

Title (max 20 words)

Host-parasite communities along a gradient of environmental disturbances preserve their structure but differ in driving factors

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Abstract (max 250 words)

Host-parasite communities are biased toward high degrees of intervality. It is expected that as new host-parasite interactions emerge co-evolutionary dynamics saturate the communities. This implies that a host-parasite matrix of interactions can be ordered so that the host ranges of parasite species are contiguous segments. Although, intervality may not be complete as in some segments gaps appear because of constraints imposed by other parasites' host ranges. However, we do not know if the interval structure is preserved when host and parasite diversities are affected. We assessed the degree of intervality [0,1] of helminth-rodent communities in a gradient of environmental disturbance. We evaluated what factors explain the interval ordinations: phylogeny, overlap in ecological interactions, or their combination. Communities along the gradient of environmental disturbance had a high degree of intervality: 0.75-0.87 for parasites and 0.86-0.93 for hosts. These results suggest that all host-parasite communities are saturated regardless of the environmental disturbances. From parasites' perspective, both host phylogeny and host overlap in their parasite community explained intervality. From hosts' perspective, none of the considered factors significantly explained intervality, although their relative importance differed between habitats. In climax or less disturbed habitats the combined information was the most relevant factor in explaining intervality. Whereas in disturbed habitats, the overlap in ecological interactions was the first factor to explain intervality. Our study suggests that, despite the structure of the network is preserved, different factors must be considered when predicting host-parasite interactions in habitats differing by disturbance.