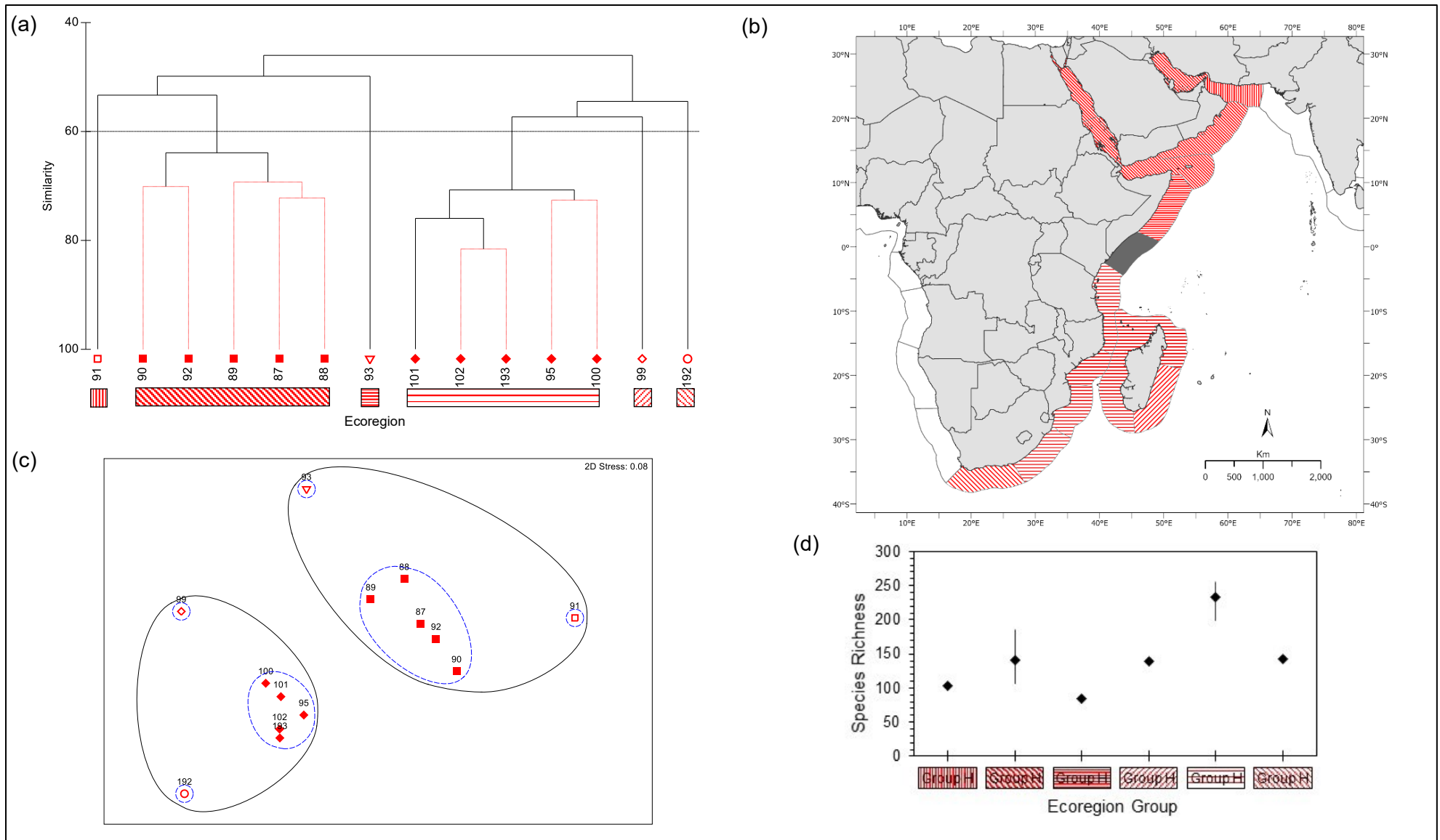


Fig. S10. Analysis of estuary-associated fish species meta-assemblages recorded in Group H Western Indian Ocean ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 60%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 50% (solid line) and 60% (dashed line) are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

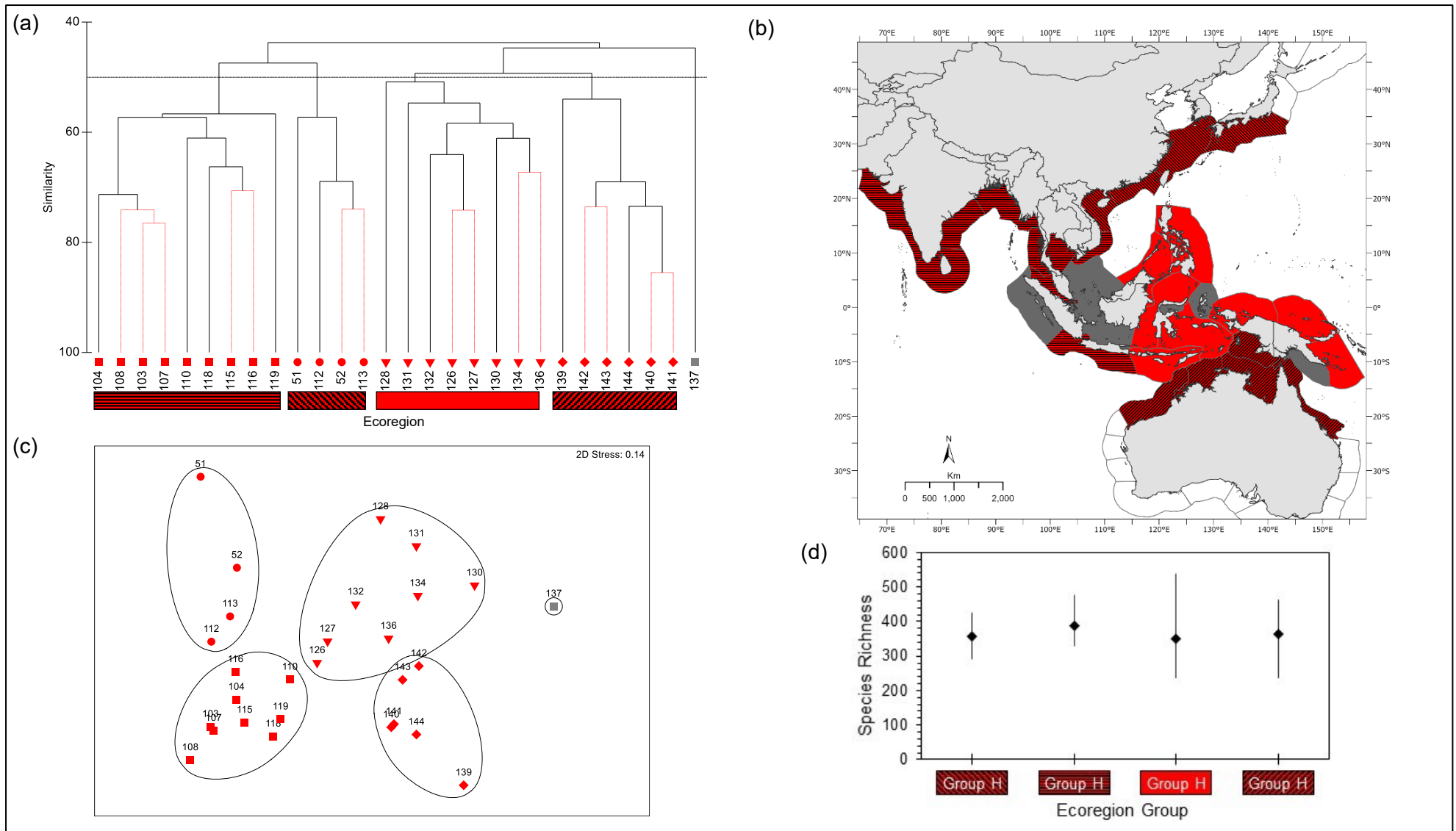


Fig. S11. Analysis of estuary-associated fish species meta-assemblages recorded in Group H Indo-West Pacific ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 50%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 50% are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

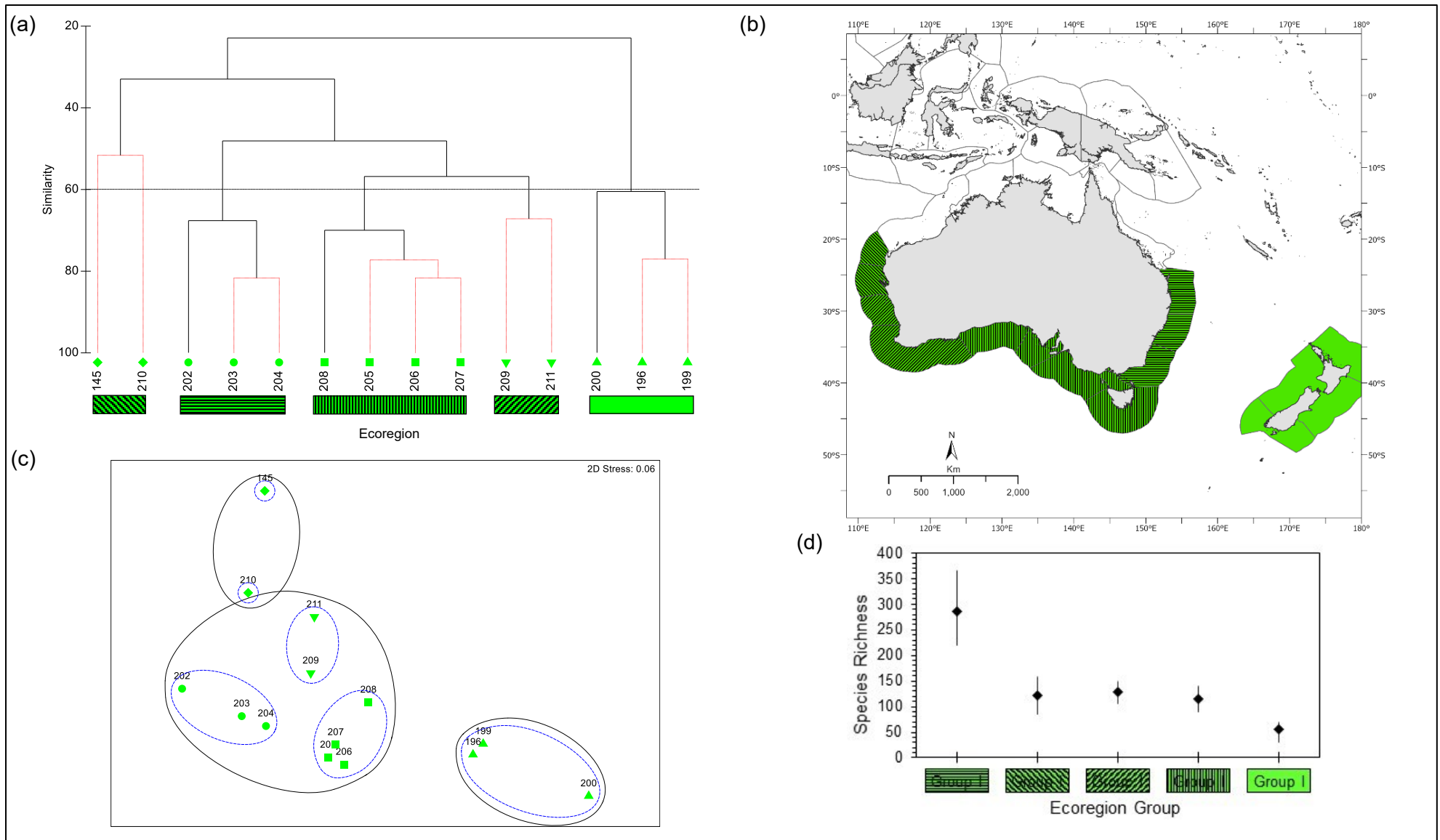


Fig. S12. Analysis of estuary-associated fish species meta-assemblages recorded in Group I ecoregions (a) cluster analysis of fish species similarities, the horizontal line represents a similarity level of 60%; the results of the SIMPROF test are also indicated where red lines indicate no significant difference between ecoregions or groupings (ecoregion numbers follow Spalding et al. (2007)); (b) geographic distribution of ecoregion sub-groups obtained through cluster analysis; (c) MDS ordination of fish species similarities, groupings identified in the cluster analysis at a similarity of 40% (solid line) and 65% (dashed line) are also indicated; (d) mean fish species richness of each ecoregion grouping (vertical lines represent minimum and maximum values).

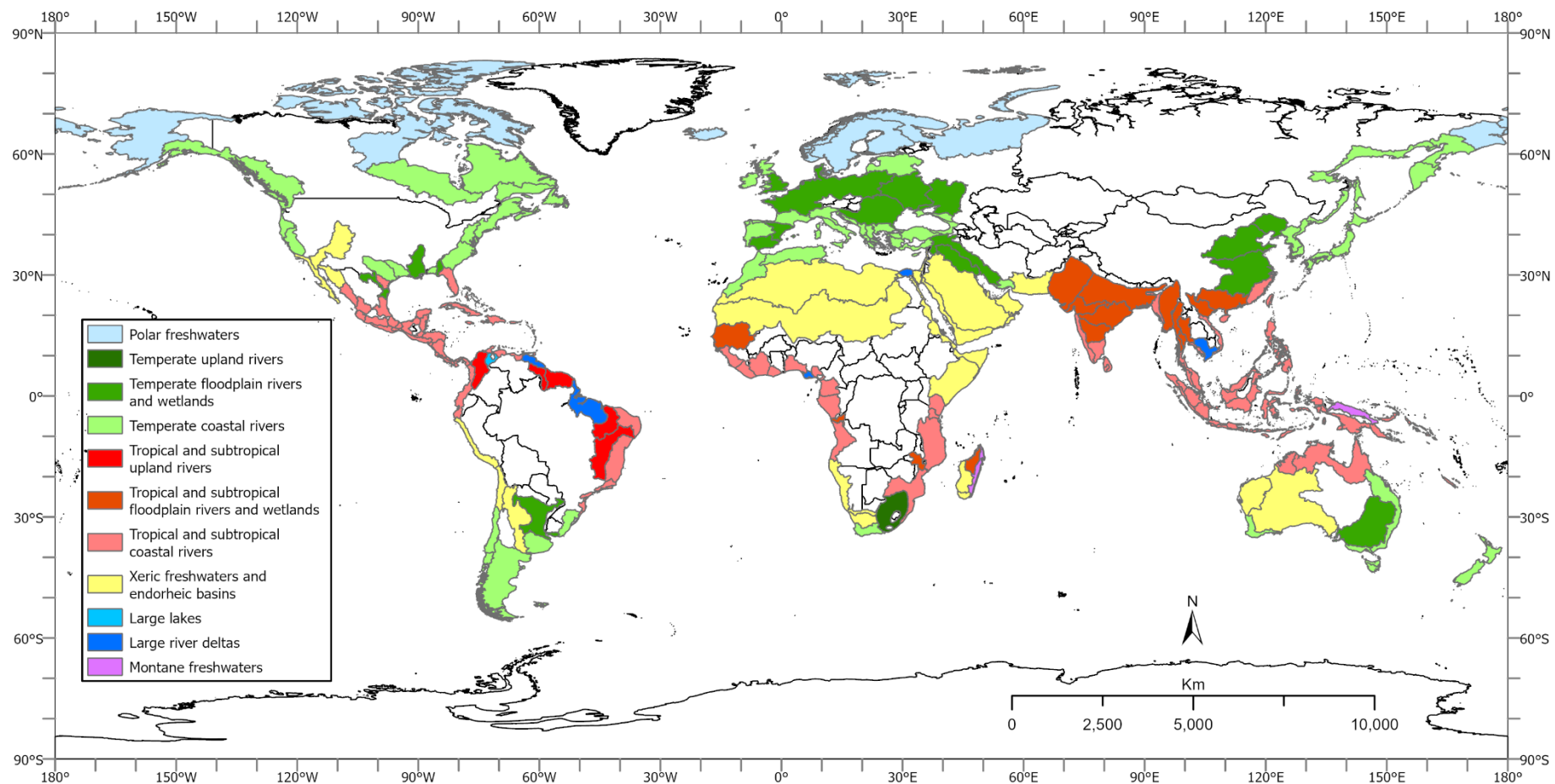


Fig. S13. Freshwater major habitat types associated with coastal regions of the world based on a global biogeographic regionalisation of freshwater habitats (after FEOW, 2021).