

Supplement 1

Table S1. Geographical position, water depth, sediment type, protection status, and sedimentation rates for the eight sampling stations. Average sedimentation rates (Av. sed.rate) from shell dating for the stations Brijuni, Piran1, Piran2, and Venice are derived from median ages of stratigraphic units best corresponding to the uppermost 15 cm of sediment: Brijuni: 20 cm, 300–600 y, Piran 1: 16 cm, 1,000–3,100 y, Piran 2: 16 cm, 1,500–3,500 y and Venice: 30 cm, 870–1,100 y, data from Gallmetzer et al. (2019). Rates are calculated by dividing the depth of these stratigraphic units by upper and lower values of the median age range. For Station D, no sediment and shell dating data exist, and sediment type was classified visually.

^awithin perimeter of oceanographic buoy, ^bwithin boundaries of a Marine Protected Area, ^cdata from Tomašových et al. (2018), ^ddata from Gallmetzer et al. (2019).

Station	Coordinates	Water-depth (m)	Sediment type	Protected area	Av. sed.rate/ sediment dating (cm y ⁻¹)	Av. sed.rate/ shell dating (cm y ⁻¹)
Po 3	44.841183°N, 12.560700°E	21	mud	no	2.6 ^c	2.1 ^c
Po 4	44.736417°N, 12.449667°E	21	mud	yes ^a	2.2 ^c	2.0 ^c
Panzano	45.735433°N, 13.600417°E	12	mud	no	0.24 ^c	0.2 ^c
Station D	45.289283°N, 12.923783°E	30	muddy sand	no	NA	NA
Brijuni	44.885533°N, 13.747333°E	44	sandy mud	yes ^b	0.15 ^d	0.07-0.03
Piran 1	45.548467°N, 13.550633°E	22	muddy sand	yes ^a	0.29 ^d	0.02-0.005
Piran 2	45.557533°N, 13.534933°E	23	muddy sand	no	0.16 ^d	0.01-0.004
Venice	45.377933°N, 12.776150°E	21	sand	no	0.88 ^d	0.04-0.03

Dataset S1. (see Supplement 2 at http://www.int-res.com/articles/suppl/m671p045_supp2.xls)

Text S1. Metrics to evaluate LD mismatch

- 1) The Non-parametric Spearman rank order test (Spearman’s ρ) analyses rank-order agreement in species relative abundance. This index is most sensitive to large shifts in the rank of species (Kidwell 2009). Spearman coefficients are positive when species display similar ranks in both the DA and the LA, and negative when the rank order of the DA is reversed in the LA (species dominant in one assemblage are rare in the other and vice versa). Values around zero indicate random rank distributions between DA and LA.
- 2) The Jaccard-Chao index (JC) evaluates differences in taxonomic composition between DA and LA (Chao et al. 2005). The index is zero if no species are shared, and 1 if all species found in the DA occur also in the LA.
- 3) Bray-Curtis dissimilarity (BC) is an abundance-based index to quantify differences in species populations between DA and LA. We calculated it using square root transformed proportional abundances. It has a value between 0 (all species shared) and 1.
- 4) Delta S (ΔS) determines life-dead mismatch in terms of species richness. ΔS is the logarithmic difference between values of species richness in the DA and the observed species richness in the LA: $\Delta S = \log(\text{rarefied } S_{DA}) - \log(\text{observed } S_{LA})$ (Olszewski 2004, Kidwell 2009). ΔS is zero when species richness is equal in LA and DA, > 0 when dead species richness is higher, and < 0 in the opposite case.
- 5) The Probability of Interspecific Encounter (ΔPIE) detects life-dead mismatches in taxonomic evenness, by subtracting evenness values of the LA from those of the DA ($\Delta PIE = PIE_{DA} - PIE_{LA}$) (Olszewski 2004). The accuracy of this metric is not affected by sample size and does, hence, not require any procedure for sample size correction (Gotelli & Graves 1996). Positive ΔPIE values indicate that the DA is more even than the LA, negative values occur in the opposite case. A value of zero results from equally even DA and LA.

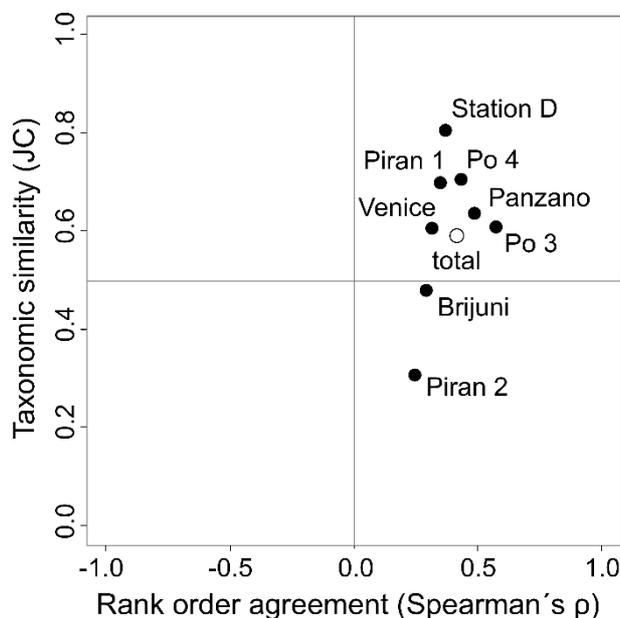


Fig. S1. Taxonomic similarity (Jaccard-Chao similarity index, JC) plotted against rank order agreement (Spearman’s ρ) for each station and for the total assemblage. Stations in the upper-right quarter are characterised by the highest life-dead agreement. High sedimentation sites (Po and Panzano) show higher rank order agreement. Except for Piran 2 and Brijuni, taxonomic similarity is good.

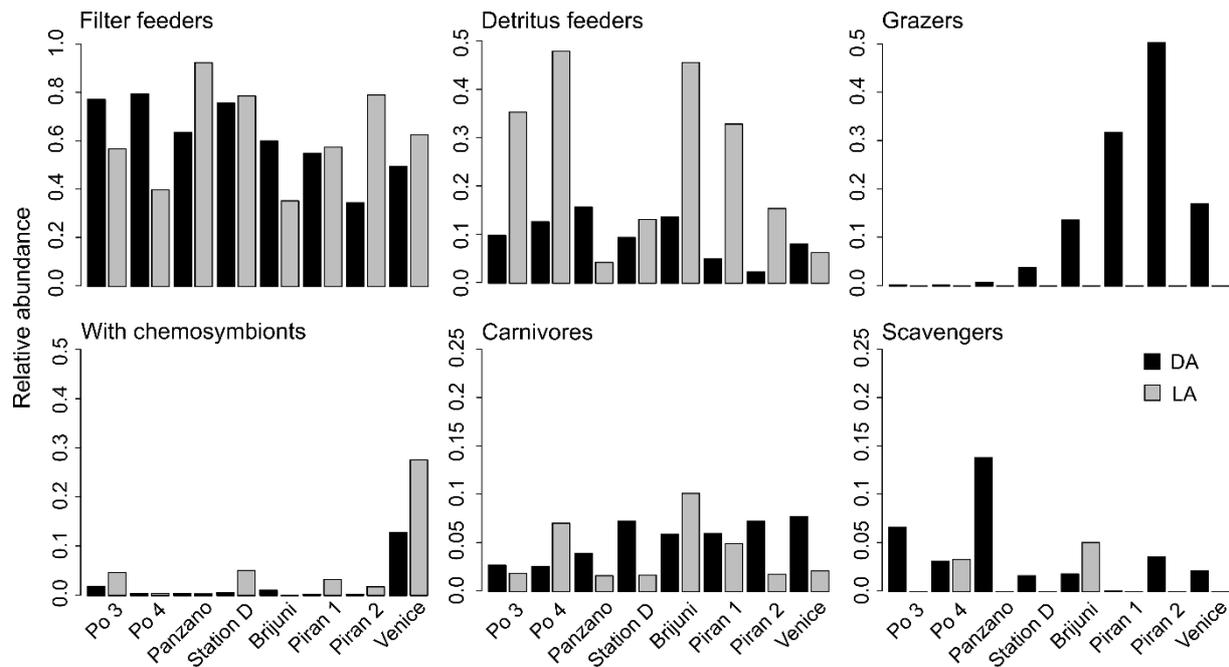


Fig. S2. Proportional abundances of individual feeding guilds for DAs and LAs per station. DA: death assemblage, LA: living assemblage.

Supplementary references

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